Prof. Dr. Alfred Toth

The Theory of the Night

2nd, enlarged edition

Semiotic Technical Laboratory
Tucson, AZ

Cover-picture: “Gang in die Nacht (Journey into the Night)” (1921), directed by F.W. Murnau (1888-1931)

Zwar hat der Idealismus mit dem Gedanken des im ewigen Jetzt vollendeten Logos das metaphysische Bewusstsein des Abendlandes bis an die Höhe des absoluten Todes herangeführt. Bewältigt aber hat er diese Idee nicht, denn er spricht nur von der absoluten Logik der Gedanken Gottes. Von der Möglichkeit einer absoluten Ethik der göttlichen Existenz, d.h. von einer Metaphysik des Willens weiss er nichts. Und nirgends (ausser in zusammenhanglosen Einfällen Schellings) ist sein Wissen von der Ahnung berührt, dass die durchsichtige Helle des reinen Begriffs, die wie ein sonniges Mittagslicht über dem reellen Leben des konkreten Bewußtseins leuchtet, ihren Ursprung aus der transzendentalen Nacht eines Willens, der noch nicht Entscheidung und deshalb noch nicht lebendige, durchleuchtete Wirklichkeit geworden ist, herleitet.

Idealism has led the metaphysical consciousness of the Occident with the thought of the logos, completed in the eternal Now, up to the height of the absolute Death. However, it has not mastered this idea, since it speaks solely about the absolute logic of the existence of God. It has no idea of the possibility of an absolute ethics of the divine existence. And nowhere (except in disconnected ideas of Schelling), its knowledge is touched by the suspicion, that the translucent brightness of the pure notion, which shines like a sunny midday-light above the real life of the concrete consciousness, deduces its origin from the transcendental Night of a Will, which has not yet become decision and thus not yet become living, shining reality.

Gotthard Günther (1937, p. 45)

Preface

> „In dem späteren Individuum ist die Angst mehr reflektiert. Dies kann so ausgedrückt werden, dass das Nichts, das der Gegenstand der Angst ist, gleichsam immer mehr zu einem Etwas wird. Wir sagen nicht, dass es wirklich etwas wird oder wirklich etwas bedeutet, wir sagen nicht, dass da nun an Stelle des Nichts die Sünde oder etwas anderes zu setzen wäre; denn hier gilt das von der Unschuld des späteren Individuums, was von der Adams gilt; alles dies ist nur für die Freiheit und nur, indem der Einzelne selbst durch den qualitativen Sprung die Sünde setzt. Das Nichts der Angst ist also hier ein Komplex von Ahnungen, die sich in sich selbst reflektieren.
>
> Søren Kierkegaard (1984, S. 58).

This book presents a semiotic negative "language" in ten different "dialects". Unlike negative language introduced into poly-contextural logic by Gotthard Günther (cf. Günther 1980, pp. 285 ss.), whose "words" are based on Hamilton circles of negative cycles and thus purely on logical values, which have by definition neither sense nor meaning, the "words" of our eight dialects of a semiotic negative language do have sense and meaning in the form of the denomination function and the denotation function as part-relations of the Peirce-Bense sign relation.

According poly-contextural logic and ontology, logical position is the reign of cognition, while logical negation is the reign of volition. Negative languages are thus nothing else than action schemata ("Handlungsanweisungen", G. Günther), and are therefore best described in semiotics by creation schemata, which had been already introduced by Charles Sanders Peirce in his paper "Analysis of creation" (cf. Semiosis 2, 1976, pp. 5-9). However, "BT"-Semiotics ("Bense-Toth Semiotics", a term coined by Rudolf Kaehr) as a basis of our Theory of the Night has been changed, insofar all semiotic subrelations have been contexturized according to the poly-contextural semiotic studies by Rudolf Kaehr. Consequently, the category theoretic basis of the semiotic creation schemata had to be replaced by the diamond theoretic basis, also discovered by Rudolf Kaehr. This has a special impact on the "words" of the semiotic negative language, which do no longer appear as pairs of dual functions, but of chiastic relations, whose semioses are no longer restricted to the morphisms of quantitative category theory, but also include qualitative hetero-morphisms.

Since a few chapters of this book have been previously published in my "Electronic Journal of Mathematical Semiotics", starting back in 2009, the present author had the pleasure to collaborate with Prof. Dr. Rudolf Kaehr (Glasgow), and this intense joint work lasted during several years. Besides giving a lot of citations, Kaehr published several articles and a whole

book on my mathematical semiotics. Most probably, there was nobody who understood my work it in the whole range of the theory and its implications as Kaehr did. However, it took the present author years to find his "semiotic numbers", which are based on an enlarged poly-contextural logic, that allows not only to iterate the subject, but also the object position and the mediation of the values of the Aristotelian basis valid for every contexture. Approximately at the same time, when the semiotic numbers could be constructed, the present author and his colleagues from cybernetics, systems theory and semiotics had to accept the sad news that Prof. Dr. Rudolf Kaehr had suddenly passed away (cf. Toth, Obituary to Prof. Dr. Rudolf Kaehr, in the "Electronic Journal"). Therefore, the present author's intention to soon presenting to his colleague and friend the finally completed Theory of the Night, has been brutally destroyed on July 4th, 2016.

The 1st edition of this book appeared in August 2016. In the following two years, two more nights could be discovered: the ontic night, and, finally, the poly-contextural night. Only a couple of months ago it has been possible to construct a real poly-contextural semiotics, after the first ideas had been published by my dear friend Dr. Engelbert Kronthaler already in 1992 and after I had published, back in 2003, a first booklet on this topic. Therefore, the “Theory of the Night” is finally complete.

Tucson (AZ), July 17th, 2019

Prof. Dr. Alfred Toth

Contents

Introduction

1. It is a strange fact, that the sign as a scheme of action, like the sign as a scheme of representation, goes back to Aristotle (cf. Trabant 1989, pp. 79 ss.), but does not play any role in Peirce's and Bense's semiotics. However, it is perhaps not by change, that a definition of the sign as a scheme of action is lacking, although the development of the linguistic theory of action falls into the beginnings of the development of theoretical semiotics. However, it is a fact that the sign, in the framework of semiotics, is primarily not a scheme of action, because in its most general definition action means the "changing of a state of world" (Heinrichs 1980, p. 22). But states of world belong, in the terminology of Bense (1975, p. 65), to the "ontological space" of the pre-thetic objects, but not to the "semiotic space" of the thetic signs. In other words: In Peirce's and Bense's notion of the triadic sign, which is based on the mono-contextural separation between signs and object and where objects can thus only appear as object-relations, signs cannot change states of world, since they, too, can only be perceived as signs. Therefore, according to theoretical semiotics, signs can change signs, and in order to do such changes, a theory of action is not necessary. Thus, in classical mono-contextural semiotics, the theory of the semioses substitutes a theory of action, because signs can never reach their transcendental object and cannot change ontological, but only semiotic states of world.

However, it is a fact, too, which is at least known outside of classical semiotics, that signs can have effect out of their semiotic space and inside of the ontological space of the object, events, states, etc. For example, a command can start a war. But also the inverse process, thus the changing of signs by objects, is well-known. E.g., the better knowledge of high-energy physics has several times changed atomic models, which had already been believed to be correct. Hence, if someone wants to construct a semiotic theory of action that goes beyond a linguistic theory of action based again on (linguistic) signs and that is powerful enough of letting signs influence reality and vice versa, then it is necessary to abolish the border between sign and reality, i.e to replace mono-contextural through poly-contextural semiotics.

2. Such a model of a poly-contextural semiotics has been displayed by the present author (Toth 2008) under the name of "Pre-Semiotics", because the sign model which is the basis,

PZR = (3.a 2.b 1.c 0.d),

contains the object, which is represented by the artificial or natural sign, as a categorial object (0.d) and thus settles one step before thetic semiosis, in the space between the ontological and the semiotic space.

Now, in former publications, I have already shown that every triadic sign class has 6 permutations. Consequently, every tetradic sign class has 24 permutations. Furthermore, I have shown that each of these 24 permutations can be introduced as semiotic schemes of actions. Since each tetradic sign class has a dual reality thematic, we thus get for 15 pre-

semiotic dual systems $15 \cdot 2 \cdot 24 = 720$ tetradic semiotic schemes of action. Also, it had been shown that a tetradic sign class has exactly the following $4 + 15 + 24 + 24 = 67$ partial relations:

monadic partial relations: (.0.), (.1.), (.2.), (.3.).

dyadic partial relations: (0.1), (0.2), (0.3), (1.0), (2.0), (3.0), (1.1), (1.2), (1.3), (2.1), (2.2), (2.3), (3.1), (3.2), (3.3).

triadic partial relations: (0., 2., 1.), (0., 1., 2.), (1., 2., 0.), (1., 0., 2), (2., 1., 0.), (2., 0., 1), (3., 2., 1.), (3., 1., 2.), (2., 3., 1.), (2., 1., 3.), (1., 3.,2.), (1., 2., 3), (0., 3., 2.), (0., 2., 3.), (2., 3., 0.), (2., 0., 3.), (3., 2., 0.), (3., 0., 2.), (0., 3., 1.), (0., 1., 3.), (1., 3., 0.), (1., 0., 3.), (3., 1., 0.), (3., 0., 1.).

tetradic partial relations: (3., 2., 1., 0.), (2., 3., 1., 0.), (2., 1., 3., 0.), (1., 2., 3., 0.), (3., 1., 2., 0.), (1., 3., 2., 0.), (2., 3., 0., 1.), (3., 2., 0., 1.), (2., 1., 0., 3.), (1., 2., 0., 3.), (3., 1., 0., 2.), (1., 3., 0., 2.), (2., 0., 3., 1.), (3., 0., 2., 1.), (2., 0., 1., 3.), (1., 0., 2., 3.), (3., 0., 1., 2.), (1., 0., 3., 2.), (0., 2., 3., 1.), (0., 3., 2., 1.), (0., 1., 2., 3.), (0., 2., 1., 3.), (0., 3., 1., 2.), (0., 1., 3., 2.).

We thus get totally $15 \cdot 2 \cdot 67 = 2'010$ semiotic schemes of actions, which are poly-contexturally simply because of the elimination of the discontexturality between sign and object and the embedding of the object qua categorial object into the sign relation.

3. Moreover, I had also shown that the pre-semiotic tetradic sign relation is complete regarding to epistemological, logical and ontological relation insofar as we have the following isomorphies between logical relations and semiotic categories:

subjective subject (sS) ≅ Thirdness (interpretant relation, I)
objective object (oO) ≅ Secondness (object relation, O)
subjective object (sO) ≅ Firstness (medium relation, M)
objective subject (oS) ≅ Zeroness (quality, Q)

Therefore, we can display the above 67 semiotic-numerical partial relations also in the following semiotic-logical form:

3.1. Monadic semiotic-logical partial relations

(sO), (oS), (oO), (sS).

3.2. Dyadic semiotic-logical partial relations

((s0), (oS)); ((s0), (o0)); ((s0), (sS)); ((oS), (s0)); ((o0), (s0)); ((sS), (s0)); ((oS), (oS)); ((oS), (o0)); ((oS), (sS)); ((o0), (oS)); ((o0), (o0)); ((o0), (sS)); ((sS), (oS)); ((sS), (o0)), ((sS), (sS)).

3.3. Triadic semiotic-logical partial relations

((s0), (o0), (oS)); ((s0), (oS)), (o0)); ((oS), (o0), (s0)); ((oS), (s0), (o0)); ((o0), (oS), (s0)); ((o0), (s0), (oS)); ((sS), (o0), (oS)); ((sS), (oS), (o0)); ((o0), (sS), (oS)); ((o0), (oS), (sS)); ((oS), (sS), (o0)); ((oS), (o0), (sS)); ((s0), (sS), (o0)); ((s0), (o0), (sS); ((o0), (sS), (s0)); ((o0), (s0), (sS)); ((sS), (o0), (s0)); ((sS), (s0), (o0)); ((s0), (sS), (oS)); ((s0), (oS), (sS)); ((oS), (sS), (s0)); ((oS), (s0), (sS)); ((sS), (oS), (s0)); ((sS), (s0), (oS)).

A triadic partial relation of a tetradic semiotic relation is a combinatorial selection of the four pre-semiotic categories (0.), (.1.), (.2.), (.3.) or (s0), (oS), (o0), (sS), respectively. I.e., we thus can either (0., .1., .2.), (.1., .2., .3.), (0., .2., .3.) or (0., .1., .3.) combine to triads. In doing so, we get the following $2 \cdot 24 = 48$ permutations

(0.d 2.b 1.c) × (c.1 b.2 d.0) → ((s0), (o0), (oS)) ×((s0), (o0), (oS))
(0.d 1.c 2.b) × (b.2 c.1 d.0) → ((s0), (oS), (o0)) × ((o0), (s0), (oS))
(1.c 2.b 0.d) × (d.0 b.2 c.1) → ((oS), (o0), (s0)) × ((oS), (o0), (s0))
(1.c 0.d 2.b) × (b.2 d.0 c.1) → ((oS), (s0), (o0)) × ((o0), (oS), (s0))
(2.b 1.c 0.d) × (d.0 c.1 b.2) → ((o0), (oS), (s0)) × ((oS), (s0), (o0))
(2.b 0.d 1.c) × (c.1 d.0 b.2) → ((o0), (s0), (oS)) × ((s0), (oS), (o0))
(3.a 2.b 1.c) × (c.1 b.2 a.3) → ((sS), (o0), (oS)) × ((s0), (o0), (sS))
(3.a 1.c 2.b) × (b.2 c.1 a.3) → ((sS), (oS), (o0)) × ((o0), (s0), (sS))
(2.b 3.a 1.c) × (c.1 a.3 b.2) → ((o0), (sS), (oS)) × ((s0), (sS), (o0))
(2.b 1.c 3.a) × (a.3 c.1 b.2) → ((o0), (oS), (sS)) × ((sS), (s0), (o0))
(1.c 3.a 2.b) × (b.2 a.3 c.1) → ((oS), (sS), (o0)) × ((o0), (sS), (s0))
(1.c 2.b 3.a) × (a.3 b.2 c.1) → ((oS), (o0), (sS)) × ((sS), (o0), (s0))
(0.d 3.a 2.b) × (b.2 a.3 d.0) → ((s0), (sS), (o0)) × ((o0), (sS), (oS))
(0.d 2.b 3.a) × (a.3 b.2 d.0) → ((s0), (o0), (sS)) × ((sS), (o0), (oS))
(2.b 3.a 0.d) × (d.0 a.3 b.2) → ((o0), (sS), (s0)) × ((oS), (sS), (o0))
(2.b 0.d 3.a) × (a.3 d.0 b.2) → (o0), (s0), (sS)) × ((sS), (oS), (o0))
(3.a 2.b 0.d) × (d.0 b.2 a.3) → ((sS), (o0), (s0)) × ((oS), (o0), (sS))
(3.a 0.d 2.b) × (b.2 d.0 a.3) → ((sS), (s0), (o0)) × ((o0), (oS), (sS))
(0.d 3.a 1.c) × (c.1 a.3 d.0) → ((s0), (sS), (oS)) × ((s0), (sS), (oS))
(0.d 1.c 3.a) × (a.3 c.1 d.0) → ((s0), (oS), (sS)) × ((sS), (s0), (oS))
(1.c 3.a 0.d) × (d.0 a.3 c.1) → ((oS), (sS), (s0)) × ((oS), (sS), (s0))
(1.c 0.d 3.a) × (a.3 d.0 c.1) → ((oS), (s0), (sS)) × ((sS), (oS), (s0))

(3.a 1.c 0.d) × (d.0 c.1 a.3) → ((sS), (oS), (s0)) × ((oS, (s0), (sS))
(3.a 0.d 1.c) × (c.1 d.0 a.3) → ((sS), (s0), (oS)) × ((s0), (oS), (sS))

3.4. Tetradic semiotic-logical partial relations

((sS), (o0), (oS), (s0)); ((o0), (sS), (oS), (s0)); ((o0), (oS), (sS), (s0)); ((oS), (o0), (sS), (s0)); ((sS), (oS), (o0), (s0)); ((oS), (sS), (o0), (s0)); ((o0), (sS), (s0), (oS)); ((sS), (o0), (s0), (oS)); ((o0), (oS), (s0), (sS)); ((oS), (o0), (s0), (sS)); ((sS), (oS), (s0), (o0)); ((oS), (sS), (s0), (o0)); ((o0), (s0), (sS), (oS)); ((sS), (s0), (o0), (oS)); ((o0), (s0), (oS, (sS)); ((oS), (s0), (o0), (sS)); ((sS), (s0), (oS), (o0)); ((oS), (s0), (sS), (o0)); ((s0), (o0), (sS), (oS)); ((s0), (sS), (o0), (oS)); ((s0), (oS), (o0), (sS)); ((s0), (o0), (oS), (sS)); ((s0), (sS), (oS), (o0)); ((s0), (oS), (sS), (o0)).

Complete listing of the $2 \cdot 24 = 48$ tetradic permutations:

(3.a 2.b 1.c 0.d) × (d.0 c.1 b.2 a.3) →
((sS), (o0), (oS), (s0)) × ((oS), (s0), (o0), (sS))
(2.b 3.a 1.c 0.d) × (d.0 c.1 a.3 b.2) →
((o0), (sS), (oS), (s0)) × ((oS), (s0), (sS), (o0))
(2.b 1.c 3.a 0.d) × (d.0 a.3 c.1 b.2) →
((o0), (oS), (sS), (s0)) × ((oS), (sS), (s0), (o0))
(1.c 2.b 3.a 0.d) × (d.0 a.3 b.2 c.1) →
((oS), (o0), (sS), (s0)) × ((oS), (sS), (o0), (s0))
(3.a 1.c 2.b 0.d) × (d.0 b.2 c.1 a.3) →
((sS), (oS), (o0), (s0)) × ((oS), (o0), (s0), (sS))
(1.c 3.a 2.b 0.d) × (d.0 b.2 a.3 c.1) →
((oS), (sS), (o0), (s0)) × ((oS), (o0), (sS), (s0))
(2.b 3.a 0.d 1.c) × (c.1 d.0 a.3 b.2) →
((o0), (sS), (s0), (oS)) × ((s0), (oS), (sS), (o0))
(3.a 2.b 0.d 1.c) × (c.1 d.0 b.2 a.3) →
((sS), (o0), (s0), (oS)) × ((s0), (oS), (o0), (sS))
(2.b 1.c 0.d 3.a) × (a.3 d.0 c.1 b.2) →
((o0), (oS), (s0), (sS)) × ((sS), (oS), (s0), (o0))
(1.c 2.b 0.d 3.a) × (a.3 d.0 b.2 c.1) →
((oS), (o0), (s0), (sS)) × ((sS), (oS), (o0), (s0))

(3.a 1.c 0.d 2.b) × (b.2 d.0 c.1 a.3) →
((sS), (oS), (s0), (o0)) × ((o0), (oS), (s0), (sS))
(1.c 3.a 0.d 2.b) × (b.2 d.0 a.3 c.1) →
((oS), (sS), (s0), (o0)) × ((o0), (oS), (sS), (s0))

(2.b 0.d 3.a 1.c) × (c.1 a.3 d.0 b.2) →
((o0), (s0), (sS), (oS)) × ((s0), (sS), (oS), (o0))
(3.a 0.d 2.b 1.c) × (c.1 b.2 d.0 a.3) →
((sS), (s0), (o0), (oS)) × ((s0), (o0), (oS), (sS))
(2.b 0.d 1.c 3.a) × (a.3 c.1 d.0 b.2) →
((o0), (s0), (oS), (sS)) × ((sS), (s0), (oS), (o0))
(1.c 0.d 2.b 3.a) × (a.3 b.2 d.0 c.1) →
((oS), (s0), (o0), (sS)) × ((sS), (o0), (oS), (s0))
(3.a 0.d 1.c 2.b) × (b.2 c.1 d.0 a.3) →
((sS), (s0), (oS), (o0)) × ((o0), (s0), (oS), (sS))
(1.c 0.d 3.a 2.b) × (b.2 a.3 d.0 c.1) →
((oS), (s0), (sS), (o0)) × ((o0), (sS), (oS), (s0))
(0.d 2.b 3.a 1.c) × (c.1 a.3 b.2 d.0) →
((s0), (o0), (sS), (oS)) × ((s0), (sS), (o0), (oS))
(0.d 3.a 2.b 1.c) × (c.1 b.2 a.3 d.0) →
((s0), (sS), (o0), (oS)) × ((s0), (o0), (sS), (oS))
(0.d 1.c 2.b 3.a) × (a.3 b.2 c.1 d.0) →
((s0), (oS), (o0), (sS)) × ((sS), (o0), (s0), (oS))
(0.d 2.b 1.c 3.a) × (a.3 c.1 b.2 d.0) →
((s0), (o0), (oS), (sS)) × ((sS), (s0), (o0), (oS))
(0.d 3.a 1.c 2.b) × (b.2 c.1 a.3 d.0) →
((s0), (sS), (oS), (o0)) × ((o0), (s0), (sS), (oS))
(0.d 1.c 3.a 2.b) × (b.2 a.3 c.1 d.0) →
((s0), (oS), (sS), (o0)) × ((o0), (sS), (s0), (oS))

5. However, as Rudolf Kaehr (2008) has shown, a sign relation is not really polycontextural solely by embedding the categorial object into the triadic Peircean sign relation, but the sub-signs constituting the sign relation must be mapped to semiotic contextures. This idea of Kaehr's has, as I have already pointed out elsewhere, a splendid impact for the future development of mathematical semiotics.

In order to map semiotic contextures as inner environments to the sub-signs of a pre-semiotic tetradic sign relation, we will use the following 4-adic polycontextural semiotic 4×4 matrix:

	0	1	2	3
0	$(0.0)_{3,2,1}$	$(0.1)_{1,3}$	$(0.2)_{1,2}$	$(0.3)_{2,3}$

1	$(1.0)_{3,1}$	$(1.1)_{1,3,4}$	$(1.2)_{1,4}$	$(1.3)_{3,4}$
2	$(2.0)_{2,1}$	$(2.1)_{1,4}$	$(2.2)_{1,2,4}$	$(2.3)_{2,4}$
3	$(3.0)_{3,2}$	$(3.1)_{3,4}$	$(3.2)_{2,4}$	$(3.3)_{2,3,4}$

Since the pre-semiotic sign relation is tetradic, but trichotomic, the four sub-signs to the left of the thick black line can only appear in reality thematics and thus change the order of their contextural numbers from morphismic to hetero-morphismic order. Thus, the above matrix is a "porte-manteau" matrix of two matrices.

Günther stated: "Being is the birthplace of Thinking, but Nothing is the homeland of the Will. In the Nothing there is nothing to see as long as we do not decide to enter the Nothing and build there a world according to the laws of negativity. This world God has not yet created, and there is not a world plan for it either, before the Thinking did not describe it in a negative language" (Günther 1937, p. 45). Several decades later, he added: "The transparent clearness of the pure notion, that shines like a sunny midday-light over the real life of the concrete consciousness, has its origin out of the transcendental Night of a Will that has not yet become decision and thus not yet living, translucent reality" (Günther 1980, p. 288). We thus conclude, that the night is the reign of the Will. Since the Will needs a negative language to formulate its vocabulary, the negative languages can only consist of directions of actions. The actions, however, we can formulate precisely on the basis of mathematical pre-semiotics. Together with the inner environments via contextures, we have a real poly-contextural pre-semiotics as a Theory of the Night.

6. Since the action schemata of the 4 monadic semiotic partial relations

(sO), (oS), (oO), (sS)

as well as of the 15 dyadic semiotic partial relations

(sO)	↔	(oS)	(sS)	↔	(sO)	(oO)	↔	(oO)
(sO)	↔	(oO)	(oS)	↔	(oS))	(oO)	↔	(sS)
(sO)	↔	(sS)	(oS)	↔	(oO)	(sS)	↔	(oS)
(oS)	↔	(sO)	(oS)	↔	(sS)	(sS)	↔	(oO)
(oO)	↔	(sO)	(oO)	↔	(oS)	(sS)	↔	(sS)

are trivial, we restrict ourselves in this book to set as a basis the 24 triadic and the 24 tetradic semiotic partial relations for all 15 pre-semiotic sign classes and their reality thematics together with the semiotic contextures from a 4-contextural 4-adic semiotic matrix.

Chapter One: The Peano Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.1_{1,3,4}\ 0.1_{1,3}) \times (1.0_{3,1}\ 1.1_{4,3,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.1_{1,3}) \times \curlywedge \gg (1.0_{3,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Medial action

$(2.1_{1,4})$ $(1.0_{3,1})$
$\curlywedge \gg (1.1_{1,3,4}) \times \curlywedge \gg (1.1_{4,3,1})$
$(0.1_{1,3})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(1.0_{3,1})$
$\curlywedge \gg (1.1_{1,3,4}) \times \curlywedge \gg (1.1_{4,3,1})$
$(0.1_{1,3})$ $(1.3_{4,3})$

$(0.1_{1,3})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(1.0_{3,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.1_{1,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(1.0_{3,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.1_{1,3,4})$ $(1.0_{3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.1_{1,3})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(1.0_{3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.1_{1,3})$ $(1.3_{4,3})$

$(0.1_{1,3})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(1.0_{3,1})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(0.1_{1,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(1.0_{3,1})$

Interpretative action

$(2.1_{1,4})$ $(1.0_{3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.1_{1,3})$ $(1.2_{4,1})$

$(1.1_{1,3,4})$ $(1.0_{3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.1_{1,3})$ $(1.1_{4,3,1})$

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(0.1_{1,3})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(1.0_{3,1})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(0.1_{1,3})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(1.0_{3,1})$

2. Pre-semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.1_{1,3,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 1.1_{4,3,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Medial action

$(2.1_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(0.2_{1,2})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(2.0_{2,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.1_{1,3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.2_{1,2})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(2.0_{2,1})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

Interpretative action

$(2.1_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$

$(0.2_{1,2})$ $(1.2_{4,1})$

$(1.1_{1,3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.2_{1,2})$ $(0.2_{1,2})$

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(0.2_{1,2})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(2.0_{2,1})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(0.2_{1,2})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(2.0_{2,1})$

3. Pre-semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.1_{1,3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 1.1_{4,3,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative Action

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Medial action

$(2.1_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(0.3_{2,3})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.1_{1,3,4})$ × $\curlywedge \gg (1.1_{4,3,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.1_{1,3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$

$(0.3_{2,3})$ $(1.1_{4,3,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.1_{1,3,4})$ $(1.3_{4,3})$

$(1.1_{1,3,4})$ $(1.3_{3,4})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(1.1_{4,3,1})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.1_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(1.2_{4,1})$

$(1.1_{1,3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(1.1_{4,3,1})$

$(2.1_{1,4})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(1.2_{4,1})$

$(0.3_{2,3})$ $(1.1_{4,3,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.1_{1,3,4})$ $(3.0_{3,2})$

$(1.1_{1,3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(1.1_{4,3,1})$

$(0.3_{2,3})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(3.0_{3,2})$

4. Pre-semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$(2.1_{1,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(2.1_{1,4})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2}) \times \curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Medial action

$(2.1_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$

$(0.2_{1,2})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.2_{4,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(2.1_{1,4})$ $(2.0_{2,1})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(2.1_{4,1})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

Interpretative action

$(2.1_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.2_{1,2})$ $(1.2_{4,1})$

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(2.1_{1,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(1.2_{4,1})$

$(0.2_{1,2})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(1.2_{1,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(2.0_{2,1})$

5. Pre-Semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualtitative action

$$(2.1_{1,4}) \quad (2.1_{4,1})$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(1.2_{1,4}) \quad (1.2_{4,1})$$

$$(3.1_{3,4}) \quad (2.1_{4,1})$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(1.2_{1,4}) \quad (1.3_{4,3})$$

$$(1.2_{1,4}) \quad (1.2_{4,1})|$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(2.1_{1,4}) \quad (2.1_{4,1})$$

$$(3.1_{3,4}) \quad (1.2_{4,1})$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(2.1_{1,4}) \quad (1.3_{4,3})$$

$$(1.2_{1,4}) \quad (1.3_{4,3})$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(3.1_{3,4}) \quad (2.1_{4,1})$$

$$(2.1_{1,4}) \quad (1.3_{4,3})$$
$$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$$
$$(3.1_{3,4}) \quad (1.2_{4,1})$$

Medial action

$$(2.1_{1,4}) \quad (3.0_{3,2})$$
$$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$$
$$(0.3_{2,3}) \quad (1.2_{4,1})$$

$$(3.1_{3,4}) \quad (3.0_{3,2})$$
$$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$$
$$(0.3_{2,3}) \quad (1.3_{4,3})$$

$$(0.3_{2,3}) \quad (1.2_{4,1})$$
$$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$$
$$(2.1_{1,4}) \quad (3.0_{3,2})$$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ $\curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge 2.1_{4,1})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.3_{2,3})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.1_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$

$(0.3_{2,3})$ $(1.2_{4,1})$

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(2.1_{4,1})$

$(2.1_{1,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(1.2_{4,1})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(1.2_{1,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(3.0_{3,2})$

6. Pre-semiotic dual system
$(3.1_{3,4}\ 2.1_{1,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$(2.1_{1,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.1_{1,4})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Medial action

$(2.1_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(1.2_{4,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.2_{4,1})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.1_{1,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.1_{1,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.1_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(1.2_{4,1})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4})$ × $\curlywedge \gg (1.2_{4,1})$

$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.1_{1,4}) \times \curlywedge \gg (1.2_{4,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.1_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(1.2_{4,1})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.1_{1,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(1.2_{4,1})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(1.3_{3,4})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(1.2_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.1_{1,4})$ $(3.0_{3,2})$

7. Pre-semiotic dual system
$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Medial action

$(2.2_{1,2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$

$(0.2_{1,2})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
(2.2_{1}) $(2.0_{2,1})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.2_{1,2})$ $(1.3_{4,3})$

$(0.2_{1,2})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(2.0_{2,1})$

Interpretative action

$(2.2_{1,2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.2_{1,2})$ $(2.2_{4,2,1})$

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(0.2_{1,2})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.2_{1,2,4})$ $(2.0_{2,1})$

8. Pre-semiotic dual system
$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Medial action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(2.1_{4,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(1.3_{4,3})$

$(1.2_{1,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.1_{3,4}) \times \curlywedge \gg (1.3_{4,3})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

9. Pre-semiotic dual system
$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.3_{4,3}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$(2.2_{1,2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Medial action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(2.2_{1,2,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.2_{1,2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$

$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.2_{1,2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(2.2_{4,2,1})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(1.3_{3,4})$ $(2.2_{1,2,4})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.2_{4,2,1})$ $(0.3_{2,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

10. Pre-semiotic dual system
$(3.1_{3,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 1.3_{4,3})$

Qualitative action

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.1_{3,4})$ $(3.2_{4,2})$

Medial action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$

$(0.3_{2,3})$ $(3.2_{4,2})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(3.0_{3,2})$

$(2.3_{2,4})$ $(1.3_{4,3})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.1_{3,4})$ $(3.2_{4,2})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.1_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(0.3_{2,3})$ $(1.3_{4,3})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.1_{3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(1.3_{4,3})$

$(1.3_{3,4})$ $(1.3_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.1_{3,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(1.3_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.1_{3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(3.2_{4,2})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(1.3_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.3_{2,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(3.2_{4,2})$
$\curlywedge \gg (3.1_{3,4})$ × $\curlywedge \gg (1.3_{4,3})$
$(2.3_{2,4})$ $(3.0_{3,2})$

11. Pre-semiotic dual system
$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(3.2_{2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(1.2_{1,4})$ $(2.3_{4,2})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(2.2_{1,2,4})$ $(2.3_{4,2})$

$(1.2_{1,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.2_{2,4})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.2_{1,2})$ × $\curlywedge \gg (2.0_{2,1})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Medial action

$(3.2_{2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(0.2_{1,2})$ $(2.3_{4,2})$

$(3.2_{2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(0.2_{1,2})$ $(2.3_{4,2})$

$(0.2_{1,2})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(2.0_{2,1})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(2.3_{4,2})$

$(0.2_{1,2})$ $(2.3_{4,2})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.2_{2,4})$ $(2.0_{2,1})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (1.2_{1,4})$ × $\curlywedge \gg (2.1_{4,1})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(3.2_{2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.2_{1,2})$ $(2.3_{4,2})$

$(0.2_{1,2})$ $(2.1_{1,4})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(3.2_{2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(2.3_{4,2})$

$(1.2_{1,4})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(2.0_{2,1})$

Interpretative action

$(2.2_{1,2,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$

$(0.2_{1,2})$ $(2.2_{4,2,1})$

$(1.2_{1,4})$ $(2.0_{2,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(0.2_{1,2})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(0.2_{1,2})$ $(2.1_{4,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(1.2_{1,4})$ $(2.0_{2,1})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(0.2_{1,2})$ $(2.2_{1,2,4})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(2.0_{2,1})$

12. Pre-semiotic dual system
$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(3.2_{2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.2_{1,4})$ $(2.3_{4,2})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(2.2_{1,2,4})$

$(1.2_{1,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Medial action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(2.2_{1,2,4})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(3.2_{2,4})$ $(3.0_{3,2})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (1.2_{1,4}) \times \curlywedge \gg (2.1_{4,1})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$

$(0.3_{2,3})$ $(2.1_{4,1})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$
$(1.2_{1,4})$ $(2.3_{4,2})$

$(1.2_{1,4})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4}) \times \curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(3.0_{3,2})$

Interpretative action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(1.2_{1,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(0.3_{2,3})$ $(2.1_{4,1})$

$(2.2_{1,2,4})$ $(2.1_{4,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(0.3_{2,3})$ $(2.1_{4,1})$
$\curlywedge \gg (3.2_{2,4}) \times \curlywedge \gg (2.3_{4,2})$
$(1.2_{1,4})$ $(3.0_{3,2})$

$(1.2_{1,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(2.1_{4,1})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

13. Pre-semiotic dual system
$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$(2.2_{1,2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(2.2_{4,2,1})$

$(3.2_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(3.1_{4,3})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.2_{1,2,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(3.1_{4,3})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Medial action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.2_{1,2,4})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.2_{2,4})$ $(3.0_{3,2})$

$(2.2_{1,2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.2_{2,4})$ $(2.2_{4,2,1})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(1.3_{3,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (2.2_{1,2,4})$ × $\curlywedge \gg (2.2_{4,2,1})$
$(3.2_{2,4})$ $(3.0_{3,2})$

Interpretative action

$(2.2_{1,2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(0.3_{2,3})$ $(2.2_{4,2,1})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.2_{1,2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(1.3_{3,4})$ $(2.2_{4,2,1})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(1.3_{3,4})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(2.2_{4,2,1})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.2_{1,2,4})$ $(3.0_{3,2})$

14. Pre-semiotic dual system
$(3.2_{2,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 2.3_{4,2})$

Qualitative action

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(3.2_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(3.1_{4,3})$

$(3.2_{2,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(3.2_{4,2})$

Medial action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(3.2_{4,2})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.2_{2,4})$ $(3.0_{3,2})$

$(2.3_{2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (1.3_{3,4})$ × $\curlywedge \gg (3.1_{4,3})$
$(3.2_{2,4})$ $(3.2_{4,2})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.2_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(0.3_{2,3})$ $(2.3_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.2_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.3_{4,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.2_{2,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(2.3_{4,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.2_{2,4})$ $(3.0_{3,2})$

Interpretative action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$

$(0.3_{2,3})$ $(3.2_{4,2})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(1.3_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.3_{2,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(3.2_{4,2})$
$\curlywedge \gg (3.2_{2,4})$ × $\curlywedge \gg (2.3_{4,2})$
$(2.3_{2,4})$ $(3.0_{3,2})$

15. Pre-semiotic dual system
$(3.3_{2,3,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 3.3_{4,3,2})$

Qualitative action

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(3.3_{2,3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(1.3_{3,4})$ $(3.3_{4,3,2})$

$(1.3_{3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3})$ × $\curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(3.1_{4,3})$

$(3.2_{2,4})$ $(3.2_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(2.3_{2,4})$ $(2.3_{4,2})$

$(1.3_{3,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(2.3_{4,2})$
$\curlywedge \gg (0.3_{2,3}) \times \curlywedge \gg (3.0_{3,2})$
$(3.2_{2,4})$ $(3.2_{4,2})$

Medial action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(3.2_{4,2})$

$(3.3_{2,3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(0.3_{2,3})$ $(3.3_{4,3,2})$

$(0.3_{2,3})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(3.0_{3,2})$

$(3.3_{2,3,4})$ $(3.2_{4,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(2.3_{2,4})$ $(3.3_{4,3,2})$

$(0.3_{2,3})$ $(3.3_{4,3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(3.3_{2,3,4})$ $(3.0_{3,2})$

$(2.3_{2,4})$ $(3.3_{4,3,2})$
$\curlywedge \gg (1.3_{3,4}) \times \curlywedge \gg (3.1_{4,3})$
$(3.3_{2,3,4})$ $(3.2_{4,2})$

Objectal action

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4}) \times \curlywedge \gg (3.2_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$

$(3.3_{2,3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(0.3_{2,3})$ $(3.3_{4,3,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$(3.3_{2,3,4})$ $(3.1_{4,3})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(1.3_{3,4})$ $(3.3_{4,3,2})$

$(1.3_{3,4})$ $(3.3_{4,3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.3_{2,3,4})$ $(3.1_{4,3})$

$(0.3_{2,3})$ $(3.3_{4,3,2})$
$\curlywedge \gg (2.3_{2,4})$ × $\curlywedge \gg (3.2_{4,2})$
$(3.3_{2,3,4})$ $(3.0_{3,2})$

Interpretative action

$(2.3_{2,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.3_{2,3,4})$ × $\curlywedge \gg (3.3_{4,3,2})$
$(0.3_{2,3})$ $(3.2_{4,2})$

$(1.3_{3,4})$ $(3.0_{3,2})$
$\curlywedge \gg (3.3_{2,3,4})$ × $\curlywedge \gg (3.3_{4,3,2})$
$(0.3_{2,3})$ $(3.1_{4,3})$

$(2.3_{2,4})$ $(3.1_{4,3})$
$\curlywedge \gg (3.3_{2,3,4})$ × $\curlywedge \gg (3.3_{4,3,2})$
$(1.3_{3,4})$ $(3.2_{4,2})$

$(0.3_{2,3})$ $(3.1_{4,3})$
$\curlywedge \gg (3.3_{2,3,4})$ × $\curlywedge \gg (3.3_{4,3,2})$
$(1.3_{3,4})$ $(3.0_{3,2})$

$$\begin{matrix}(1.3_{3,4}) \\ \curlywedge \gg (3.3_{2,3,4}) \\ (2.3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(3.2_{4,2}) \\ \curlywedge \gg (3.3_{4,3,2}) \\ (3.1_{4,3})\end{matrix}$$

$$\begin{matrix}(0.3_{2,3}) \\ \curlywedge \gg (3.3_{2,3,4}) \\ (2.3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(3.2_{4,2}) \\ \curlywedge \gg (3.3_{4,3,2}) \\ (3.0_{3,2})\end{matrix}$$

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(3.1 2.1 1.1 0.1) × (1.0 1.1 1.2 1.3)

Qualitative action

$$\begin{matrix}(1.1_{1,3,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.1_{4,3,1}) \\ (1.3_{4,3})\end{matrix}$$

$$\begin{matrix}(1.1_{1,4,3}) \gg \curlyvee \succ (0.1_{1,3}) \\ (3.1_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.1_{4,3,1}) \\ (1.2_{4,1})\end{matrix}$$

$$\begin{matrix}(2.1_{1,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (1.1_{1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.2_{4,1}) \\ (1.3_{4,3})\end{matrix}$$

$$\begin{matrix}(2.1_{1,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (3.1_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.2_{4,1}) \\ (1.1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(3.1_{3,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.3_{4,3}) \\ (1.1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(3.1_{3,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (1.1_{1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.2_{4,1}) \\ (1.3_{4,3})\end{matrix}$$

$$\begin{matrix}(3.1_{3,4}) \gg \curlyvee \succ (0.1_{1,3}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.0_{3,1}) \gg \curlyvee \succ (1.3_{4,3}) \\ (1.2_{4,1})\end{matrix}$$

Medial action

$$(0.1_{1,3}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(1.1_{1,3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.2_{4,1})\\(1.0_{3,1})\\(1.3_{4,3})\end{matrix}$$

$$(0.1_{1,3}) \gg \curlyvee \succ \begin{matrix}(2.1_{1,4})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.0_{3,1})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \succ \begin{matrix}(0.1_{1,3})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.0_{3,1})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(1.1_{1,3,4})\\(0.1_{1,3})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.0_{3,1})\\(1.2_{4,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.1_{1,3})\\(1.1_{1,3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.2_{4,1})\\(1.0_{3,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.1_{1,4})\\(1.1_{1,3,4})\\(0.1_{1,3})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.0_{3,1})\\(1.2_{4,1})\\(1.3_{4,3})\end{matrix}$$

Objectal action

$$(0.1_{1,3}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(2.1_{1,4})\\(1.1_{1,3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1.1_{4,3,1})\\(1.0_{3,1})\\(1.3_{4,3})\end{matrix}$$

$$(0.1_{1,3}) \gg \curlyvee \succ \begin{matrix}(1.1_{1,3,4})\\(2.1_{1,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.0_{3,1})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(0.1_{1,3})\\(2.1_{1,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.0_{3,1})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.1_{1,4})\\(0.1_{1,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.0_{3,1})\\(1.1_{4,3,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.1_{1,3})\\(2.1_{1,4})\\(1.1_{1,3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(1.3_{4,3})\\(1.0_{3,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(2.1_{1,4})\\(0.1_{1,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.0_{3,1})\\(1.3_{4,3})\\(1.1_{4,3,1})\end{matrix}$$

Interpretative action

$$(0.1_{1,3}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(3.1_{3,4})\\(1.1_{1,3,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(1.0_{3,1})\\(1.2_{4,1})\end{matrix}$$

$$(0.1_{1,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(3.1_{3,4})\\(2.1_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(1.0_{3,1})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(0.1_{1,3})\\(3.1_{3,4})\\(2.1_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(1.1_{4,3,1})\\(1.0_{3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(3.1_{3,4})\\(0.1_{1,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.0_{3,1})\\(1.1_{4,3,1})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \succ \begin{matrix}(0.1_{1,3})\\(3.1_{3,4})\\(1.1_{1,3,4})\end{matrix} \times (1.3_{4,3}) \; \Upsilon \; \succ (1.2_{4,1}) \begin{matrix}(1.1_{4,3,1})\\(1.0_{3,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(3.1_{3,4})\\(0.1_{1,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.0_{3,1})\\(1.1_{4,3,1})\\(1.2_{4,1})\end{matrix}$$

2. Pre-semiotic dual system

$(3.1_{3,4}\ 2.1_{1,4}\ 1.1_{1,3,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 1.1_{4,3,1}\ 1.2_{1,4}\ 1.3_{4,3})$

Qualitative action

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(0.2_{1,2})\\(2.1_{1,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(1.1_{4,3,1})\\(1.3_{4,3})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(0.2_{1,2})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(1.1_{4,3,1})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(0.2_{1,2})\\(1.1_{1,3,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(1.2_{4,1})\\(1.3_{4,3})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(0.2_{1,2})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(1.2_{4,1})\\(1.1_{4,3,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(0.2_{1,2})\\(2.1_{1,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(1.3_{4,3})\\(1.1_{4,3,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(0.2_{1,2})\\(1.1_{1,3,4})\end{matrix} \quad \times \quad (2.0_{2,1}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(1.3_{4,3})\\(1.2_{4,1})\end{matrix}$$

Medial action

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(1.1_{1,3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(2.0_{2,1})\\(1.3_{4,3})\end{matrix}$$

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.0_{2,1})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(1.2_{4,1})\\(2.0_{2,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.1_{1,3,4})\\ (0.2_{1,2})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (1.2_{1,4})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (1.1_{1,3,4})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (1.3_{4,3})\\ (2.0_{2,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (1.1_{1,3,4})\\ (0.2_{1,2})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (1.3_{4,3})\\ (1.2_{4,1})\end{matrix}$$

Objectal action

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (2.1_{1,4})\\ (1.1_{1,3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(1.1_{4,3,1})\\ \succ (2.0_{2,1})\\ (1.3_{4,3})\end{matrix}$$

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(1.1_{1,3,4})\\ \succ (2.1_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.0_{2,1})\\ (1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (2.1_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (1.1_{4,3,1})\\ (2.0_{2,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (2.1_{1,4})\\ (0.2_{1,2})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (1.1_{4,3,1})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (2.1_{1,4})\\ (1.1_{1,3,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(1.1_{4,3,1})\\ \succ (1.3_{4,3})\\ (2.0_{2,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.1_{1,3,4})\\ \succ (2.1_{1,4})\\ (0.2_{1,2})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (1.3_{4,3})\\ (1.1_{4,3,1})\end{matrix}$$

Interpretative action

$$(2.1_{1,4}) \qquad (1.1_{4,3,1})$$

$$(0.2_{1,2}) \gg \curlyvee \succ (3.1_{3,4}) \quad \times \quad (1.3_{4,3}) \gg \curlyvee \succ (2.0_{2,1})$$
$$(1.1_{1,3,4}) \qquad\qquad (1.2_{4,1})$$

$$\begin{matrix}(1.1_{1,3,4}) \\ (0.2_{1,2}) \gg \curlyvee \succ (3.1_{3,4}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.2_{4,1}) \\ (1.3_{4,3}) \gg \curlyvee \succ (2.0_{2,1}) \\ (1.1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(0.2_{1,2}) \\ (1.1_{1,3,4}) \gg \curlyvee \succ (3.1_{3,4}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.2_{4,1}) \\ (1.3_{4,3}) \gg \curlyvee \succ (1.1_{4,3,1}) \\ (2.0_{2,1})\end{matrix}$$

$$\begin{matrix}(2.1_{1,4}) \\ (1.1_{1,3,4}) \gg \curlyvee \succ (3.1_{3,4}) \\ (0.2_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(2.0_{2,1}) \\ (1.3_{4,3}) \gg \curlyvee \succ (1.1_{4,3,1}) \\ (1.2_{4,1})\end{matrix}$$

$$\begin{matrix}(0.2_{1,2}) \\ (2.1_{1,4}) \gg \curlyvee \succ (3.1_{3,4}) \\ (1.1_{1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.1_{4,3,1}) \\ (1.3_{4,3}) \gg \curlyvee \succ (1.2_{4,1}) \\ (2.0_{2,1})\end{matrix}$$

$$\begin{matrix}(1.1_{1,3,4}) \\ (2.1_{1,4}) \gg \curlyvee \succ (3.1_{3,4}) \\ (0.2_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(2.0_{2,1}) \\ (1.3_{4,3}) \gg \curlyvee \succ (1.2_{4,1}) \\ (1.1_{4,3,1})\end{matrix}$$

3. Pre-semiotic dual system

$(3.1_{3,4}\ 2.1_{1,4}\ 1.1_{1,3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 1.1_{4,3,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$$\begin{matrix}(3.1_{3,4}) \\ (1.1_{1,3,4}) \gg \curlyvee \succ (0.3_{2,3}) \\ (2.1_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(1.2_{4,1}) \\ (3.0_{3,2}) \gg \curlyvee \succ (1.1_{4,3,1}) \\ (1.3_{4,3})\end{matrix}$$

$$\begin{matrix}(2.1_{1,4}) \\ (1.1_{1,3,4}) \gg \curlyvee \succ (0.3_{2,3}) \\ (3.1_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.3_{4,3}) \\ (3.0_{3,2}) \quad \curlyvee \quad \succ (1.1_{4,3,1}) \\ (1.2_{4,1})\end{matrix}$$

$$\begin{matrix}(3.1_{3,4}) \\ (2.1_{1,4}) \gg \curlyvee \succ (0.3_{2,3}) \\ (1.1_{1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(1.1_{4,3,1}) \\ (3.0_{3,2}) \gg \curlyvee \succ (1.2_{4,1}) \\ (1.3_{4,3})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \succ \begin{matrix}(1.1_{1,3,4})\\(0.3_{2,3})\\(3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.2_{4,1})\\(1.1_{4,3,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(1.1_{1,3,4})\\(0.3_{2,3})\\(2.1_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(1.2_{4,1})\\(1.3_{4,3})\\(1.1_{4,3,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.1_{1,4})\\(0.3_{2,3})\\(1.1_{1,3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(1.1_{4,3,1})\\(1.3_{4,3})\\(1.2_{4,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(1.1_{1,3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.2_{4,1})\\(3.0_{3,2})\\(1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(2.1_{1,4})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(3.0_{3,2})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(1.1_{1,3,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(1.2_{4,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(1.1_{1,3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(1.2_{4,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(1.1_{1,3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1.2_{4,1})\\(1.3_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.1_{1,4})\\(1.1_{1,3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (1.1_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(1.2_{4,1})\\(1.3_{4,3})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(2.1_{1,4})\end{matrix} \quad \times \quad (1.2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1.1_{4,3,1})\\(3.0_{3,2})\end{matrix}$$

$$(1.1_{1,3,4}) \qquad (1.3_{4,3})$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(2.1_{1,4})\\(3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.0_{3,2})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(2.1_{1,4})\\(3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(1.1_{4,3,1})\\(3.0_{3,2})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.1_{1,4})\\(0.3_{2,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.1_{4,3,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(2.1_{1,4})\\(1.1_{1,3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(1.3_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(2.1_{1,4})\\(0.3_{2,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.3_{4,3})\\(1.1_{4,3,1})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(3.1_{3,4})\\(1.1_{1,3,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(3.0_{3,2})\\(1.2_{4,1})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{1,3,4})\\(3.1_{3,4})\\(2.1_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.2_{4,1})\\(3.0_{3,2})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(3.1_{3,4})\\(2.1_{1,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.0_{3,2})\\(1.1_{4,3,1})\end{matrix}$$

$$(1.1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(2.1_{1,4})\\(3.1_{3,4})\\(0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.1_{4,3,1})\\(3.0_{3,2})\\(1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix} (0.3_{2,3}) \\ \succ (3.1_{3,4}) \\ (1.1_{1,3,4}) \end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix} (1.1_{4,3,1}) \\ \succ (1.2_{4,1}) \\ (3.0_{3,2}) \end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix} (1.1_{1,3,4}) \\ \succ (3.1_{3,4}) \\ (0.3_{2,3}) \end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix} (3.0_{3,2}) \\ \succ (1.2_{4,1}) \\ (1.1_{4,3,1}) \end{matrix}$$

4. Pre-semiotic system

$(3.1_{3,4}\ 2.1_{1,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix} (3.1_{3,4}) \\ \succ (0.2_{1,2}) \\ (2.1_{1,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (1.2_{4,1}) \\ \succ (2.1_{4,1}) \\ (1.3_{4,3}) \end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix} (2.1_{1,4}) \\ \succ (0.2_{1,2}) \\ (3.1_{3,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (1.3_{4,3}) \\ \succ (2.1_{4,1}) \\ (1.2_{4,1}) \end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix} (3.1_{3,4}) \\ \succ (0.2_{1,2}) \\ (1.2_{1,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (2.1_{4,1}) \\ \succ (1.2_{4,1}) \\ (1.3_{4,3}) \end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix} (1.2_{1,4}) \\ \succ (0.2_{1,2}) \\ (3.1_{3,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (1.3_{3,4}) \\ \succ (1.2_{4,1}) \\ (2.1_{4,1}) \end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix} (1.2_{1,4}) \\ \succ (0.2_{1,2}) \\ (2.1_{1,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (1.2_{4,1}) \\ \succ (1.3_{4,3}) \\ (2.1_{4,1}) \end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix} (2.1_{1,4}) \\ \succ (0.2_{1,2}) \\ (1.2_{1,4}) \end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix} (2.1_{4,1}) \\ \succ (1.3_{4,3}) \\ (1.2_{4,1}) \end{matrix}$$

Medial action

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix} (3.1_{3,4}) \\ \succ (1.2_{1,4}) \end{matrix} \times (2.1_{4,1}) \gg \curlyvee \begin{matrix} (1.2_{4,1}) \\ \succ (2.0_{2,1}) \end{matrix}$$

$$(2.1_{1,4}) \qquad\qquad (1.3_{4,3})$$

$$(0.2_{1,2}) \gg \Upsilon \begin{matrix}(2.1_{1,4}) \\ \succ (1.2_{1,4}) \\ (3.1_{3,4})\end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3}) \\ \succ (2.0_{2,1}) \\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix}(0.2_{1,2}) \\ \succ (1.2_{1,4}) \\ (3.1_{3,4})\end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3}) \\ \succ (1.2_{4,1}) \\ (2.0_{2,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4}) \\ \succ (1.2_{1,4}) \\ (0.2_{1,2})\end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix}(2.0_{2,1}) \\ \succ (1.2_{4,1}) \\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(0.2_{1,2}) \\ \succ (1.2_{1,4}) \\ (2.1_{1,4})\end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix}(1.2_{4,1}) \\ \succ (1.3_{4,3}) \\ (2.0_{2,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(2.1_{1,4}) \\ \succ (1.2_{1,4}) \\ (0.2_{1,2})\end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix}(2.0_{2,1}) \\ \succ (1.3_{4,3}) \\ (1.2_{4,1})\end{matrix}$$

Objectal action

$$(0.2_{1,2}) \gg \Upsilon \begin{matrix}(3.1_{3,4}) \\ \succ (2.1_{1,4}) \\ (1.2_{1,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(2.1_{4,1}) \\ \succ (2.0_{2,1}) \\ (1.3_{4,3})\end{matrix}$$

$$(0.2_{1,2}) \gg \Upsilon \begin{matrix}(1.2_{1,4}) \\ \succ (2.1_{1,4}) \\ (3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3}) \\ \succ (2.0_{2,1}) \\ (2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix}(0.2_{1,2}) \\ \succ (2.1_{1,4}) \\ (3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3}) \\ \succ (2.1_{4,1}) \\ (2.0_{2,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4}) \\ \succ (2.1_{1,4}) \\ (0.2_{1,2})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(2.0_{2,1}) \\ \succ (2.1_{4,1}) \\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4} \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (2.1_{1,4})\\ (1.2_{1,4})\end{matrix}) \times (1.2_{4,1} \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.3_{4,3})\\ (2.0_{2,1})\end{matrix})$$

$$(3.1_{3,4} \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (2.1_{1,4})\\ (0.2_{1,2})\end{matrix}) \times (1.2_{4,1} \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (1.3_{4,3})\\ (2.1_{4,1})\end{matrix})$$

Interpretative action

$$(0.2_{1,2} \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (3.1_{3,4})\\ (1.2_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.0_{2,1})\\ (1.2_{4,1})\end{matrix})$$

$$(0.2_{1,2} \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (2.0_{2,1})\\ (2.1_{4,1})\end{matrix})$$

$$(1.2_{1,4} \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (2.1_{4,1})\\ (2.0_{2,1})\end{matrix})$$

$$(1.2_{1,4} \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (3.1_{3,4})\\ (0.2_{1,2})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (2.1_{4,1})\\ (1.2_{4,1})\end{matrix})$$

$$(2.1_{1,4} \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (3.1_{3,4})\\ (1.2_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.2_{4,1})\\ (2.0_{2,1})\end{matrix})$$

$$(2.1_{1,4} \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (3.1_{3,4})\\ (0.2_{1,2})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.2_{4,1})\\ (2.0_{2,1})\end{matrix})$$

5. Pre-semiotic dual system

$(3.1_{3,4}\ 2.1_{1,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 1.2_{4,1}\ 1.3_{3,4})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (2.1_{4,1})\\ (1.3_{4,3})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.1_{4,1})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.2_{4,1})\\ (1.3_{3,4})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (1.2_{4,1})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.3_{2,3})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (1.3_{4,3})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (0.3_{2,3})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.3_{4,3})\\ (1.2_{4,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.2_{1,4})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (3.0_{3,2})\\ (1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (1.2_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (1.2_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (1.2_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix} (3.1_{3,4}) \\ \succ (1.2_{1,4}) \\ (0.3_{2,3}) \end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix} (3.0_{3,2}) \\ \succ (1.2_{4,1}) \\ (1.3_{4}) \end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix} (0.3_{2,3}) \\ \succ (1.2_{1,4}) \\ (2.1_{1,4}) \end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix} (1.2_{4,1}) \\ \succ (1.3_{4,3}) \\ (3.0_{3,2}) \end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix} (2.1_{1,4}) \\ \succ (1.2_{1,4}) \\ (0.3_{2,3}) \end{matrix} \times (2.1_{4,1}) \gg \Upsilon \begin{matrix} (3.0_{3,2}) \\ \succ (1.3_{4,3}) \\ (1.2_{4,1}) \end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix} (3.1_{3,4}) \\ \succ (2.1_{1,4}) \\ (1.2_{1,4}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (2.1_{4,1}) \\ \succ (3.0_{3,2}) \\ (1.3_{4,3}) \end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix} (1.2_{1,4}) \\ \succ (2.1_{1,4}) \\ (3.1_{3,4}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (1.3_{4,3}) \\ \succ (3.0_{3,2}) \\ (2.1_{4,1}) \end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix} (0.3_{2,3}) \\ \succ (2.1_{1,4}) \\ (3.1_{3,4}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (1.3_{4,3}) \\ \succ (2.1_{4,1}) \\ (3.0_{3,2}) \end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix} (3.1_{3,4}) \\ \succ (2.1_{1,4}) \\ (0.3_{2,3}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (3.0_{3,2}) \\ \succ (2.1_{4,1}) \\ (1.3_{4,3}) \end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix} (0.3_{2,3}) \\ \succ (2.1_{1,4}) \\ (1.2_{1,4}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (2.1_{4,1}) \\ \succ (1.2_{4,1}) \\ (3.0_{3,2}) \end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix} (1.2_{1,4}) \\ \succ (2.1_{1,4}) \\ (0.3_{2,3}) \end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix} (3.0_{3,2}) \\ \succ (1.3_{4,3}) \\ (2.1_{4,1}) \end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix} (2.1_{1,4}) \\ \succ (3.1_{3,4}) \end{matrix} \times (1.3_{3,4}) \gg \Upsilon \begin{matrix} (2.1_{4,1}) \\ \succ (3.0_{3,2}) \end{matrix}$$

$$(1.2_{1,4}) \qquad\qquad (1.2_{4,1})$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(1.2_{1,4})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(1.2_{4,1})\\ \succ (3.0_{3,2})\\ (2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(1.2_{4,1})\\ \succ (2.1_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \begin{matrix}(2.1_{1,4})\\ \succ (3.1_{3,4})\\ (0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (2.1_{4,1})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (3.1_{3,4})\\ (1.2_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(2.1_{4,1})\\ \succ (1.2_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix}(1.2_{1,4})\\ \succ (3.1_{3,4})\\ (0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (1.2_{4,1})\\ (2.1_{4,1})\end{matrix}$$

6. Pre-semiotic dual system

$(3.1_{3,4}\ 2.1_{1,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 1.2_{4,1}\ 1.3_{4,3})$

Qualitative action

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (2.1_{1,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \begin{matrix}(1.2_{4,1})\\ \succ (3.1_{4,3})\\ (1.3_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(2.1_{1,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \begin{matrix}(1.3_{3,4})\\ \succ (3.1_{4,3})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \begin{matrix}(3.1_{4,3})\\ \succ (1.2_{4,1})\\ (1.3_{4,3})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (1.2_{4,1})\\ (3.1_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (0.3_{2,3})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (1.3_{4,3})\\ (3.1_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (0.3_{2,3})\\ (1.3_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (1.3_{4,3})\\ (1.2_{4,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.3_{3,4})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (3.0_{3,2})\\ (1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (1.3_{3,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (1.3_{3,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (1.2_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.3_{3,4})\\ (0.3_{2,3})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (1.2_{4,1})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (1.3_{3,4})\\ (2.1_{1,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(1.2_{4,1})\\ \succ (1.3_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.1_{1,4})\\ \succ (1.3_{3,4})\\ (0.3_{2,3})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (1.3_{4,3})\\ (1.2_{4,1})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (2.1_{1,4})\end{matrix} \quad \times \quad (1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \qquad\qquad (1.3_{4,3})$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(1.3_{3,4})\\ \succ (2.1_{1,4})\\ (3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (2.1_{1,4})\\ (3.1_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.1_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (2.1_{1,4})\\ (0.3_{2,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (3.1_{4,3})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (2.1_{1,4})\\ (1.3_{3,4})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(3.1_{4,3})\\ \succ (1.3_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(1.3_{3,4})\\ \succ (2.1_{1,4})\\ (0.3_{2,3})\end{matrix} \times (1.2_{4,1}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (1.3_{3,4})\\ (3.1_{3,4})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(2.1_{1,4})\\ \succ (3.1_{3,4})\\ (1.3_{3,4})\end{matrix} \times (1.3_{3,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (3.0_{3,2})\\ (1.2_{4,1})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(1.3_{3,4})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix} \times (1.3_{3,4}) \gg \Upsilon \begin{matrix}(1.2_{4,1})\\ \succ (3.0_{3,2})\\ (3.1_{3,4})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (3.1_{3,4})\\ (2.1_{1,4})\end{matrix} \times (1.3_{3,4}) \gg \Upsilon \begin{matrix}(1.2_{4,1})\\ \succ (3.1_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(2.1_{1,4})\\ \succ (3.1_{3,4})\\ (0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (3.1_{4,3})\\ (1.2_{4,1})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (3.1_{3,4})\\ (1.3_{3,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (1.2_{1,4})\\ (3.0_{3,2})\end{matrix}$$

$$(2.1_{1,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (3.1_{3,4})\\ (0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (1.2_{4,1})\\ (3.1_{4,3})\end{matrix}$$

7. Pre-semiotic dual system

$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.2_{1,2})\\ (2.2_{1,2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.1_{4,1})\\ (1.3_{4,3})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.2_{1,2})\\ (3.1_{3,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.1_{4,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.2_{1,2})\\ (1.2_{1,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.2_{4,2,1})\\ (1.3_{4,3})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.2_{1,2})\\ (3.1_{3,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.2_{4,2,1})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.2_{1,2})\\ (2.2_{1,2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (1.3_{4,3})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.2_{1,2})\\ (1.2_{1,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.3_{4,3})\\ (2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.2_{1,4})\end{matrix} \times (2.1_{4,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.0_{2,1})\end{matrix}$$

$$(2.2_{1,2,4})$$

$$(1.3_{4,3})$$

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.0_{2,1})\\(2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(1.2_{1,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.2_{4,2,1})\\(2.0_{2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(1.2_{1,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.2_{4,2,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(1.2_{1,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(1.3_{4,3})\\(2.0_{2,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(1.3_{4,3})\\(2.2_{4,2,1})\end{matrix}$$

Objectal action

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\\(1.2_{1,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.0_{2,1})\\(1.3_{4,3})\end{matrix}$$

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.0_{2,1})\\(2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.1_{4,1})\\(2.0_{2,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.1_{4,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4} \gg \curlyvee \succ \begin{matrix}(0.2_{1,2})\\(2.2_{1,2,4})\\(1.2_{1,4})\end{matrix}) \times (2.2_{4,2,1} \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\(1.3_{4,3})\\(2.0_{2,1})\end{matrix})$$

$$(3.1_{3,4} \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(0.2_{1,2})\end{matrix}) \times (2.2_{4,2,1} \gg \curlyvee \succ \begin{matrix}(2.0_{2,1})\\(1.3_{4,3})\\(2.1_{4,1})\end{matrix})$$

Interpretative action

$$(0.2_{1,2} \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(3.1_{3,4})\\(1.2_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\(2.0_{2,1})\\(2.2_{4,2,1})\end{matrix})$$

$$(0.2_{1,2} \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(2.0_{2,1})\\(2.1_{4,1})\end{matrix})$$

$$(1.2_{1,4} \gg \curlyvee \succ \begin{matrix}(0.2_{1,2})\\(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(2.1_{4,1})\\(2.0_{2,1})\end{matrix})$$

$$(1.2_{1,4} \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(3.1_{3,4})\\(0.2_{1,2})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.0_{2,1})\\(2.1_{4,1})\\(2.2_{4,2,1})\end{matrix})$$

$$(2.2_{1,2,4} \gg \curlyvee \succ \begin{matrix}(0.2_{1,2})\\(3.1_{3,4})\\(1.2_{1,4})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\(2.2_{4,2,1})\\(2.0_{2,1})\end{matrix})$$

$$(2.2_{1,2,4} \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\(3.1_{3,4})\\(0.2_{1,2})\end{matrix}) \times (1.3_{4,3} \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\(2.2_{4,2,1})\\(2.0_{2,1})\end{matrix})$$

8. Pre-semiotic dual system

$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (2.2_{1,2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.1_{4,1})\\ (1.3_{4,3})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.1_{4,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (0.3_{2,3})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.2_{4,2,1})\\ (1.3_{4,3})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.3_{2,3})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.2_{4,2,1})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.3_{2,3})\\ (2.2_{1,2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (1.3_{4,3})\\ (2.1_{4,1})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.3_{2,3})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (1.3_{4,3})\\ (2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (1.2_{1,4})\\ (2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (3.0_{3,2})\\ (1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (1.2_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (1.2_{1,4})\\ (3.1_{3,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (2.2_{4,2,1})\\ (3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(1.2_{1,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(1.2_{1,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(1.3_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.3_{4,3})\\(2.2_{4,2,1})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\\(1.2_{1,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(3.0_{3,2})\\(1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.0_{3,2})\\(2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.1_{4,1})\\(3.0_{3,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.1_{4,1})\\(1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(2.2_{1,2,4})\\(1.2_{1,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(1.3_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.3_{4,3})\\(2.1_{4,1})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} \quad \times \quad (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(3.0_{3,2})\end{matrix}$$

$(1.2_{1,4})$ $(2.2_{4,2,1})$

$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(3.0_{3,2})\\(2.1_{4,1})\end{matrix}$

$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(2.1_{4,1})\\(3.0_{3,2})\end{matrix}$

$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(3.1_{3,4})\\(0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(2.1_{4,1})\\(2.2_{4,2,1})\end{matrix}$

$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(3.1_{3,4})\\(1.2_{1,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$

$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\(3.1_{3,4})\\(0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(2.1_{4,1})\end{matrix}$

9. Pre-semiotic dual system

$(3.1_{3,4}\ 2.2_{1,2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 2.2_{4,2,1}\ 1.3_{4,3})$

Qualitative action

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(0.3_{2,3})\\(2.2_{1,2,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(3.1_{4,3})\\(1.3_{4,3})\end{matrix}$

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\\(3.1_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(1.3_{4,3})\\(3.1_{4,3})\\(2.2_{4,2,1})\end{matrix}$

$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{3,4})\\(2.2_{4,2,1})\\(1.3_{4,3})\end{matrix}$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(3.1_{3,4})\end{matrix} (0.3_{2,3}) \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.1_{4,3})\end{matrix} (2.2_{4,2,1})$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(2.2_{1,2,4})\end{matrix} (0.3_{2,3}) \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(3.1_{4,3})\end{matrix} (1.3_{4,3})$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.3_{3,4})\end{matrix} (0.3_{2,3}) \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(2.2_{4,2,1})\end{matrix} (1.3_{4,3})$$

Medial action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(1.3_{4,3})\end{matrix} (3.0_{3,2})$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(3.1_{3,4})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(2.2_{4,2,1})\end{matrix} (3.0_{3,2})$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(3.1_{3,4})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.0_{3,2})\end{matrix} (2.2_{4,2,1})$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(0.3_{2,3})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.3_{4,3})\end{matrix} (2.2_{4,2,1})$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(2.2_{1,2,4})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix} (1.3_{4,3})$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\end{matrix} (1.3_{3,4}) \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(1.3_{4,3})\end{matrix} (3.1_{4,3})$$

Objective action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \qquad\qquad (1.3_{4,3})$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (2.2_{1,2,4})\\ (3.1_{3,4})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (2.2_{1,2,4})\\ (3.1_{3,4})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \begin{matrix}(1.3_{4,3})\\ \succ (3.1_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(3.1_{3,4})\\ \succ (2.2_{1,2,4})\\ (0.3_{2,3})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (3.1_{4,3})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (2.2_{1,2,4})\\ (1.3_{3,4})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (1.3_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (2.2_{1,2,4})\\ (0.3_{2,3})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (1.3_{4,3})\\ (3.1_{4,3})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (3.1_{3,4})\\ (1.3_{3,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (3.0_{3,2})\\ (2.2_{4,2,1})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (3.1_{3,4})\\ (2.2_{1,2,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (3.0_{3,2})\\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ (3.1_{3,4})\\ (2.2_{1,2,4})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (3.1_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (3.1_{3,4})\\ (0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ (3.1_{4,3})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(3.1_{3,4})\\(1.3_{3,4})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(3.1_{3,4})\\(0.3_{2,3})\end{matrix} \times (1.3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(3.1_{4,3})\end{matrix}$$

10. Pre-semiotic dual system

$(3.1_{3,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 1.3_{4,3})$

Qualitative action

$$(1.3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(0.3_{2,3})\\(2.3_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(3.1_{4,3})\\(1.3_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.3_{2,4})\\(0.3_{2,3})\\(3.1_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.1_{4,3})\\(3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(3.2_{4,2})\\(1.3_{4,3})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(3.1_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(1.3_{4,3})\\(3.2_{4,2})\\(3.1_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(2.3_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(1.3_{4,3})\\(3.1_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(1.3_{4,3})\\(2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.1_{3,4})\\(1.3_{3,4})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \qquad\qquad (1.3_{4,3})$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(2.3_{2,4})\\ \succ (1.3_{3,4})\\ (3.1_{3,4})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (1.3_{3,4})\\ (3.1_{3,4})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.2_{4,2})\\ (3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (1.3_{3,4})\\ (0.3_{2,3})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (3.2_{4,2})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (1.3_{3,4})\\ (2.3_{2,4})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \begin{matrix}(3.2_{4,2})\\ \succ (1.3_{4,3})\\ (3.0_{3,2})\end{matrix}$$

:

$$(3.1_{3,4}) \gg \Upsilon \begin{matrix}(2.3_{2,4})\\ \succ (1.3_{3,4})\\ (0.3_{2,3})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (1.3_{4,3})\\ (3.2_{4,2})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (2.3_{2,4})\\ (1.3_{3,4})\end{matrix} \times (3.2_{4,2}) \gg \Upsilon \begin{matrix}(3.1_{4,3})\\ \succ (3.0_{3,2})\\ (1.3_{4,3})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(1.3_{3,4})\\ \succ (2.3_{2,4})\\ (3.1_{3,4})\end{matrix} \times (3.2_{4,2}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.0_{3,2})\\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3})\\ \succ (2.3_{2,4})\\ (3.1_{3,4})\end{matrix} \times (3.2_{4,2}) \gg \Upsilon \begin{matrix}(1.3_{4,3})\\ \succ (3.1_{4,3})\\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(3.1_{3,4})\\ \succ (2.3_{2,4})\\ (0.3_{2,3})\end{matrix} \times (3.2_{4,2}) \gg \Upsilon \begin{matrix}(3.0_{3,2})\\ \succ (3.1_{4,3})\\ (1.3_{4,3})\end{matrix}$$

$$(3.1_{3,4} \gg \curlyvee \begin{matrix}(0.3_{2,3}) \\ \succ (2.3_{2,4}) \\ (1.3_{3,4})\end{matrix} \quad \times \quad (3.2_{4,2} \gg \curlyvee \begin{matrix}(3.1_{4,3}) \\ \succ (1.3_{4,3}) \\ (3.0_{3,2})\end{matrix}$$

$$(3.1_{3,4} \gg \curlyvee \begin{matrix}(1.3_{3,4}) \\ \succ (2.3_{2,4}) \\ (0.3_{2,3})\end{matrix} \quad \times \quad (3.2_{4,2} \gg \curlyvee \begin{matrix}(3.0_{3,2}) \\ \succ (1.3_{3,4}) \\ (3.1_{4,3})\end{matrix}$$

Interpretative action

$$(0.3_{2,3} \gg \curlyvee \begin{matrix}(2.3_{2,4}) \\ \succ (3.1_{3,4}) \\ (1.3_{3,4})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.1_{4,3}) \\ \succ (3.0_{3,2}) \\ (3.2_{4,2})\end{matrix}$$

$$(0.3_{2,3} \gg \curlyvee \begin{matrix}(1.3_{3,4}) \\ \succ (3.1_{3,4}) \\ (2.3_{2,4})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.2_{4,2}) \\ \succ (3.0_{3,2}) \\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4} \gg \curlyvee \begin{matrix}(0.3_{2,3}) \\ \succ (3.1_{3,4}) \\ (2.3_{2,4})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.2_{4,2}) \\ \succ (3.1_{4,3}) \\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4} \gg \curlyvee \begin{matrix}(2.3_{2,4}) \\ \succ (3.1_{3,4}) \\ (0.3_{2,3})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.0_{3,2}) \\ \succ (3.1_{4,3}) \\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4} \gg \curlyvee \begin{matrix}(0.3_{2,3}) \\ \succ (3.1_{3,4}) \\ (1.3_{3,4})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.1_{4,3}) \\ \succ (3.2_{4,2}) \\ (3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4} \gg \curlyvee \begin{matrix}(1.3_{3,4}) \\ \succ (3.1_{3,4}) \\ (0.3_{2,3})\end{matrix} \quad \times \quad (1.3_{4,3} \gg \curlyvee \begin{matrix}(3.0_{3,2}) \\ \succ (3.2_{4,2}) \\ (3.1_{4,3})\end{matrix}$$

11. Pre-semiotic dual system

$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.2_{1,2}) \times (2.0_{2,1}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.2_{1,2})\\ (2.2_{1,2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.1_{4,1})\\ (2.3_{4,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.2_{1,2})\\ (3.2_{2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (2.1_{4,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.2_{1,2})\\ (1.2_{1,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.2_{4,2,1})\\ (2.3_{4,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.2_{1,2})\\ (3.2_{2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (2.2_{4,2,1})\\ (2.1_{4,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (0.2_{1,2})\\ (2.2_{1,2,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.3_{4,2})\\ (2.1_{4,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.2_{1,2})\\ (1.2_{1,4})\end{matrix} \times (2.0_{2,1}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.3_{4,2})\\ (2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (1.2_{1,4})\\ (2.2_{1,2,4})\end{matrix} \times (2.1_{4,1}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.0_{2,1})\\ (2.3_{4,2})\end{matrix}$$

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (1.2_{1,4})\\ (3.2_{2,4})\end{matrix} \times (2.1_{4,1}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (2.0_{2,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (1.2_{1,4})\\ (3.2_{2,4})\end{matrix} \times (2.1_{4,1}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (2.2_{4,2,1})\\ (2.0_{2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(1.2_{1,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.2_{4,2,1})\\(2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(1.2_{1,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(2.3_{4,2})\\(2.0_{2,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.3_{4,2})\\(2.2_{4,2,1})\end{matrix}$$

Objectal action

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(2.2_{1,2,4})\\(1.2_{1,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.0_{2,1})\\(2.3_{4,2})\end{matrix}$$

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(2.0_{2,1})\\(2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(2.2_{1,2,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(2.1_{4,1})\\(2.0_{2,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(2.2_{1,2,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.1_{4,1})\\(2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(0.2_{1,2})\\(2.2_{1,2,4})\\(1.2_{1,2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.3_{4,2})\\(2.0_{2,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(2.2_{1,2,4})\\(0.2_{1,2})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.0_{2,1})\\(2.3_{4,2})\\(2.1_{4,1})\end{matrix}$$

Interpretative action

$$(0.2_{1,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.3_{4,2}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.0_{2,1})\end{matrix}$$

$$(1.2_{1,4}) \qquad\qquad (2.2_{4,2,1})$$

$$(0.2_{1,2}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (3.2_{2,4})\\ (2.2_{1,2,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.0_{2,1})\\ (2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (3.2_{2,4})\\ (2.2_{1,2,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.1_{4,1})\\ (2.0_{2,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (3.2_{2,4})\\ (0.2_{1,2})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (2.1_{4,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(0.2_{1,2})\\ \succ (3.2_{2,4})\\ (1.2_{1,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.2_{4,2,1})\\ (2.0_{2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(1.2_{1,4})\\ \succ (3.2_{2,4})\\ (0.2_{1,2})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \begin{matrix}(2.0_{2,1})\\ \succ (2.2_{4,2,1})\\ (2.1_{4,1})\end{matrix}$$

12. Pre-semiotic dual system

$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.2_{1,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 2.1_{4,1}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.3_{2,3})\\ (2.2_{1,2,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.2_{4,2,1})\\ \succ (2.1_{4,1})\\ (2.3_{4,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \begin{matrix}(2.2_{1,2,4})\\ \succ (0.3_{2,3})\\ (3.2_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (2.1_{4,1})\\ (2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.3_{2,3})\\ (1.2_{1,4})\end{matrix} \times (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.1_{4,1})\\ \succ (2.2_{4,2,1})\\ (2.3_{4,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(0.3_{2,3})\\(3.2_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(2.2_{4,2,1})\\(2.1_{4,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(0.3_{2,3})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(2.3_{4,2})\\(2.1_{4,1})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\\(1.2_{1,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.3_{4,2})\\(2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(1.2_{1,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(3.0_{3,2})\\(2.3_{4,2})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(3.0_{3,2})\\(2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(1.2_{1,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(1.2_{1,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(1.2_{1,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(2.3_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(1.2_{1,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.1_{4,1}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(2.3_{4,2})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(3.0_{3,2})\end{matrix}$$

$$(1.2_{1,4}) \qquad\qquad (2.3_{4,2})$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\ (2.2_{1,2,4})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\ (3.0_{3,2})\\ (2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\ (2.2_{1,2,4})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\ (2.1_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(3.2_{2,4})\\ (2.2_{1,2,4})\\ (0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\ (2.1_{4,1})\\ (2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\ (2.2_{1,2,4})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\ (2.3_{4,2})\\ (3.0_{3,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\ (2.2_{1,2,4})\\ (0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\ (2.3_{4,2})\\ (2.1_{4,1})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\ (3.2_{2,4})\\ (1.2_{1,4})\end{matrix} \quad \times \quad (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.1_{4,1})\\ (3.0_{3,2})\\ (2.2_{4,2,1})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.2_{1,4})\\ (3.2_{2,4})\\ (2.2_{1,2,4})\end{matrix} \quad \times \quad (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\ (3.0_{3,2})\\ (2.1_{4,1})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\ (3.2_{2,4})\\ (2.2_{1,2,4})\end{matrix} \quad \times \quad (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\ (2.1_{4,1})\\ (3.0_{3,2})\end{matrix}$$

$$(1.2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\ (3.2_{2,4})\\ (0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\ (2.3_{4,2})\\ (2.1_{4,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(3.2_{2,4})\\(1.2_{1,4})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \succ \begin{matrix}(2.1_{4,1})\\(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1.2_{1,4})\\(3.2_{2,4})\\(0.3_{2,3})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(2.1_{4,1})\end{matrix}$$

13. Pre-semiotic system

$(3.2_{2,4}\ 2.2_{1,2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 2.2_{4,2,1}\ 2.3_{4,2})$

Qualitative action

$$(1.3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(0.3_{2,3})\\(2.2_{1,2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(3.1_{4,3})\\(2.3_{4,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\\(3.2_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(3.1_{4,3})\\(2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(2.2_{4,2,1})\\(3.2_{4,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(3.2_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(2.2_{4,2,1})\\(3.1_{4,3})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(2.2_{1,2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(2.3_{4,2})\\(3.1_{4,3})\end{matrix}$$

$$(3.2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2.2_{1,2,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(2.3_{4,2})\\(2.2_{4,2,1})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{2,4})\\(1.3_{3,4})\end{matrix} \times (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \qquad\qquad (2.3_{4,2})$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(1.3_{3,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\(3.0_{3,2})\\(2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(1.3_{3,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\(2.2_{4,2,1})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(3.2_{2,4})\\(1.3_{3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(2.2_{4,2,1})\\(2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(1.3_{3,4})\\(2.2_{1,2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(2.3_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(1.3_{3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(2.3_{4,2})\\(2.2_{4,2,1})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(3.2_{2,4})\\(2.2_{1,2,4})\\(1.3_{3,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(3.0_{3,2})\\(2.3_{4,2})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(2.2_{1,2,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\(3.0_{3,2})\\(3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(2.2_{1,2,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2.3_{4,2})\\(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(3.2_{2,4})\\(2.2_{1,2,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(3.1_{4,3})\\(2.3_{4,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(2.2_{1,2,4})\\(1.3_{3,4})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(2.3_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(2.2_{1,2,4})\\(0.3_{2,3})\end{matrix} \times (2.2_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(2.3_{4,2})\\(3.1_{4,3})\end{matrix}$$

Interpretative action

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(3.2_{2,4})\\(1.3_{3,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(3.0_{3,2})\\(2.2_{4,2,1})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(3.2_{2,4})\\(2.2_{1,2,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(3.0_{3,2})\\(3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(3.2_{2,4})\\(2.2_{1,2,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.2_{1,2,4})\\(3.2_{2,4})\\(0.3_{2,3})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(3.1_{4,3})\\(2.2_{4,2,1})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(3.2_{2,4})\\(1.3_{3,4})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(2.3_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(2.2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(3.2_{2,4})\\(0.3_{2,3})\end{matrix} \times (2.3_{4,2}) \gg \curlyvee \succ \begin{matrix}(2.2_{4,2,1})\\(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$$

14. Pre-semiotic dual system

$(3.2_{2,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 2.3_{4,2})$

Qualitative action

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.3_{2,3})\\ (2.3_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(3.2_{4,2})\\ \succ (3.1_{4,3})\\ (2.3_{4,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(2.3_{2,4})\\ \succ (0.3_{2,3})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (3.1_{4,3})\\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (0.3_{2,3})\\ (1.3_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (3.2_{4,2})\\ (2.3_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (0.3_{2,3})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (3.2_{4,2})\\ (3.1_{4,3})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ (0.3_{2,3})\\ (2.3_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(3.2_{4,2})\\ \succ (2.3_{4,2})\\ (3.1_{4,3})\end{matrix}$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(2.3_{2,4})\\ \succ (0.3_{2,3})\\ (1.3_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ (2.3_{4,2})\\ (3.2_{4,2})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ (1.3_{3,4})\\ (2.3_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.2_{4,2})\\ \succ (3.0_{3,2})\\ (2.3_{4,2})\end{matrix}$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.3_{2,4})\\ \succ (1.3_{3,4})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (3.0_{3,2})\\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ 1.3_{3,4})\\ (3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ (3.2_{4,2})\\ (3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ\\ (0.3_{2,3})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ\\ (2.3_{4,2})\end{matrix} (3.2_{4,2})$$

$$(3.2_{2,4}) \gg \begin{matrix}(0.3_{2,3})\\ \succ\\ (2.3_{2,4})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.2_{4,2})\\ \succ\\ (3.0_{3,2})\end{matrix} (2.3_{4,2})$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(2.3_{2,4})\\ \succ\\ (0.3_{2,3})\end{matrix} (1.3_{3,4}) \quad \times \quad (3.1_{4,3}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ\\ (3.2_{4,2})\end{matrix} (2.3_{4,2})$$

Objectal action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ\\ (1.3_{3,4})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ\\ (2.3_{4,2})\end{matrix} (3.0_{3,2})$$

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ\\ (3.2_{2,4})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ\\ (3.1_{4,3})\end{matrix} (3.0_{3,2})$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ\\ (3.2_{2,4})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(2.3_{4,2})\\ \succ\\ (3.0_{3,2})\end{matrix} (3.1_{4,3})$$

$$(1.3_{3,4}) \gg \curlyvee \begin{matrix}(3.2_{2,4})\\ \succ\\ (0.3_{2,3})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ\\ (2.3_{4,2})\end{matrix} (3.1_{4,3})$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(0.3_{2,3})\\ \succ\\ (1.3_{3,4})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ\\ (2.3_{4,2})\end{matrix} (3.0_{3,2})$$

$$(3.2_{2,4}) \gg \curlyvee \begin{matrix}(1.3_{3,4})\\ \succ\\ (0.3_{2,3})\end{matrix} (2.3_{2,4}) \quad \times \quad (3.2_{4,2}) \gg \curlyvee \begin{matrix}(3.0_{3,2})\\ \succ\\ (2.3_{4,2})\end{matrix} (3.1_{4,3})$$

Interpretative action

$$(0.3_{2,3}) \gg \curlyvee \begin{matrix}(2.3_{2,4})\\ \succ\\ \end{matrix} (3.2_{2,4}) \quad \times \quad (2.3_{4,2}) \gg \curlyvee \begin{matrix}(3.1_{4,3})\\ \succ\\ \end{matrix} (3.0_{3,2})$$

$$(1.3_{3,4}) \qquad\qquad (3.2_{4,2})$$

$$(0.3_{2,3}) \gg \Upsilon \begin{matrix}(1.3_{3,4}) \\ \succ (3.2_{2,4}) \\ (2.3_{2,4})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \begin{matrix}(3.2_{4,2}) \\ \succ (3.0_{3,2}) \\ (3.1_{4,3})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3}) \\ \succ (3.2_{2,4}) \\ (2.3_{2,4})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \begin{matrix}(3.2_{4,2}) \\ \succ (3.1_{4,3}) \\ (3.0_{3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(2.3_{2,4}) \\ \succ (3.2_{2,4}) \\ (0.3_{2,3})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \begin{matrix}(3.0_{3,2}) \\ \succ (3.1_{4,3}) \\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \begin{matrix}(0.3_{2,3}) \\ \succ (3.2_{2,4}) \\ (1.3_{3,4})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \begin{matrix}(3.1_{4,3}) \\ \succ (3.2_{4,2}) \\ (3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \begin{matrix}(1.3_{3,4}) \\ \succ (3.2_{2,4}) \\ (0.3_{2,3})\end{matrix} \times (2.3_{4,2}) \gg \Upsilon \begin{matrix}(3.0_{3,2}) \\ \succ (3.2_{4,2}) \\ (3.1_{4,3})\end{matrix}$$

15. Pre-semiotic dual system

$(3.3_{2,3,4}\ 2.3_{2,4}\ 1.3_{3,4}\ 0.3_{2,3}) \times (3.0_{3,2}\ 3.1_{4,3}\ 3.2_{4,2}\ 3.3_{4,3,2})$

Qualitative action

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(3.3_{2,3,4}) \\ \succ (0.3_{2,3}) \\ (2.3_{2,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \begin{matrix}(3.2_{4,2}) \\ \succ (3.1_{4,3}) \\ (3.3_{4,3,2})\end{matrix}$$

$$(1.3_{3,4}) \gg \Upsilon \begin{matrix}(2.3_{2,4}) \\ \succ (0.3_{2,3}) \\ (3.3_{2,3,4})\end{matrix} \times (3.0_{3,2}) \gg \Upsilon \begin{matrix}(3.3_{4,3,2}) \\ \succ (3.1_{4,3}) \\ (3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \begin{matrix}(3.3_{2,3,4}) \\ \succ (0.3_{2,3}) \\ (1.3_{3,4})\end{matrix} \times (3.0_{3,2}) \gg \begin{matrix}(3.1_{4,3}) \\ \Upsilon \succ (3.2_{4,2}) \\ (3.3_{4,3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(3.3_{2,3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.3_{4,3,2})\\(3.2_{4,2})\\(3.1_{4,3})\end{matrix}$$

$$(3.3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(1.3_{3,4})\\(0.3_{2,3})\\(2.3_{2,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(3.3_{4,3,2})\\(3.1_{4,3})\end{matrix}$$

$$(3.3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(2.3_{2,4})\\(0.3_{2,3})\\(1.3_{3,4})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(3.3_{4,3,2})\\(3.2_{4,2})\end{matrix}$$

Medial action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.3_{2,3,4})\\(1.3_{3,4})\\(2.3_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(3.0_{3,2})\\(3.3_{4,3,2})\end{matrix}$$

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(2.3_{2,4})\\(1.3_{3,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(3.0_{3,2})\\(3.2_{4,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(1.3_{3,4})\\(3.2_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2.3_{4,2})\\(3.2_{4,2})\\(3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \Upsilon \succ \begin{matrix}(3.3_{2,3,4})\\(1.3_{3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.0_{3,2})\\(3.2_{4,2})\\(3.3_{4,3,2})\end{matrix}$$

$$(3.3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(0.3_{2,3})\\(1.3_{3,4})\\(2.3_{2,4})\end{matrix} \quad \times \quad (3.1_{4,3}) \gg \Upsilon \succ \begin{matrix}(3.2_{4,2})\\(3.3_{4,3,2})\\(3.0_{3,2})\end{matrix}$$

$$(3.3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(2.3_{2,4})\\(1.3_{3,4})\\(0.3_{2,3})\end{matrix} \quad \times \quad (3.0_{3,2}) \gg \Upsilon \succ \begin{matrix}(3.3_{4,3,2})\\(3.2_{4,2})\\(3.1_{4,3})\end{matrix}$$

Objectal action

$$(0.3_{2,3}) \gg \Upsilon \succ \begin{matrix}(3.3_{2,3,4})\\(2.3_{2,4})\end{matrix} \quad \times \quad (3.2_{4,2}) \gg \Upsilon \succ \begin{matrix}(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$$

$(1.3_{3,4})$ $(3.3_{4,3,2})$

$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(2.3_{2,4})\\(3.3_{2,3,4})\end{matrix}$ × $(3.2_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.3_{4,3,2})\\(3.0_{3,2})\\(3.1_{4,3})\end{matrix}$

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(2.3_{2,4})\\(3.3_{2,3,4})\end{matrix}$ × $(3.2_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.3_{4,3,2})\\(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(3.3_{2,3,4})\\(2.3_{2,4})\\(0.3_{2,3})\end{matrix}$ × $(3.2_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(3.1_{3,4})\\(3.3_{4,3,2})\end{matrix}$

$(3.3_{2,3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(2.3_{2,4})\\(1.3_{3,4})\end{matrix}$ × $(3.2_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(3.3_{2,3,4})\\(3.0_{3,2})\end{matrix}$

$(3.3_{2,3,4}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(2.3_{2,4})\\(0.3_{2,3})\end{matrix}$ × $(3.2_{4,2}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(3.3_{4,3,2})\\(3.1_{4,3})\end{matrix}$

Interpretative action

$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(2.3_{2,4})\\(3.3_{2,3,4})\\(1.3_{3,4})\end{matrix}$ × $(3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3})\\(3.0_{3,2})\\(3.2_{4,2})\end{matrix}$

$(0.3_{2,3}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4})\\(3.3_{2,3,4})\\(2.3_{2,4})\end{matrix}$ × $(3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.2_{4,2})\\(3.0_{3,2})\\(3.1_{4,3})\end{matrix}$

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3})\\(3.3_{2,3,4})\\(2.3_{2,4})\end{matrix}$ × $(3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.2_{4,2})\\(3.1_{4,3})\\(3.0_{3,2})\end{matrix}$

$(1.3_{3,4}) \gg \curlyvee \succ \begin{matrix}(2.3_{2,4})\\(3.3_{2,3,4})\\(0.3_{2,3})\end{matrix}$ × $(3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2})\\(3.1_{4,3})\\(3.2_{4,2})\end{matrix}$

$$(2.3_{2,4}) \gg \curlyvee \succ \begin{matrix}(0.3_{2,3}) \\ (3.3_{2,3,4}) \\ (1.3_{3,4})\end{matrix} \quad \times \quad (3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.1_{4,3}) \\ (3.2_{4,2}) \\ (3.0_{3,2})\end{matrix}$$

$$(2.3_{2,4}) \gg \curlyvee \succ \begin{matrix}(1.3_{3,4}) \\ (3.3_{2,3,4}) \\ (0.3_{2,3})\end{matrix} \quad \times \quad (3.3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(3.0_{3,2}) \\ (3.2_{4,2}) \\ (3.1_{4,3})\end{matrix}$$

Chapter Two: The Surreal Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system

$$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) \times (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}}\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}}\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

Qualitative action

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

$$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

$$(\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}})$$

$$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

$$(\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}})$$

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \curlywedge \gg (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

Medial action

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \},\{3 \mid \}}) (\{ \mid \}.\{0 \mid \}_{\{0 \mid \},\{2 \mid \}}) \times (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{ \mid \}_{\{2 \mid \},\{0 \mid \}}) \curlywedge \gg (\{0 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \},\{0 \mid \}}) (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

$$
\begin{array}{lcl}
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

Objectal action

$$
\begin{array}{lcl}
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})
\end{array}
$$

Interpretative action

$$\begin{array}{lcl} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid} & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \end{array}$$

2. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\,\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\,\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}\,\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times$$
$$(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\,\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}\,\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\,\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{lcl} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

Medial action

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})
\end{array}
$$

$$\begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$\begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{l}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{lcl} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \end{array}$$

3. Pre-semiotic dual system

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times$
$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

Qualitative Action

$$\begin{array}{lcl} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

Medial action

$$\begin{array}{l} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

$$\begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

$$\begin{array}{l} (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

Objectal action

$$\begin{array}{l} (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \\ \end{array} \quad \times \quad \begin{array}{l} (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

Interpretative action

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$$
\begin{array}{lcl}
(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

4. Pre-semiotic dual system

$$
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times
$$
$$
(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
$$

Qualitative action

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

Medial action

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \times \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \times \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

Objectal action

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \times \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \times \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad \times \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \quad \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

5. Pre-Semiotic dual system

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.$
$\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times$

$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\ \{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\ \{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\ \{0\mid\}.$
$\{2\mid\}_{\{3\mid\},\{2\mid\}})$

Qualtitative action

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})|$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\times$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

Medial action

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$ $\times$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$ $\times$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

Objectal action

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

Interpretative action

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

$$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

$$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$$

$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

6. Pre-semiotic dual system

$$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}\ \{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}\ \{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}\ \{ \mid \}.\ \{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times$$
$$(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}\ \{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}\ \{0 \mid \}.\{1 \mid \}_{\{3 \mid \},\{0 \mid \}}\ \{0 \mid \}.\ \{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

Qualitative action

$$(\{1 \mid \}.\{0 \mid \}_{\{0 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$\curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$\curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$\curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$\curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$
$\curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

Medial action

$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$\curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$
$\curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ × $\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$ $(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

Objectal action

$$
\begin{array}{lcl}
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

Interpretative action

$$
\begin{array}{lcl}
(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$ $(\{0\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$\curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $\times$ $\curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$ $(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{1\ |\ \}.\{0\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $\times$ $\curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $(\{0\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$ $(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $\times$ $\curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$

$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $(\{0\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $\times$ $\curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{0\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$ $(\{0\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $\times$ $\curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{0\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$

7. Pre-semiotic dual system

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}\ \{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}\ \{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}}\ \{\ |\ \}.$
$\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}}) \times$
$(\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}}\ \{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}}\ \{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}}\ \{0\ |\ \}.$
$\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

Qualitative action

$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$ $(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\curlywedge \gg (\{\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}})$ $\times$ $\curlywedge \gg (\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}})$
$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$ $(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\curlywedge \gg (\{\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}})$ $\times$ $\curlywedge \gg (\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}})$
$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$ $(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\curlywedge \gg (\{\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}})$ $\times$ $\curlywedge \gg (\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$ $(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$$\begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array}$$

Medial action

$$\begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \quad \times \quad \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array}$$

Objectal action

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$(\{\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}})$

$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$(\{\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{\ |\ \}_{\{1\ |\ \},\{0\ |\ \}})$

8. Pre-semiotic dual system

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}\ \{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}\ \{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}}\ \{\ |\ \}.$
$\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}}) \times$
$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}}\ \{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}}\ \{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}}\ \{0\ |\ \}.$
$\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

Qualitative action

$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$\quad (\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$\quad (\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{0\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\times$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$(\{1\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{0\ |\ \}})$

$$
\begin{array}{l}
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\qquad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})
\end{array}
$$

Medial action

$$
\begin{array}{l}
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})
\end{array}
$$

Objectal action

$$
\begin{array}{l}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}
$$

$$
\begin{array}{l}
(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})
\end{array}
\quad\times\quad
\begin{array}{l}
(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\qquad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

9. Pre-semiotic dual system

$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}} \{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}} \{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}} \{ \mid \}.$
$\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times$
$(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}} \{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}} \{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}} \{0 \mid \}.$
$\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$

Qualitative action

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$

$\times$

$(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$

$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$

$\times$

$(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}})$

$\times$

$(\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$
$(\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}})$

$\times$

$(\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$

Medial action

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$

$\times$

$(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$ $(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$

$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$

$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$

$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$

$(\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$

$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$(\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$

Objectal action

$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{\ |\ \}.\{2\ |\ \}_{\{1\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{\ |\ \}_{\{2\ |\ \},\{1\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{0\ |\ \},\{1\ |\ \},\{3\ |\ \}}) \quad \times$
$(\{0\ |\ \}.\{2\ |\ \}_{\{2\ |\ \},\{3\ |\ \}})$

$(\{2\ |\ \}.\{0\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$
$\quad \curlywedge \gg (\{1\ |\ \}.\{1\ |\ \}_{\{3\ |\ \},\{1\ |\ \},\{0\ |\ \}})$
$(\{0\ |\ \}.\{2\ |\ \}_{\{3\ |\ \},\{2\ |\ \}})$

$$\begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \times \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \times \begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

Interpretative action

$$\begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \end{array} \times \begin{array}{l} (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \end{array} \times \begin{array}{l} (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \times \begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \end{array} \times \begin{array}{l} (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

$$\begin{array}{l} (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \end{array} \times \begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{l} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \end{array} \times \begin{array}{l} (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

10. Pre-semiotic dual system

$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.$
$\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times$
$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}\{0\mid\}.$

$\{2 \mid \}_{\{3 \mid \},\{2 \mid \}})$

Qualitative action

$$\begin{array}{lcl} (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ \quad \curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \end{array}$$

Medial action

$$\begin{array}{lcl} (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ \quad \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{2 \mid \}.\{0 \mid \}_{\{2 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \\ \quad \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & & (\{0 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) & & (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}) \\ \quad \curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) & \times & \quad \curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}) \\ (\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) & & (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \end{array}$$

Objectal action

$$\begin{array}{lcl} (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \end{array}$$

$$\begin{array}{lcl} (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \end{array}$$

Interpretative action

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

11. Pre-semiotic dual system

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times$$
$$(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

Qualitative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$

Medial action

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$(\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$

$\times$

$(\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$(\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$

$\times$

$(\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{ \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{0 \mid \}.\{1 \mid \}_{\{0 \mid \},\{3 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$

$\times$

$(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\quad \curlywedge \gg (\{1 \mid \}.\{0 \mid \}_{\{3 \mid \},\{0 \mid \}})$
$(\{1 \mid \}.\{ \mid \}_{\{1 \mid \},\{0 \mid \}})$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Objectal action

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$\begin{array}{lcl}
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\
\quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})
\end{array}$$

12. Pre-semiotic dual system

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$

Qualitative action

$$\begin{array}{lcl}
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}$$

$$\begin{array}{lcl}
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\
\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},})
\end{array}$$

$$\begin{array}{lcl}
(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}} \\
\quad \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})
\end{array}$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge\gg(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Medial action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Objectal action

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\ \curlywedge\gg(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge\gg(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge\gg(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) 2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

13. Pre-semiotic dual system

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}} \{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}} \{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}} \{ \mid \}.$
$\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times$
$(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}} \{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}} \{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}} \{1 \mid \}.$
$\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

Qualitative action

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \},\{0 \mid \}})$

Medial action

$(\{1 \mid \}.\{1 \mid \}_{\{0 \mid \},\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $\times$ $\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $\times$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$ $(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$ $(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$

Objectal action

$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$

$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$ $(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$
$\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$ $\times$ $\quad \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$
$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$ $(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$\curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

14. Pre-semiotic dual system

$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.$
$\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times$

$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\ \{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\ \{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}\ \{1\mid\}.\ \{2\mid\}_{\{3\mid\},\{1\mid\}})$

Qualitative action

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad \times \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad \times \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad \times \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \quad \times \quad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \quad \times \quad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

Medial action

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad \times \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\ \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad \times \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})
\end{array}
$$

Objectal action

$$
\begin{array}{lcl}
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})
\end{array}
$$

$$
\begin{array}{lcl}
(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & & (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \\
\quad \curlywedge \gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) & \times & \quad \curlywedge \gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \\
(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) & & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})
\end{array}
$$

Interpretative action

$$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$$

$$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

$$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$$

$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

$$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$

$$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \quad (\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$\curlywedge \gg (\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}}) \times \curlywedge \gg (\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$$
$$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

15. Pre-semiotic dual system

$(\{2 \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \},\{3 \mid \}}\ \{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}\ \{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}}\ \{ \mid \}.$
$\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times$
$(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}}\ \{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}}\ \{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}}\ \{2 \mid \}.$
$\{2 \mid \}_{\{3 \mid \},\{2 \mid \},\{1 \mid \}})$

Qualitative action

$$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}}) \quad (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$$
$$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}}) \times \curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{2 \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \},\{1 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$

$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{1 \mid \}.\{2 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$(\{2 \mid \}.\{1 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$

Medial action

$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$

$(\{2 \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $(\{2 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \},\{1 \mid \}})$

$(\{ \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{ \mid \}_{\{2 \mid \},\{1 \mid \}})$

$(\{2 \mid \}.\{2 \mid \}_{\{1 \mid \},\{2 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{1 \mid \}_{\{3 \mid \},\{1 \mid \}})$
$\curlywedge \gg (\{0 \mid \}.\{2 \mid \}_{\{2 \mid \},\{3 \mid \}})$ × $\curlywedge \gg (\{2 \mid \}.\{0 \mid \}_{\{3 \mid \},\{2 \mid \}})$
$(\{1 \mid \}.\{2 \mid \}_{\{1 \mid \},\{3 \mid \}})$ $(\{2 \mid \}.\{2 \mid \}_{\{3 \mid \},\{2 \mid \},\{1 \mid \}})$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge\gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \curlywedge\gg (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

Objectal action

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \curlywedge\gg (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \curlywedge\gg (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlywedge\gg (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})$$

$$(\{\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\}}) \qquad (\{2\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{1\,|\,\}})$$

$$\begin{matrix}(\{0\,|\,\}.\{2\,|\,\}_{\{2\,|\,\},\{3\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\}})\end{matrix} \times \begin{matrix}(\{2\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{1\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{1\,|\,\}}) \\ (\{2\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{1\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{3\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{0\,|\,\}.\{2\,|\,\}_{\{2\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{2\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{1\,|\,\}}) \\ (\{2\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{1\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{0\,|\,\}.\{2\,|\,\}_{\{2\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{2\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{1\,|\,\}}) \\ (\{2\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{1\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{0\,|\,\}.\{2\,|\,\}_{\{2\,|\,\},\{3\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{1\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{2\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{1\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{1\,|\,\}}) \\ (\{2\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{1\,|\,\}.\{2\,|\,\}_{\{1\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{2\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{1\,|\,\}}) \\ \curlywedge \gg (\{2\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{1\,|\,\}}) \\ (\{2\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{1\,|\,\}})\end{matrix}$$

II. Action schemata of the 2· 24 tetradic semiotic partial relations[1]

1. Pre-semiotic dual system

$(\{2\,|\,\}.\{0\,|\,\}\,\{1\,|\,\}.\{0\,|\,\}\,\{0\,|\,\}.\{0\,|\,\}\,\{\,|\,\}.\{0\,|\,\}) \times$
$(\{0\,|\,\}.\{\,|\,\}\,\{0\,|\,\}.\{0\,|\,\}\,\{0\,|\,\}.\{1\,|\,\}\,\{0\,|\,\}.\{2\,|\,\})$

Qualitative action

$$\begin{matrix}(\{2\,|\,\}.\{0\,|\,\}_{\{2\,|\,\},\{3\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \gg \curlyvee \succ (\{\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\}}) \\ (\{1\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{0\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{0\,|\,\}}) \\ \gg \curlyvee \succ \\ \end{matrix} \begin{matrix}(\{0\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{1\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{3\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{3\,|\,\},\{2\,|\,\}}) \gg \curlyvee \succ (\{\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\}}) \\ (\{2\,|\,\}.\{0\,|\,\}_{\{2\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{0\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{0\,|\,\}}) \\ \gg \curlyvee \succ \\ \end{matrix} \begin{matrix}(\{0\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{0\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{2\,|\,\}.\{0\,|\,\}_{\{2\,|\,\},\{3\,|\,\}}) \\ (\{1\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{3\,|\,\}}) \gg \curlyvee \succ (\{\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{0\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{0\,|\,\}}) \\ \gg \curlyvee \succ \\ \end{matrix} \begin{matrix}(\{0\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\}})\end{matrix}$$

$$\begin{matrix}(\{0\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\},\{3\,|\,\}}) \\ (\{1\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{3\,|\,\}}) \gg \curlyvee \succ (\{\,|\,\}.\{0\,|\,\}_{\{0\,|\,\},\{2\,|\,\}}) \\ (\{2\,|\,\}.\{0\,|\,\}_{\{2\,|\,\},\{3\,|\,\}})\end{matrix} \times \begin{matrix}(\{0\,|\,\}.\{\,|\,\}_{\{2\,|\,\},\{0\,|\,\}}) \\ \gg \curlyvee \succ \\ \end{matrix} \begin{matrix}(\{0\,|\,\}.\{2\,|\,\}_{\{3\,|\,\},\{2\,|\,\}}) \\ (\{0\,|\,\}.\{0\,|\,\}_{\{3\,|\,\},\{2\,|\,\},\{0\,|\,\}}) \\ (\{0\,|\,\}.\{1\,|\,\}_{\{3\,|\,\},\{0\,|\,\}})\end{matrix}$$

[1] Technical reasons require unfortunately, that this chapter is set in 9 point.

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \times (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \times (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

Medial action

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

Objectal action

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})$$

$$(\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{\mid\}_{\{2\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

2. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times$$
$$(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \quad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\gg\succ(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\gg\succ(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\quad\times\quad\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \qquad (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})$$

Interpretative action

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

3. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \qquad (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})$$

Medial action

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

Objectal action

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{0\mid\}_{\{0\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\},\{0\mid\}})\end{array}$$

4. Pre-semiotic system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}\ )\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \times\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \quad \begin{array}{l}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

5. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

6. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times$$
$$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

Objectal action

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{0\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\ \times\ \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{1\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

7. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\ \{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\ \{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\ \{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\ \{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\ \{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\ \{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Interpretative action

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

8. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

Medial action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

Objectal action

$$\begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix}\times\begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

9. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times$$
$$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix}\times\begin{matrix}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}\gg_{Y}\succ\begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{matrix}$$

$$\begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \end{array}$$

Medial action

$$\begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \\ & (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) & \\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) & \end{array}$$

Objective action

$$\begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) & \\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) & \end{array}$$

$$\begin{array}{ccc} & (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) & \\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg & \curlyvee & \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \\ & (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) & \end{array} \times \begin{array}{ccc} & (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) & \\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg & \curlyvee & \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \\ & (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) & \end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\ \gg\ \curlyvee\ \succ(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\ \gg\ \curlyvee\ \succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

10. Pre-semiotic dual system

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times$$
$$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

Qualitative action

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\ \gg\ \curlyvee\ \succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\ \gg\ \curlyvee\ \succ(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Medial action

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})$$

Objectal action

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \quad (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}})$$

$$\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{c}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

11. Pre-semiotic dual system

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \times (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

Qualitative action

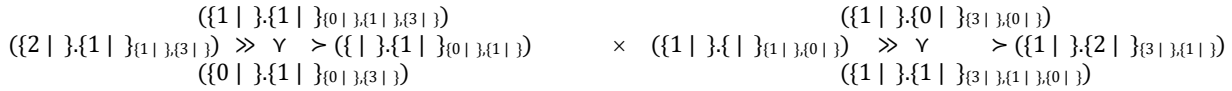
$$\begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

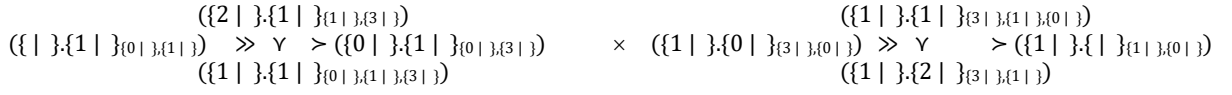
$$\begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

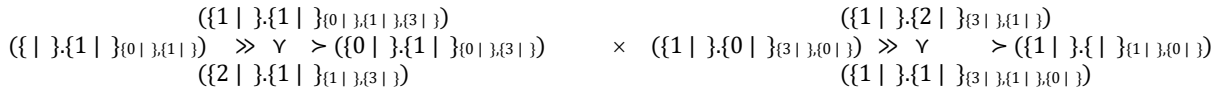
$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

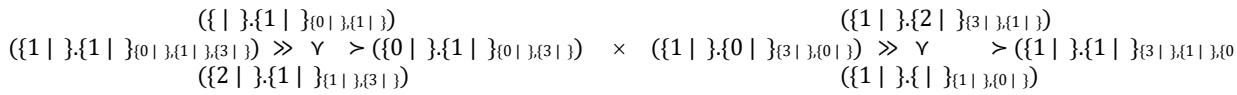
$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

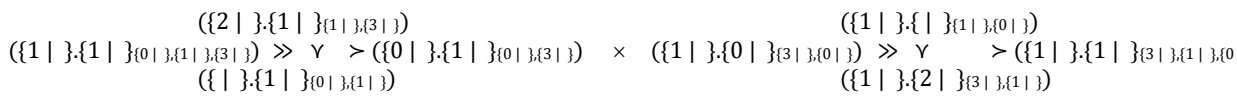


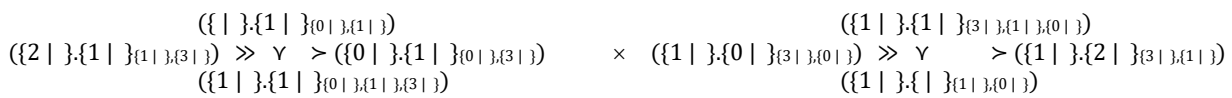
Medial action

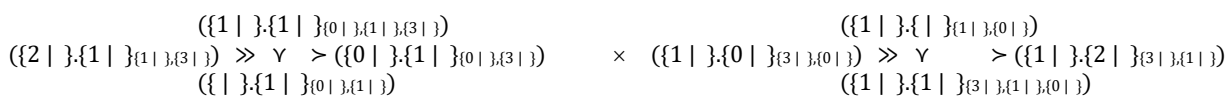




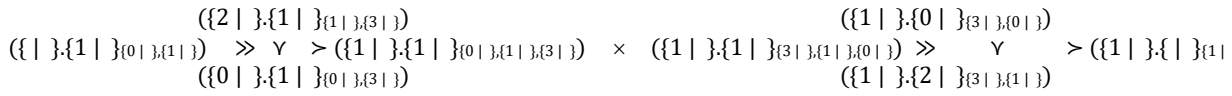


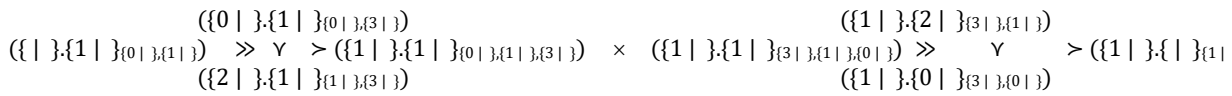


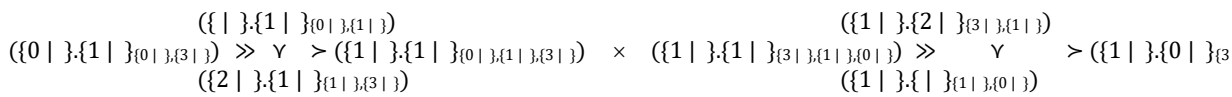


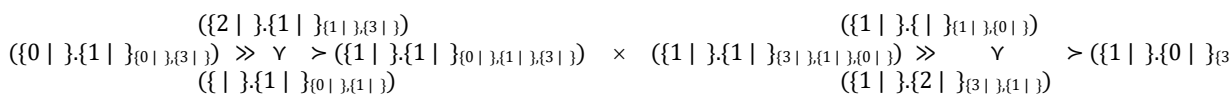


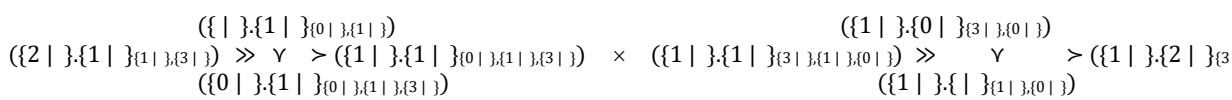
Objectal action

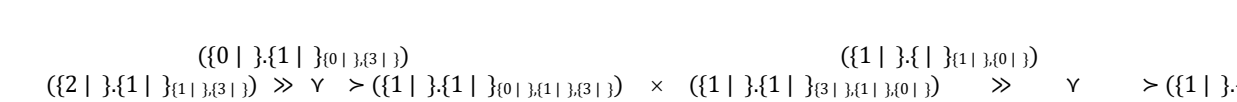












Interpretative action

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{\mid\}_{\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

12. Pre-semiotic dual system

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

Qualitative action

$$\begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{c}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \times \begin{array}{c}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

Medial action

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Objectal action

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{0\mid\}_{\{3\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{1\mid\}_{\{0\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

13. Pre-semiotic system

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

Qualitative action

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

Medial action

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array} \gg \curlyvee \succ \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \times (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

Objectal action

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$

Interpretative action

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$

$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}$$

$$(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \qquad (\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})$$
$$(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \times (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})$$
$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}}) \qquad (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ \qquad\qquad(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ \qquad\qquad(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ \qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\times\begin{array}{l}\qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ \qquad\qquad(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{1\mid\}_{\{0\mid\},\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ \qquad\qquad(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array}\times\begin{array}{l}\qquad\qquad(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\},\{0\mid\}})\\ \qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

14. Pre-semiotic dual system

$$(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times$$
$$(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})$$

Qualitative action

$$\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ \qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ \qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\gg\curlyvee\succ(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\times\\ \qquad\qquad(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array}\quad\begin{array}{l}\qquad\qquad(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\gg\curlyvee\succ(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

Medial action

$$\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\times\quad\begin{array}{l}\qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ \qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\gg\curlyvee\succ(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\times\quad\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}\qquad\qquad(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\gg\curlyvee\succ\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ \qquad\qquad(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array}\times\quad\begin{array}{l}\qquad\qquad(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\gg\curlyvee\succ(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ \qquad\qquad(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

Objectal action

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

15. Pre-semiotic dual system

$$(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \times (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})$$

Qualitative action

$$\begin{matrix}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{matrix}$$

Medial action

$$\begin{matrix}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{1\mid\}.\{2\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{matrix}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{matrix} \times \begin{matrix}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{matrix}$$

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

Objectal action

$$\begin{array}{l}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

Interpretative action

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\end{array}$$

$$\begin{array}{l}(\{0\mid\}.\{2\mid\}_{\{2\mid\},\{3\mid\}})\\ (\{1\mid\}.\{2\mid\}_{\{1\mid\},\{3\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\},\{3\mid\}})\\ (\{\mid\}.\{2\mid\}_{\{1\mid\},\{2\mid\}})\end{array} \times \begin{array}{l}(\{2\mid\}.\{\mid\}_{\{2\mid\},\{1\mid\}})\\ (\{2\mid\}.\{2\mid\}_{\{3\mid\},\{2\mid\},\{1\mid\}}) \gg \curlyvee \succ (\{2\mid\}.\{1\mid\}_{\{3\mid\},\{1\mid\}})\\ (\{2\mid\}.\{0\mid\}_{\{3\mid\},\{2\mid\}})\end{array}$$

Chapter Three: The Eisenstein Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system

$(3\omega{+}1_{3,4}\ 2\omega{+}1_{1,4}\ \omega{+}1_{1,3,4}\ \omega_{1,3}) \times (-\omega_{3,1}\ \omega{+}1_{4,3,1}\ \omega{+}2_{4,1}\ \omega{+}3_{4,3})$

Qualitative action

$(2\omega{+}1_{1,4})$ $(\omega{+}1_{4,3,1})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(\omega{+}1_{1,3,4})$ $(\omega{+}2_{4,1})$

$(3\omega{+}1_{3,4})$ $(\omega{+}1_{4,3,1})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(\omega{+}1_{1,3,4})$ $(\omega{+}3_{4,3})$

$(\omega{+}1_{1,3,4})$ $(\omega{+}2_{4,1})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(2\omega{+}1_{1,4})$ $(\omega{+}1_{4,3,1})$

$(3\omega{+}1_{3,4})$ $(\omega{+}2_{4,1})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(2\omega{+}1_{1,4})$ $(\omega{+}3_{4,3})$

$(\omega{+}1_{1,3,4})$ $(\omega{+}3_{4,3})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(3\omega{+}1_{3,4})$ $(\omega{+}1_{4,3,1})$

$(2\omega{+}1_{1,4})$ $(\omega{+}3_{4,3})$
$\curlywedge \gg (\omega_{1,3})$ $\times$ $\curlywedge \gg (-\omega_{3,1})$
$(3\omega{+}1_{3,4})$ $(\omega{+}2_{4,1})$

Medial action

$(2\omega{+}1_{1,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (\omega{+}1_{1,3,4})$ $\times$ $\curlywedge \gg (\omega{+}1_{4,3,1})$
$(\omega_{1,3})$ $(\omega{+}2_{4,1})$

$(3\omega{+}1_{3,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (\omega{+}1_{1,3,4})$ $\times$ $\curlywedge \gg (\omega{+}1_{4,3,1})$
$(\omega_{1,3})$ $(\omega{+}3_{4,3})$

$(\omega_{1,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(-\omega_{3,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(\omega_{1,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega+1_{3,4})$ $(-\omega_{3,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+1_{1,3,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega_{1,3})$ $(\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega_{1,3})$ $(\omega+3_{4,3})$

$(\omega_{1,3})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+1_{1,3,4})$ $(-\omega_{3,1})$

$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$

$(\omega_{1,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(-\omega_{3,1})$

Interpretative action

$(2\omega+1_{1,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega_{1,3})$ $(\omega+2_{4,1})$

$(\omega+1_{1,3,4})$ $(-\omega_{3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega_{1,3})$ $(\omega+1_{4,3,1})$

$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$

$(\omega_{1,3})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+1_{1,3,4})$ $(-\omega_{3,1})$

$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$

$(\omega_{1,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(-\omega_{3,1})$

2. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+1_{1,3,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ \omega+1_{4,3,1}\ \omega+2_{4,1}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Medial action

$(2\omega+1_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega_{1,2})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega_{1,2})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(1\text{-}\omega_{2,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+1_{1,3,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(2\omega_{1,2})$ $(\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(2\omega_{1,2})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+1_{1,3,4})$ $(1-\omega_{2,1})$

$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(1-\omega_{2,1})$

Interpretative action

$(2\omega+1_{1,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega_{1,2})$ $(\omega+2_{4,1})$

$(\omega+1_{1,3,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega_{1,2})$ $(2\omega_{1,2})$

$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$

$(2\omega_{1,2})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+1_{1,3,4})$ $(1\text{-}\omega_{2,1})$

$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$

$(2\omega_{1,2})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(1\text{-}\omega_{2,1})$

3. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+1_{1,3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ \omega+1_{4,3,1}\ \omega+2_{4,1}\ \omega+3_{4,3})$

Qualitative Action

$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(\omega+1_{4,3,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Medial action

$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega_{2,3})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+1_{1,3,4})$ × $\curlywedge \gg (\omega+1_{4,3,1})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+1_{1,3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega_{2,3})$ $(\omega+1_{4,3,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+1_{4,3,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+1_{1,3,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega{+}1_{3,4})$ $(\omega{+}1_{4,3,1})$
$\curlywedge \gg (2\omega{+}1_{1,4})$ × $\curlywedge \gg (\omega{+}2_{4,1})$
$(\omega{+}1_{1,3,4})$ $(\omega{+}3_{4,3})$

$(\omega{+}1_{1,3,4})$ $(\omega{+}3_{3,4})$
$\curlywedge \gg (2\omega{+}1_{1,4})$ × $\curlywedge \gg (\omega{+}2_{4,1})$
$(3\omega{+}1_{3,4})$ $(\omega{+}1_{4,3,1})$

$(3\omega_{2,3})$ $(\omega{+}3_{4,3})$
$\curlywedge \gg (2\omega{+}1_{1,4})$ × $\curlywedge \gg (\omega{+}2_{4,1})$
$(3\omega{+}1_{3,4})$ $(2{-}\omega_{3,2})$

Interpretative action

$(2\omega{+}1_{1,4})$ $(2{-}\omega_{3,2})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(3\omega_{2,3})$ $(\omega{+}2_{4,1})$

$(\omega{+}1_{1,3,4})$ $(2{-}\omega_{3,2})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(3\omega_{2,3})$ $(\omega{+}1_{4,3,1})$

$(2\omega{+}1_{1,4})$ $(\omega{+}1_{4,3,1})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(\omega{+}1_{1,3,4})$ $(\omega{+}2_{4,1})$

$(3\omega_{2,3})$ $(\omega{+}1_{4,3,1})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(\omega{+}1_{1,3,4})$ $(2{-}\omega_{3,2})$

$(\omega{+}1_{1,3,4})$ $(\omega{+}2_{4,1})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(2\omega{+}1_{1,4})$ $(\omega{+}1_{4,3,1})$

$(3\omega_{2,3})$ $(\omega{+}2_{4,1})$
$\curlywedge \gg (3\omega{+}1_{3,4})$ × $\curlywedge \gg (\omega{+}3_{4,3})$
$(2\omega{+}1_{1,4})$ $(2{-}\omega_{3,2})$

4. Pre-semiotic dual system
$(3\omega{+}1_{3,4}\ 2\omega{+}1_{1,4}\ \omega{+}2_{1,4}\ 2\omega_{1,2}) \times (1{-}\omega_{2,1}\ 2\omega{+}1_{4,1}\ \omega{+}2_{4,1}\ \omega{+}3_{4,3})$

Qualitative action

$$(2\omega+1_{1,4}) \quad (2\omega+1_{4,1})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(\omega+2_{1,4}) \quad (\omega+2_{4,1})$$

$$(3\omega+1_{3,4}) \quad (2\omega+1_{4,1})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(\omega+2_{1,4}) \quad (\omega+3_{4,3})$$

$$(\omega+2_{1,4}) \quad (\omega+2_{4,1})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(2\omega+1_{1,4}) \quad (2\omega+1_{4,1})$$

$$(3\omega+1_{3,4}) \quad (\omega+2_{4,1})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(2\omega+1_{1,4}) \quad (\omega+3_{4,3})$$

$$(\omega+2_{1,4}) \quad (\omega+3_{4,3})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(3\omega+1_{3,4}) \quad (2\omega+1_{4,1})$$

$$(2\omega+1_{1,4}) \quad (\omega+3_{4,3})$$
$$\curlywedge \gg (2\omega_{1,2}) \times \curlywedge \gg (1\text{-}\omega_{2,1})$$
$$(3\omega+1_{3,4}) \quad (\omega+2_{4,1})$$

Medial action

$$(2\omega+1_{1,4}) \quad (1\text{-}\omega_{2,1})$$
$$\curlywedge \gg (\omega+2_{1,4}) \times \curlywedge \gg (2\omega+1_{4,1})$$
$$(2\omega_{1,2}) \quad (\omega+2_{4,1})$$

$$(3\omega+1_{3,4}) \quad (1\text{-}\omega_{2,1})$$
$$\curlywedge \gg (\omega+2_{1,4}) \times \curlywedge \gg (2\omega+1_{4,1})$$
$$(2\omega_{1,2}) \quad (\omega+3_{4,3})$$

$$(2\omega_{1,2}) \quad (\omega+2_{4,1})$$
$$\curlywedge \gg (\omega+2_{1,4}) \times \curlywedge \gg (2\omega+1_{4,1})$$
$$(2\omega+1_{1,4}) \quad (1\text{-}\omega_{2,1})$$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(2\omega_{1,2})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$

Interpretative action

$(2\omega+1_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+2_{4,1})$

$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (3\omega+1_{3,4}) \times \curlywedge \gg (\omega+3_{4,3})$
$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(2\omega+1_{1,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4}) \times \curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(\omega+2_{4,1})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4}) \times \curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(\omega+2_{1,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4}) \times \curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4}) \times \curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(1\text{-}\omega_{2,1})$

5. Pre-Semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+2_{1,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 2\omega+1_{4,1}\ \omega+2_{4,1}\ \omega+3_{4,3})$

Qualtitative action

$(2\omega+1_{1,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3}) \times \curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3}) \times \curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+2_{4,1})|$
$\curlywedge \gg (3\omega_{2,3}) \times \curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Medial action

$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega_{2,3})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge 2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$

$\curlywedge \gg (2\omega+1_{1,4})$ $(3\omega_{2,3})$ × $\curlywedge \gg (\omega+2_{4,1})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $\curlywedge \gg (2\omega+1_{1,4})$ $(3\omega_{2,3})$ × $(2\text{-}\omega_{3,2})$ $\curlywedge \gg (\omega+2_{4,1})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $\curlywedge \gg (2\omega+1_{1,4})$ $(\omega+2_{1,4})$ × $(2\omega+1_{4,1})$ $\curlywedge \gg (\omega+2_{4,1})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $\curlywedge \gg (2\omega+1_{1,4})$ $(\omega+2_{1,4})$ × $(2\omega+1_{4,1})$ $\curlywedge \gg (\omega+2_{4,1})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $\curlywedge \gg (2\omega+1_{1,4})$ $(3\omega+1_{3,4})$ × $(\omega+3_{4,3})$ $\curlywedge \gg (\omega+2_{4,1})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $\curlywedge \gg (2\omega+1_{1,4})$ $(3\omega+1_{3,4})$ × $(\omega+3_{4,3})$ $\curlywedge \gg (\omega+2_{4,1})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+1_{1,4})$ $\curlywedge \gg (3\omega+1_{3,4})$ $(3\omega_{2,3})$ × $(2\text{-}\omega_{3,2})$ $\curlywedge \gg (\omega+3_{4,3})$ $(\omega+2_{4,1})$

$(\omega+2_{1,4})$ $\curlywedge \gg (3\omega+1_{3,4})$ $(3\omega_{2,3})$ × $(2\text{-}\omega_{3,2})$ $\curlywedge \gg (\omega+3_{4,3})$ $(2\omega+1_{4,1})$

$(2\omega+1_{1,4})$ $\curlywedge \gg (3\omega+1_{3,4})$ $(\omega+2_{1,4})$ × $(2\omega+1_{4,1})$ $\curlywedge \gg (\omega+3_{4,3})$ $(\omega+2_{4,1})$

$(3\omega_{2,3})$ $\curlywedge \gg (3\omega+1_{3,4})$ $(\omega+2_{1,4})$ × $(2\omega+1_{4,1})$ $\curlywedge \gg (\omega+3_{4,3})$ $(2\text{-}\omega_{3,2})$

$(\omega+2_{1,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$

6. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ \omega+2_{4,1}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+1_{1,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Medial action

$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+1_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(\omega+2_{4,1})$

Objectal action

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+1_{1,4})$ × $\curlywedge \gg (\omega+2_{4,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+1_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(\omega+2_{4,1})$

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(2\omega+1_{1,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(\omega+2_{4,1})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+1_{1,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(\omega+2_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\text{-}\omega_{3,2})$ $(2\text{-}\omega_{3,2})$

7. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega_{1,2})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(2\omega_{1,2})$ $(\omega+3_{4,3})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(1\text{-}\omega_{2,1})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$

$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$

$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$

8. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$

$(3\omega_{2,3})$ $(2\omega+1_{4,1})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(\omega+3_{4,3})$

$(\omega+2_{1,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega_{2,3})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

9. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+2_{1,2,4}\ \omega+3_{4,3}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 2\omega+2_{4,2,1}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+2_{1,2,4})$ $(2-\omega_{3,2})$

$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(2-\omega_{3,2})$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+3_{3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+3_{3,4})$ $(2-\omega_{3,2})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(2\omega+2_{1,2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(2\omega+2_{4,2,1})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})$ $(2\omega+2_{1,2,4})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+2_{4,2,1})$ $(3\omega_{2,3})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

10. Pre-semiotic dual system
$(3\omega+1_{3,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ \omega+3_{4,3})$

Qualitative action

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+1_{3,4})$ $(3\omega+2_{4,2})$

Medial action

$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+3_{2,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+1_{3,4})$ $(3\omega+2_{4,2})$

Objectal action

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega_{2,3})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(\omega+3_{4,3})$

$(\omega+3_{3,4})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega+1_{3,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(\omega+3_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega+1_{3,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+1_{3,4})$ × $\curlywedge \gg (\omega+3_{4,3})$
$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

11. Pre-semiotic dual system
$(3\omega+2_{2,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ 2\omega+3_{4,2})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1\text{-}\omega_{2,1})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1-\omega_{2,1})$
$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1-\omega_{2,1})$
$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega_{1,2})$ × $\curlywedge \gg (1-\omega_{2,1})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(3\omega+2_{2,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega_{1,2})$ $(2\omega+3_{4,2})$

$(3\omega+2_{2,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega_{1,2})$ $(2\omega+3_{4,2})$

$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(1-\omega_{2,1})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$

$(2\omega_{1,2})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+2_{2,4})$ $(1-\omega_{2,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+2_{1,4})$ $(1-\omega_{2,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(3\omega+2_{2,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(2\omega_{1,2})$ $(2\omega+3_{4,2})$

$(2\omega_{1,2})$ $(2\omega+1_{1,4})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(1\text{-}\omega_{2,1})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega_{1,2})$ $(2\omega+2_{4,2,1})$

$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega_{1,2})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(2\omega_{1,2})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+2_{1,4})$ $(1\text{-}\omega_{2,1})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(2\omega_{1,2})$ $(2\omega+2_{1,2,4})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+2_{1,2,4})$ $(1\text{-}\omega_{2,1})$

12. Pre-semiotic dual system
$(3\omega+2_{2,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ 2\omega+3_{4,2})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(2\omega+2_{1,2,})$

$(\omega+2_{1,4})$ $(2\omega+3_{4,2}$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+2_{1,4})$ × $\curlywedge \gg (2\omega+1_{4,1})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(2\omega+1_{4,1})$

$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(3\omega_{2,3})$ $(2\omega+1_{4,1})$

$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$

$(3\omega_{2,3})$ $(2\omega+1_{4,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+2_{1,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+2_{1,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+2_{1,2,4})$ $(2\omega+1_{4,1})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

13. Pre-semiotic dual system
$(3\omega+2_{2,4}\ 2\omega+2_{1,2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 2\omega+2_{4,2,1}\ 2\omega+3_{4,2})$

Qualitative action

$(2\omega+2_{1,2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(2\omega+2_{4,2,1})$

$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(3\omega+1_{4,3})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Medial action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$

$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+2_{1,2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+2_{2,4})$ $(2\omega+2_{4,2,1})$

Objectal action

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+2_{1,2,4})$ × $\curlywedge \gg (2\omega+2_{4,2,1})$
$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$

Interpretative action

$(2\omega+2_{1,2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega_{2,3})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(2\omega+2_{4,2,1})$ $\curlywedge \gg (2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(3\omega+1_{4,3})$ $\curlywedge \gg (2\omega+3_{4,2})$

$(2\omega+2_{1,2,4})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(2\omega+2_{4,2,1})$ $\curlywedge \gg (2\omega+3_{4,2})$

$(3\omega_{2,3})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(\omega+3_{3,4})$ $\curlywedge \gg (2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(2\omega+2_{4,2,1})$ $\curlywedge \gg (2\omega+3_{4,2})$

$(3\omega_{2,3})$ $\curlywedge \gg (3\omega+2_{2,4})$ × $(2\omega+2_{4,2,1})$ $\curlywedge \gg (2\omega+3_{4,2})$

14. Pre-semiotic dual system

$(3\omega+2_{2,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ 2\omega+3_{4,2})$

Qualitative action

$(2\omega+3_{2,4})$ $\curlywedge \gg (3\omega_{2,3})$ × $(3\omega+1_{4,3})$ $\curlywedge \gg (2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $\curlywedge \gg (3\omega_{2,3})$ × $(3\omega+1_{4,3})$ $\curlywedge \gg (2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})$ $\curlywedge \gg (3\omega_{2,3})$ × $(3\omega+2_{4,2})$ $\curlywedge \gg (2\text{-}\omega_{3,2})$

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$

Medial action

$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+2_{2,4})$ $(2\text{-}\omega_{3,2})$

$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$

Objectal action

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+2_{2,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega_{2,3})$ $(2\omega+3_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(2-\omega_{3,2})$

$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega+2_{2,4})$ $(2-\omega_{3,2})$

Interpretative action

$(2\omega+3_{2,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(\omega+3_{3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(\omega+3_{3,4})$ $(2-\omega_{3,2})$

$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+2_{2,4})$ × $\curlywedge \gg (2\omega+3_{4,2})$
$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

15. Pre-semiotic dual system

$(3\omega+3_{2,3,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ 3\omega+3_{4,3,2})$

Qualitative action

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$

$(3\omega+3_{2,3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(\omega+3_{3,4})$ $(3\omega+3_{4,3,2})$

$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$

$(\omega+3_{3,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(2\omega+3_{4,2})$
$\curlywedge \gg (3\omega_{2,3})$ × $\curlywedge \gg (2\text{-}\omega_{3,2})$
$(3\omega+2_{2,4})$ $(3\omega+2_{4,2})$

Medial action

$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ × $\curlywedge \gg (3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(3\omega+3_{2,3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ $\times$ $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega_{2,3})$ $(3\omega+3_{4,3,2})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ $\times$ $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(2-\omega_{3,2})$

$(3\omega+3_{2,3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (\omega+3_{3,4})$ $\times$ $\curlywedge \gg (3\omega+1_{4,3})$
$(2\omega+3_{2,4})$ $(3\omega+3_{4,3,2})$

$(3\omega_{2,3})$ $(3\omega+3_{4,3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ $\times$ $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+3_{2,3,4})$ $(2-\omega_{3,2})$

$(2\omega+3_{2,4})$ $(3\omega+3_{4,3,2})$
$\curlywedge \gg (\omega+3_{3,4})$ $\times$ $\curlywedge \gg (3\omega+1_{4,3})$
$(3\omega+3_{2,3,4})$ $(3\omega+2_{4,2})$

Objectal action

$(\omega+3_{3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ $\times$ $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(3\omega+3_{2,3,4})$ $(2-\omega_{3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ $\times$ $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega_{2,3})$ $(3\omega+3_{4,3,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ $\times$ $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(2-\omega_{3,2})$

$(3\omega+3_{2,3,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (2\omega+3_{2,4})$ $\times$ $\curlywedge \gg (3\omega+2_{4,2})$
$(\omega+3_{3,4})$ $(3\omega+3_{4,3,2})$

$(\omega+3_{3,4})$ $(3\omega+3_{4,3,2})$
$\curlywedge \gg (2\omega+3_{2,4})$ × $\curlywedge \gg (3\omega+2_{4,2})$
$(3\omega+3_{2,3,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(3\omega_{2,3})$ $(3\omega+2_{4,2})$

$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(3\omega_{2,3})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$

$(3\omega_{2,3})$ $(3\omega+1_{4,3})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(\omega+3_{3,4})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(2\omega+3_{2,4})$ $(3\omega+1_{4,3})$

$(3\omega_{2,3})$ $(3\omega+2_{4,2})$
$\curlywedge \gg (3\omega+3_{2,3,4})$ × $\curlywedge \gg (3\omega+3_{4,3,2})$
$(2\omega+3_{2,4})$ $(2\text{-}\omega_{3,2})$

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
$(3\omega+1\ 2\omega+1\ \omega+1\ \omega) \times (-\omega\ \omega+1\ \omega+2\ \omega+3)$

Qualitative action

$$(\omega{+}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega_{1,3})\\(2\omega{+}1_{1,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(\omega{+}1_{4,3,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(\omega{+}1_{1,4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(\omega_{1,3})\\(3\omega{+}1_{3,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(\omega{+}1_{4,3,1})\\(\omega{+}2_{4,1})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega_{1,3})\\(\omega{+}1_{1,3,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}1_{4,3,1})\\(\omega{+}2_{4,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}1_{1,3,4})\\(\omega_{1,3})\\(3\omega{+}1_{3,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(\omega{+}2_{4,1})\\(\omega{+}1_{4,3,1})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}1_{1,3,4})\\(\omega_{1,3})\\(2\omega{+}1_{1,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(\omega{+}3_{4,3})\\(\omega{+}1_{4,3,1})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(\omega_{1,3})\\(\omega{+}1_{1,3,4})\end{matrix} \times (-\omega_{3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}1_{4,3,1})\\(\omega{+}3_{4,3})\\(\omega{+}2_{4,1})\end{matrix}$$

Medial action

$$(\omega_{1,3}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}1_{1,3,4})\\(2\omega{+}1_{1,4})\end{matrix} \times (\omega{+}1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(-\omega_{3,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(\omega_{1,3}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(\omega{+}1_{1,3,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (\omega{+}1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(-\omega_{3,1})\\(\omega{+}2_{4,1})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(\omega_{1,3})\\(\omega{+}1_{1,3,4})\\(3\omega{+}1_{3,4})\end{matrix} \times \begin{matrix}(\omega{+}3_{4,3})\\(\omega{+}1_{4,3,1}) \gg \Upsilon \succ (\omega{+}2_{4,1})\\(-\omega_{3,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(\omega+1_{1,3,4})\\(\omega_{1,3})\end{matrix} \quad \times \quad (\omega+1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(-\omega_{3,1})\\(\omega+2_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega_{1,3})\\(\omega+1_{1,3,4})\\(2\omega+1_{1,4})\end{matrix} \quad \times \quad (\omega+1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{4,1})\\(\omega+3_{4,3})\\(-\omega_{3,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\\(\omega_{1,3})\end{matrix} \quad \times \quad (\omega+1_{4,3,1}) \gg \Upsilon \succ \begin{matrix}(-\omega_{3,1})\\(\omega+3_{4,3})\\(\omega+2_{4,1})\end{matrix}$$

Objectal action

$$(\omega_{1,3}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+1_{4,3,1})\\(\omega+3_{4,3})\\(-\omega_{3,1})\end{matrix}$$

$$(\omega_{1,3}) \gg \Upsilon \succ \begin{matrix}(\omega+1_{1,3,4})\\(2\omega+1_{1,4})\\(3\omega+1_{3,4})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(-\omega_{3,1})\\(\omega+1_{4,3,1})\end{matrix}$$

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\omega_{1,3})\\(2\omega+1_{1,4})\\(3\omega+1_{3,4})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(\omega+1_{4,3,1})\\(-\omega_{3,1})\end{matrix}$$

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{1,4})\\(\omega_{1,3})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(-\omega_{3,1})\\(\omega+1_{4,3,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega_{1,3})\\(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+1_{4,3,1})\\(\omega+3_{4,3})\\(-\omega_{3,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+1_{1,3,4})\\(2\omega+1_{1,4})\\(\omega_{1,3})\end{matrix} \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(-\omega_{3,1})\\(\omega+3_{4,3})\\(\omega+1_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(2\omega+1_{1,4})\end{matrix} \qquad \begin{matrix}(\omega+1_{4,3,1})\end{matrix}$$

$$(\omega_{1,3}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (-\omega_{3,1})$$
$$(\omega+1_{1,3,4}) \qquad\qquad (\omega+2_{4,1})$$

$$(\omega_{1,3}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (-\omega_{3,1})$$
$$(\omega+1_{1,3,4}) \qquad\qquad (\omega+2_{4,1})$$
$$(2\omega+1_{1,4}) \qquad\qquad (\omega+1_{4,3,1})$$

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (\omega+1_{4,3,1})$$
$$(\omega_{1,3}) \qquad\qquad (\omega+2_{4,1})$$
$$(2\omega+1_{1,4}) \qquad\qquad (-\omega_{3,1})$$

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (\omega+1_{4,3,1})$$
$$(2\omega+1_{1,4}) \qquad\qquad (\omega+2_{4,1})$$
$$(\omega_{1,3}) \qquad\qquad (-\omega_{3,1})$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \quad \Upsilon \quad \succ (\omega+2_{4,1})$$
$$(\omega_{1,3}) \qquad\qquad (\omega+1_{4,3,1})$$
$$(\omega+1_{1,3,4}) \qquad\qquad (-\omega_{3,1})$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (\omega+2_{4,1})$$
$$(\omega_{1,3}) \qquad\qquad (\omega+1_{4,3,1})$$
$$(\omega+1_{1,3,4}) \qquad\qquad (-\omega_{3,1})$$

2. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+1_{1,3,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ \omega+1_{4,3,1}\ \omega+2_{1,4}\ \omega+3_{4,3})$

Qualitative action

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad \times \quad (1\text{-}\omega_{2,1}) \gg \Upsilon \succ (\omega+1_{4,3,1})$$
$$(3\omega+1_{3,4}) \qquad\qquad (\omega+2_{4,1})$$
$$(2\omega+1_{1,4}) \qquad\qquad (\omega+3_{4,3})$$

$$(\omega+1_{1,3,4}) \gg \Upsilon \succ (2\omega_{1,2}) \quad \times \quad (1\text{-}\omega_{2,1}) \gg \Upsilon \succ (\omega+1_{4,3,1})$$
$$(2\omega+1_{1,4}) \qquad\qquad (\omega+3_{4,3})$$
$$(3\omega+1_{3,4}) \qquad\qquad (\omega+2_{4,1})$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ (2\omega_{1,2}) \quad \times \quad (1\text{-}\omega_{2,1}) \gg \Upsilon \succ (\omega+2_{4,1})$$
$$(3\omega+1_{3,4}) \qquad\qquad (\omega+1_{4,3,1})$$
$$(\omega+1_{1,3,4}) \qquad\qquad (\omega+3_{4,3})$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(\omega+1_{1,3,4})\\ \succ (2\omega_{1,2})\\ (3\omega+1_{3,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (\omega+2_{4,1})\\ (\omega+1_{4,3,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(\omega+1_{1,3,4})\\ \succ (2\omega_{1,2})\\ (2\omega+1_{1,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ (\omega+3_{4,3})\\ (\omega+1_{4,3,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ (2\omega_{1,2})\\ (\omega+1_{1,3,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+1_{4,3,1})\\ \succ (\omega+3_{4,3})\\ (\omega+2_{4,1})\end{matrix}$$

Medial action

$$(2\omega_{1,2}) \gg_\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ (\omega+1_{1,3,4})\\ (2\omega+1_{1,4})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ (1\text{-}\omega_{2,1})\\ (\omega+3_{4,3})\end{matrix}$$

$$(2\omega_{1,2}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ (\omega+1_{1,3,4})\\ (3\omega+1_{3,4})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (1\text{-}\omega_{2,1})\\ (\omega+2_{4,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ (\omega+1_{1,3,4})\\ (3\omega+1_{3,4})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (\omega+2_{4,1})\\ (1\text{-}\omega_{2,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ (\omega+1_{1,3,4})\\ (2\omega_{1,2})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(1\text{-}\omega_{2,1})\\ \succ (\omega+2_{1,4})\\ (\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ (\omega+1_{1,3,4})\\ (2\omega+1_{1,4})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ (\omega+3_{4,3})\\ (1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ (\omega+1_{1,3,4})\\ (2\omega_{1,2})\end{matrix} \times (\omega+1_{4,3,1}) \gg_\Upsilon \begin{matrix}(1\text{-}\omega_{2,1})\\ \succ (\omega+3_{4,3})\\ (\omega+2_{4,1})\end{matrix}$$

Objectal action

$$(3\omega+1_{3,4}) \qquad (\omega+1_{4,3,1})$$

$(2\omega_{1,2}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(\omega+1_{1,3,4})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (1-\omega_{2,1})$ $(\omega+3_{4,3})$

$(2\omega_{1,2}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(3\omega+1_{3,4})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (1-\omega_{2,1})$ $(\omega+3_{4,3})$ $(\omega+1_{4,3,1})$

$(\omega+1_{1,3,4}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(3\omega+1_{3,4})$ $(2\omega_{1,2})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (\omega+1_{4,3,1})$ $(1-\omega_{2,1})$ $(\omega+3_{4,3})$

$(\omega+1_{1,3,4}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(3\omega+1_{3,4})$ $(2\omega_{1,2})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (\omega+1_{4,3,1})$ $(1-\omega_{2,1})$ $(\omega+3_{4,3})$

$(3\omega+1_{3,4}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(2\omega_{1,2})$ $(\omega+1_{1,3,4})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (\omega+3_{4,3})$ $(\omega+1_{4,3,1})$ $(1-\omega_{2,1})$

$(3\omega+1_{3,4}) \gg \Upsilon \succ (2\omega+1_{1,4})$ $(\omega+1_{1,3,4})$ $(2\omega_{1,2})$ × $(\omega+2_{4,1}) \gg \Upsilon \succ (\omega+3_{4,3})$ $(1-\omega_{2,1})$ $(\omega+1_{4,3,1})$

Interpretative action

$(2\omega_{1,2}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(2\omega+1_{1,4})$ $(\omega+1_{1,3,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (1-\omega_{2,1})$ $(\omega+1_{4,3,1})$ $(\omega+2_{4,1})$

$(2\omega_{1,2}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(\omega+1_{1,3,4})$ $(2\omega+1_{1,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (1-\omega_{2,1})$ $(\omega+2_{4,1})$ $(\omega+1_{4,3,1})$

$(\omega+1_{1,3,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(2\omega_{1,2})$ $(2\omega+1_{1,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (\omega+1_{4,3,1})$ $(1-\omega_{2,1})$ $(\omega+2_{4,1})$

$(\omega+1_{1,3,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(2\omega+1_{1,4})$ $(2\omega_{1,2})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (\omega+1_{4,3,1})$ $(1-\omega_{2,1})$ $(\omega+2_{4,1})$

$$(2\omega{+}1_{1,4}) \begin{matrix}(2\omega_{1,2})\\ \gg \Upsilon \succ\\ (\omega{+}1_{1,3,4})\end{matrix} (3\omega{+}1_{3,4}) \times (\omega{+}3_{4,3}) \begin{matrix}(\omega{+}1_{4,3,1})\\ \gg \Upsilon \succ\\ (1\text{-}\omega_{2,1})\end{matrix} (\omega{+}2_{4,1})$$

$$(2\omega{+}1_{1,4}) \begin{matrix}(\omega{+}1_{1,3,4})\\ \gg \Upsilon \succ\\ (2\omega_{1,2})\end{matrix} (3\omega{+}1_{3,4}) \times (\omega{+}3_{4,3}) \begin{matrix}(1\text{-}\omega_{2,1})\\ \gg \Upsilon \succ\\ (\omega{+}1_{4,3,1})\end{matrix} (\omega{+}2_{4,1})$$

3. Pre-semiotic dual system

$(3\omega{+}1_{3,4}\ 2\omega{+}1_{1,4}\ \omega{+}1_{1,3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ \omega{+}1_{4,3,1}\ \omega{+}2_{4,1}\ \omega{+}3_{4,3})$

Qualitative action

$$(\omega{+}1_{1,3,4}) \begin{matrix}(3\omega{+}1_{3,4})\\ \gg \Upsilon \succ\\ (2\omega{+}1_{1,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}2_{4,1})\\ \gg \Upsilon \succ\\ (\omega{+}3_{4,3})\end{matrix} (\omega{+}1_{4,3,1})$$

$$(\omega{+}1_{1,3,4}) \begin{matrix}(2\omega{+}1_{1,4})\\ \gg \Upsilon \succ\\ (3\omega{+}1_{3,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}3_{4,3})\\ \Upsilon \succ\\ (\omega{+}2_{4,1})\end{matrix} (\omega{+}1_{4,3,1})$$

$$(2\omega{+}1_{1,4}) \begin{matrix}(3\omega{+}1_{3,4})\\ \gg \Upsilon \succ\\ (\omega{+}1_{1,3,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}1_{4,3,1})\\ \gg \Upsilon \succ\\ (\omega{+}3_{4,3})\end{matrix} (\omega{+}2_{4,1})$$

$$(2\omega{+}1_{1,4}) \begin{matrix}(\omega{+}1_{1,3,4})\\ \gg \Upsilon \succ\\ (3\omega{+}1_{3,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}3_{4,3})\\ \gg \Upsilon \succ\\ (\omega{+}1_{4,3,1})\end{matrix} (\omega{+}2_{4,1})$$

$$(3\omega{+}1_{3,4}) \begin{matrix}(\omega{+}1_{1,3,4})\\ \gg \Upsilon \succ\\ (2\omega{+}1_{1,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}2_{4,1})\\ \gg \Upsilon \succ\\ (\omega{+}1_{4,3,1})\end{matrix} (\omega{+}3_{4,3})$$

$$(3\omega{+}1_{3,4}) \begin{matrix}(2\omega{+}1_{1,4})\\ \gg \Upsilon \succ\\ (\omega{+}1_{1,3,4})\end{matrix} (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \begin{matrix}(\omega{+}1_{4,3,1})\\ \gg \Upsilon \succ\\ (\omega{+}2_{4,1})\end{matrix} (\omega{+}3_{4,3})$$

Medial action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\ \\ (\omega{+}1_{1,3,4})\end{matrix} \times \begin{matrix}(\omega{+}2_{4,1})\\ \\ (\omega{+}1_{4,3,1})\end{matrix} \gg \Upsilon \succ (2\text{-}\omega_{3,2})$$

$$(2\omega+1_{1,4}) \qquad\qquad (\omega+3_{4,3})$$

$$(3\omega_{2,3})\gg\Upsilon \succ \begin{matrix}(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(\omega+1_{4,3,1})\gg\Upsilon \succ (2\text{-}\omega_{3,2})\\(\omega+2_{4,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg\Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(\omega+1_{1,3,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(\omega+1_{4,3,1})\gg\Upsilon \succ (\omega+2_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg\Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(\omega+1_{1,3,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\(\omega+1_{4,3,1})\gg\Upsilon \succ (\omega+2_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(\omega+1_{1,3,4})\\(2\omega+1_{1,4})\end{matrix} \times \begin{matrix}(\omega+2_{4,1})\\(\omega+1_{4,3,1})\gg\Upsilon \succ (\omega+3_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon \succ \begin{matrix}(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\(\omega+1_{4,3,1})\gg\Upsilon \succ (\omega+3_{4,3})\\(\omega+2_{4,1})\end{matrix}$$

Objectal action

$$(3\omega_{2,3})\gg\Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{1,4})\\(\omega+1_{1,3,4})\end{matrix} \times \begin{matrix}(\omega+1_{4,3,1})\\(\omega+2_{4,1})\gg\Upsilon \succ (2\text{-}\omega_{3,2})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega_{2,3})\gg\Upsilon \succ \begin{matrix}(\omega+1_{1,3,4})\\(2\omega+1_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(\omega+2_{4,1})\gg\Upsilon \succ (2\text{-}\omega_{3,2})\\(\omega+1_{4,3,1})\end{matrix}$$

$$(\omega+1_{1,3,4}) \gg\Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(2\omega+1_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(\omega+2_{4,1})\gg\Upsilon \succ (\omega+1_{4,3,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+1_{1,3,4}) \gg\Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{1,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\(\omega+2_{4,1})\gg\Upsilon \succ (\omega+1_{4,3,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \begin{matrix}(3\omega_{2,3})\\ \gg\Upsilon\succ(2\omega+1_{1,4})\\ (\omega+1_{1,3,4})\end{matrix} \times (\omega+2_{4,1}) \begin{matrix}(\omega+1_{4,3,1})\\ \gg\Upsilon\succ(\omega+3_{4,3})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \begin{matrix}(\omega+1_{1,3,4})\\ \gg\Upsilon\succ(2\omega+1_{1,4})\\ (3\omega_{2,3})\end{matrix} \times (\omega+2_{4,1}) \begin{matrix}(2\text{-}\omega_{3,2})\\ \gg\Upsilon\succ(\omega+3_{4,3})\\ (\omega+1_{4,3,1})\end{matrix}$$

Interpretative action

$$(3\omega_{2,3}) \gg\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ(3\omega+1_{3,4})\\ (\omega+1_{1,3,4})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(\omega+1_{4,3,1})\\ \gg\Upsilon\succ(2\text{-}\omega_{3,2})\\ (\omega+2_{4,1})\end{matrix}$$

$$(3\omega_{2,3}) \gg\Upsilon \begin{matrix}(\omega+1_{1,3,4})\\ \succ(3\omega+1_{3,4})\\ (2\omega+1_{1,4})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(\omega+2_{4,1})\\ \gg\Upsilon\succ(2\text{-}\omega_{3,2})\\ (\omega+1_{4,3,1})\end{matrix}$$

$$(\omega+1_{1,3,4}) \begin{matrix}(3\omega_{2,3})\\ \gg\Upsilon\succ(3\omega+1_{3,4})\\ (2\omega+1_{1,4})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(\omega+2_{4,1})\\ \gg\Upsilon\succ(\omega+1_{4,3,1})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+1_{1,3,4}) \begin{matrix}(2\omega+1_{1,4})\\ \gg\Upsilon\succ(3\omega+1_{3,4})\\ (3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(2\text{-}\omega_{3,2})\\ \gg\Upsilon\succ(\omega+1_{4,3,1})\\ (\omega+2_{4,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \begin{matrix}(3\omega_{2,3})\\ \gg\Upsilon\succ(3\omega+1_{3,4})\\ (\omega+1_{1,3,4})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(\omega+1_{4,3,1})\\ \gg\Upsilon\succ(\omega+2_{4,1})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+1_{1,4}) \begin{matrix}(\omega+1_{1,3,4})\\ \gg\Upsilon\succ(3\omega+1_{3,4})\\ (3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \begin{matrix}(2\text{-}\omega_{3,2})\\ \gg\Upsilon\succ(\omega+2_{4,1})\\ (\omega+1_{4,3,1})\end{matrix}$$

4. Pre-semiotic system

$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+2_{1,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ 2\omega+1_{4,1}\ \omega+2_{4,1}\ \omega+3_{4,3})$

Qualitative action

$$(\omega+2_{1,4}) \gg_\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ\\ (2\omega+1_{1,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ\\ (\omega+3_{4,3})\end{matrix} (2\omega+1_{4,1})$$

$$(\omega+2_{1,4}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ\\ (3\omega+1_{3,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ\\ (\omega+2_{4,1})\end{matrix} (2\omega+1_{4,1})$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ\\ (\omega+2_{1,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(2\omega+1_{4,1})\\ \succ\\ (\omega+3_{4,3})\end{matrix} (\omega+2_{4,1})$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(\omega+2_{1,4})\\ \succ\\ (3\omega+1_{3,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{3,4})\\ \succ\\ (2\omega+1_{4,1})\end{matrix} (\omega+2_{4,1})$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(\omega+2_{1,4})\\ \succ\\ (2\omega+1_{1,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ\\ (2\omega+1_{4,1})\end{matrix} (\omega+3_{4,3})$$

$$(3\omega+1_{3,4}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ\\ (\omega+2_{1,4})\end{matrix} (2\omega_{1,2}) \quad \times \quad (1-\omega_{2,1}) \gg_\Upsilon \begin{matrix}(2\omega+1_{4,1})\\ \succ\\ (\omega+2_{4,1})\end{matrix} (\omega+3_{4,3})$$

Medial action

$$(2\omega_{1,2}) \gg_\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ\\ (2\omega+1_{1,4})\end{matrix} (\omega+2_{1,4}) \quad \times \quad (2\omega+1_{4,1}) \gg_\Upsilon \begin{matrix}(\omega+2_{4,1})\\ \succ\\ (\omega+3_{4,3})\end{matrix} (1-\omega_{2,1})$$

$$(2\omega_{1,2}) \gg_\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ\\ (3\omega+1_{3,4})\end{matrix} (\omega+2_{1,4}) \quad \times \quad (2\omega+1_{4,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ\\ (\omega+2_{4,1})\end{matrix} (1-\omega_{2,1})$$

$$(2\omega+1_{1,4}) \gg_\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ\\ (3\omega+1_{3,4})\end{matrix} (\omega+2_{1,4}) \quad \times \quad (2\omega+1_{4,1}) \gg_\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ\\ (1-\omega_{2,1})\end{matrix} (\omega+2_{4,1})$$

$$(2\omega{+}1_{1,4}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}2_{1,4})\\(2\omega_{1,2})\end{matrix} \times (2\omega{+}1_{4,1}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega{+}1_{4,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2\omega_{1,2})\\(\omega{+}2_{1,4})\\(2\omega{+}1_{1,4})\end{matrix} \times (2\omega{+}1_{4,1}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{4,1})\\(2\omega{+}1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{1,4})\\(\omega{+}2_{1,4})\\(2\omega_{1,2})\end{matrix} \times (2\omega{+}1_{4,1}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega{+}1_{4,1})\\(\omega{+}2_{4,1})\end{matrix}$$

Objectal action

$$(2\omega_{1,2}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(2\omega{+}1_{1,4})\\(\omega{+}2_{1,4})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{4,1})\\(1\text{-}\omega_{2,1})\\\omega{+}3_{4,3})\end{matrix}$$

$$(2\omega_{1,2}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{1,4})\\(2\omega{+}1_{1,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{4,3})\\(1\text{-}\omega_{2,1})\\(2\omega{+}1_{4,1})\end{matrix}$$

$$(\omega{+}2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2\omega_{1,2})\\(2\omega{+}1_{1,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{4,3})\\(2\omega{+}1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(\omega{+}2_{1,4}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(2\omega{+}1_{1,4})\\(2\omega_{1,2})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega{+}1_{4,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2\omega_{1,2})\\(2\omega{+}1_{1,4})\\(\omega{+}2_{1,4})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{4,1})\\(\omega{+}3_{4,3})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{1,4})\\(2\omega{+}1_{1,4})\\(2\omega_{1,2})\end{matrix} \times (\omega{+}2_{4,1}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(\omega{+}3_{4,3})\\(2\omega{+}1_{4,1})\end{matrix}$$

Interpretative action

$$(2\omega_{1,2}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{1,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (\omega{+}3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$(\omega+2_{1,4})$ $(\omega+2_{4,1})$

$(2\omega_{1,2})\gg\Upsilon\succ\begin{matrix}(\omega+2_{1,4})\\(3\omega+1_{3,4})\\(2\omega+1_{1,4})\end{matrix}$ × $(\omega+3_{4,3})\gg\Upsilon\succ\begin{matrix}(\omega+2_{4,1})\\(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\end{matrix}$

$(\omega+2_{1,4})\gg\Upsilon\succ\begin{matrix}(2\omega_{1,2})\\(3\omega+1_{3,4})\\(2\omega+1_{1,4})\end{matrix}$ × $(\omega+3_{4,3})\gg\Upsilon\succ\begin{matrix}(\omega+2_{4,1})\\(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$

$(\omega+2_{1,4})\gg\Upsilon\succ\begin{matrix}(2\omega+1_{1,4})\\(3\omega+1_{3,4})\\(2\omega_{1,2})\end{matrix}$ × $(\omega+3_{4,3})\gg\Upsilon\succ\begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\\(\omega+2_{4,1})\end{matrix}$

$(2\omega+1_{1,4})\gg\Upsilon\succ\begin{matrix}(2\omega_{1,2})\\(3\omega+1_{3,4})\\(\omega+2_{1,4})\end{matrix}$ × $(\omega+3_{4,3})\gg\Upsilon\succ\begin{matrix}(2\omega+1_{4,1})\\(\omega+2_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$

$(2\omega+1_{1,4})\gg\Upsilon\succ\begin{matrix}(\omega+2_{1,4})\\(3\omega+1_{3,4})\\(2\omega_{1,2})\end{matrix}$ × $(\omega+3_{4,3})\gg\Upsilon\succ\begin{matrix}(1\text{-}\omega_{2,1})\\(\omega+2_{4,1})\\(2\omega+1_{4,1})\end{matrix}$

5. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+1_{1,4}\ \omega+2_{1,4}\ 3\omega_{2,3})\times(2\text{-}\omega_{3,2}\ 2\omega+1_{4,1}\ \omega+2_{4,1}\ \omega+3_{3,4})$

Qualitative action

$(\omega+2_{1,4})\gg\Upsilon\succ\begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3})\\(2\omega+1_{1,4})\end{matrix}$ × $(2\text{-}\omega_{3,2})\gg\Upsilon\succ\begin{matrix}(\omega+2_{4,1})\\(2\omega+1_{4,1})\\(\omega+3_{4,3})\end{matrix}$

$(\omega+2_{1,4})\gg\Upsilon\succ\begin{matrix}(2\omega+1_{1,4})\\(3\omega_{2,3})\\(3\omega+1_{3,4})\end{matrix}$ × $(2\text{-}\omega_{3,2})\gg\Upsilon\succ\begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1})\\(\omega+2_{4,1})\end{matrix}$

$(2\omega+1_{1,4})\gg\Upsilon\succ\begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3})\\(\omega+2_{1,4})\end{matrix}$ × $(2\text{-}\omega_{3,2})\gg\Upsilon\succ\begin{matrix}(2\omega+1_{4,1})\\(\omega+2_{4,1})\\(\omega+3_{3,4})\end{matrix}$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{1,4})\\(3\omega{+}1_{3,4})\end{matrix} (3\omega_{2,3}) \quad \times \quad (2{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(2\omega{+}1_{4,1})\end{matrix} (\omega{+}2_{4,1})$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{1,4})\\(2\omega{+}1_{1,4})\end{matrix} (3\omega_{2,3}) \quad \times \quad (2{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(2\omega{+}1_{4,1})\end{matrix} (\omega{+}3_{4,3})$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(\omega{+}2_{1,4})\end{matrix} (3\omega_{2,3}) \quad \times \quad (2{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{4,1})\\(\omega{+}2_{4,1})\end{matrix} (\omega{+}3_{4,3})$$

Medial action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(2\omega{+}1_{1,4})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(\omega{+}3_{4,3})\end{matrix} (2{-}\omega_{3,2})$$

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(3\omega{+}1_{3,4})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(\omega{+}2_{4,1})\end{matrix} (2{-}\omega_{3,2})$$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega{+}1_{3,4})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(2{-}\omega_{3,2})\end{matrix} (\omega{+}2_{4,1})$$

$$(2\omega{+}1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(3\omega_{2,3})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2{-}\omega_{3,2})\\(\omega{+}3_{4})\end{matrix} (\omega{+}2_{4,1})$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(2\omega{+}1_{1,4})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{4,1})\\(2{-}\omega_{3,2})\end{matrix} (\omega{+}3_{4,3})$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{1,4})\\(3\omega_{2,3})\end{matrix} (\omega{+}2_{1,4}) \quad \times \quad (2\omega{+}1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2{-}\omega_{3,2})\\(\omega{+}2_{4,1})\end{matrix} (\omega{+}3_{4,3})$$

Objectal action

$$\begin{matrix}(3\omega{+}1_{3,4})\end{matrix} \qquad \begin{matrix}(2\omega{+}1_{4,1})\end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \succ (2\omega+1_{1,4}) \quad (\omega+2_{1,4}) \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ (2-\omega_{3,2}) \quad (\omega+3_{4,3})$$

$$(3\omega_{2,3}) \gg \Upsilon \succ (2\omega+1_{1,4}) \quad (\omega+2_{1,4}) \quad (3\omega+1_{3,4}) \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ (2-\omega_{3,2}) \quad (\omega+3_{4,3}) \quad (2\omega+1_{4,1})$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ (2\omega+1_{1,4}) \quad (3\omega_{2,3}) \quad (3\omega+1_{3,4}) \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ (2\omega+1_{4,1}) \quad (\omega+3_{4,3}) \quad (2-\omega_{3,2})$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ (2\omega+1_{1,4}) \quad (3\omega_{2,3}) \quad (\omega+2_{1,4}) \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ (\omega+2_{4,1}) \quad (2\omega+1_{4,1}) \quad (2-\omega_{3,2})$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ (2\omega+1_{1,4}) \quad (\omega+2_{1,4}) \quad (3\omega_{2,3}) \quad \times \quad (\omega+2_{4,1}) \gg \Upsilon \succ (\omega+3_{4,3}) \quad (2-\omega_{3,2}) \quad (2\omega+1_{4,1})$$

Interpretative action

$$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad (2\omega+1_{1,4}) \quad (\omega+2_{1,4}) \quad \times \quad (\omega+3_{3,4}) \gg \Upsilon \succ (2-\omega_{3,2}) \quad (2\omega+1_{4,1}) \quad (\omega+2_{4,1})$$

$$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad (\omega+2_{1,4}) \quad (2\omega+1_{1,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (2-\omega_{3,2}) \quad (\omega+2_{4,1}) \quad (2\omega+1_{4,1})$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad (3\omega_{2,3}) \quad (2\omega+1_{1,4}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (2\omega+1_{4,1}) \quad (\omega+2_{4,1}) \quad (2-\omega_{3,2})$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ (3\omega+1_{3,4}) \quad (2\omega+1_{1,4}) \quad (3\omega_{2,3}) \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ (2\omega+1_{4,1}) \quad (2-\omega_{3,2}) \quad (\omega+2_{4,1})$$

$$(2\omega{+}1_{1,4}) \gg \curlyvee \succ \begin{matrix}(3\omega_{2,3})\\(3\omega{+}1_{3,4})\\(\omega{+}2_{1,4})\end{matrix} \times (\omega{+}3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{4,1})\\(\omega{+}2_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{1,4})\\(3\omega{+}1_{3,4})\\(3\omega_{2,3})\end{matrix} \times (\omega{+}3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(\omega{+}2_{4,1})\\2\omega{+}1_{4,1})\end{matrix}$$

6. Pre-semiotic dual system

$(3\omega{+}1_{3,4}\ 2\omega{+}1_{1,4}\ \omega{+}3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega{+}1_{4,3}\ \omega{+}2_{4,1}\ \omega{+}3_{4,3})$

Qualitative action

$$(\omega{+}3_{3,4}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(3\omega_{2,3})\\(2\omega{+}1_{1,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{4,1})\\(3\omega{+}1_{4,3})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(\omega{+}3_{3,4}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{1,4})\\(3\omega_{2,3})\\(3\omega{+}1_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{3,4})\\(3\omega{+}1_{4,3})\\(\omega{+}2_{4,1})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{4,3})\\(\omega{+}2_{4,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(2\omega{+}1_{1,4}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{3,4})\\(3\omega_{2,3})\\(3\omega{+}1_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{4,3})\\(\omega{+}2_{4,1})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(\omega{+}3_{3,4})\\(3\omega_{2,3})\\(2\omega{+}1_{1,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{4,1})\\(\omega{+}3_{4,3})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \curlyvee \succ \begin{matrix}(2\omega{+}1_{1,4})\\(3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{4,3})\\(\omega{+}3_{4,3})\\(\omega{+}2_{4,1})\end{matrix}$$

Medial action

$$(3\omega_{2,3}) \gg \curlyvee \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}3_{3,4})\end{matrix} \times (3\omega{+}1_{4,3}) \gg \curlyvee \succ \begin{matrix}(\omega{+}2_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+1_{1,4}) \qquad\qquad (\omega+3_{4,3})$$

$$(3\omega_{2,3})\gg\Upsilon \begin{matrix}(2\omega+1_{1,4})\\ \succ (\omega+3_{3,4})\\ (3\omega+1_{3,4})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (2\text{-}\omega_{3,2})\\ (\omega+2_{4,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \begin{matrix}(3\omega_{2,3})\\ \gg\Upsilon \succ (\omega+3_{3,4})\\ (3\omega+1_{3,4})\end{matrix} \times (3\omega+1_{3,4}) \begin{matrix}(\omega+3_{4,3})\\ \gg\Upsilon \succ (\omega+2_{4,1})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+1_{1,4}) \begin{matrix}(3\omega+1_{3,4})\\ \gg\Upsilon \succ (\omega+3_{3,4})\\ (3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \begin{matrix}(2\text{-}\omega_{3,2})\\ \gg\Upsilon \succ (\omega+2_{4,1})\\ (\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \begin{matrix}(3\omega_{2,3})\\ \gg\Upsilon \succ (\omega+3_{3,4})\\ (2\omega+1_{1,4})\end{matrix} \times (3\omega+1_{4,3}) \begin{matrix}(\omega+2_{4,1})\\ \gg\Upsilon \succ (\omega+3_{4,3})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \begin{matrix}(2\omega+1_{1,4})\\ \gg\Upsilon \succ (\omega+3_{3,4})\\ (3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \begin{matrix}(2\text{-}\omega_{3,2})\\ \gg\Upsilon \succ (\omega+3_{4,3})\\ (\omega+2_{4,1})\end{matrix}$$

Objectal action

$$(3\omega_{2,3})\gg\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ (2\omega+1_{1,4})\\ (\omega+3_{3,4})\end{matrix} \times (\omega+2_{1,4}) \gg\Upsilon \begin{matrix}(3\omega+1_{4,3})\\ \succ (2\text{-}\omega_{3,2})\\ (\omega+3_{4,3})\end{matrix}$$

$$(3\omega_{2,3})\gg\Upsilon \begin{matrix}(\omega+3_{3,4})\\ \succ (2\omega+1_{1,4})\\ (3\omega+1_{3,4})\end{matrix} \times (\omega+2_{4,1}) \gg\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (2\text{-}\omega_{3,2})\\ (3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon \begin{matrix}(3\omega_{2,3})\\ \succ (2\omega+1_{1,4})\\ (3\omega+1_{3,4})\end{matrix} \times (\omega+2_{4,1}) \gg\Upsilon \begin{matrix}(\omega+3_{4,3})\\ \succ (3\omega+1_{4,3})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon \begin{matrix}(3\omega+1_{3,4})\\ \succ (2\omega+1_{1,4})\\ (3\omega_{2,3})\end{matrix} \times (\omega+2_{4,1}) \gg\Upsilon \begin{matrix}(2\text{-}\omega_{3,2})\\ \succ (3\omega+1_{4,3})\\ (\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(2\omega+1_{1,4})\\(\omega+3_{3,4})\end{matrix} \times (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+3_{4,4})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+1_{1,4})\\(3\omega_{2,3})\end{matrix} \times (\omega+2_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(\omega+3_{3,4})\\(3\omega+1_{3,4})\end{matrix}$$

Interpretative action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{1,4})\\(3\omega+1_{3,4})\\(\omega+3_{3,4})\end{matrix} \times (\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\text{-}\omega_{3,2})\\(\omega+2_{4,1})\end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+1_{3,4})\\(2\omega+1_{1,4})\end{matrix} \times (\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{4,1})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{3,4})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+1_{3,4})\\(2\omega+1_{1,4})\end{matrix} \times (\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{4,1})\\(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{1,4})\\(3\omega+1_{3,4})\\(3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(\omega+2_{4,1})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+1_{3,4})\\(\omega+3_{3,4})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+2_{1,4})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+1_{1,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+1_{3,4})\\(3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+2_{4,1})\end{matrix}$$

7. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 2\omega_{1,2}) \times (1\text{-}\omega_{2,1}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ \omega+3_{4,3})$

Qualitative action

$$(\omega+2_{1,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{2,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(2\omega+1_{2,4})\\(3\omega+1_{3,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+1_{2,4})\\(\omega+2_{1,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega+1_{2,4})\\(3\omega+1_{3,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega+1_{2,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(2\omega+1_{2,4})\\(\omega+2_{1,4})\end{matrix} \times (1-\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

Medial action

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(1-\omega_{2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(1-\omega_{2,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(\omega+2_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(2\omega+2_{4,2,1})\\(1-\omega_{2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(\omega+2_{1,4})\\(2\omega_{1,2})\end{matrix} \quad \times \quad (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \quad \times \quad (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(2\omega_{1,2})\end{matrix} \quad \times \quad (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

Objectal action

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(\omega+3_{4,3})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\\(2\omega_{1,2})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

Interpretative action

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\end{matrix} \quad \times \quad (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(\omega+2_{1,4}) \qquad\qquad (2\omega+2_{4,2,1})$$

$$(2\omega_{1,2}) \gg \curlyvee \succ \begin{matrix}(\omega+2_{1,4})\\(3\omega+1_{3,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (\omega+3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\omega+2_{4,2,1})\\(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2\omega_{1,2})\\(3\omega+1_{3,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (\omega+3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\omega+2_{4,2,1})\\(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\\(2\omega_{1,2})\end{matrix} \times (\omega+3_{4,3}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(2\omega_{1,2})\\(3\omega+1_{3,4})\\(\omega+2_{1,4})\end{matrix} \times (\omega+3_{4,3}) \gg \curlyvee \succ \begin{matrix}(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(\omega+2_{1,4})\\(3\omega+1_{3,4})\\(2\omega_{1,2})\end{matrix} \times (\omega+3_{4,3}) \gg \curlyvee \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\end{matrix}$$

8. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ \omega+3_{4,3})$

Qualitative action

$$(\omega+2_{1,4}) \gg \curlyvee \succ \begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3})\\(2\omega+2_{1,2,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\\(\omega+3_{4,3})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \curlyvee \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega_{2,3})\\(3\omega+1_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3})\\(\omega+2_{1,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \curlyvee \succ \begin{matrix}(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(\omega+2_{1,4})\\(2\omega+2_{1,2,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(2-\omega_{3,2}) \gg \Upsilon \succ (2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$\begin{matrix}(\omega+2_{1,4})\\(3\omega+1_{3,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\(2-\omega_{3,2}) \gg \Upsilon \succ (\omega+3_{4,3})\\(2\omega+1_{4,1})\end{matrix}$$

$$\begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(\omega+2_{1,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\(2-\omega_{3,2}) \gg \Upsilon \succ (\omega+3_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3}) \gg \Upsilon \succ (\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (2-\omega_{3,2})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega+2_{1,2,4})\\(3\omega_{2,3}) \gg \Upsilon \succ (\omega+2_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (2-\omega_{3,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\(2\omega+2_{1,2,4}) \gg \Upsilon \succ (\omega+2_{1,4})\\(3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (2\omega+2_{4,2,1})\\(2-\omega_{3,2})\end{matrix}$$

$$\begin{matrix}(3\omega+1_{3,4})\\(2\omega+2_{1,2,4}) \gg \Upsilon \succ (\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2-\omega_{3,2})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (2\omega+2_{4,2,1})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\(3\omega+1_{3,4}) \gg \Upsilon \succ (\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (\omega+3_{4,3})\\(2-\omega_{3,2})\end{matrix}$$

$$\begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4}) \gg \Upsilon \succ (\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2-\omega_{3,2})\\(2\omega+1_{4,1}) \gg \Upsilon \succ (\omega+3_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3}) \gg \Upsilon \succ (2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\(2\omega+2_{4,2,1}) \gg \Upsilon \succ (2-\omega_{3,2})\end{matrix}$$

$$(\omega+2_{1,4}) \qquad\qquad (\omega+3_{4,3})$$

$$\begin{matrix}(\omega+2_{1,4})\\ (3\omega_{2,3})\gg\Upsilon\succ(2\omega+2_{1,2,4})\\ (3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\text{-}\omega_{3,2})\\ (2\omega+1_{4,1})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\ (\omega+2_{1,4})\gg\Upsilon\succ(2\omega+2_{1,2,4})\\ (3\omega+1_{3,4})\end{matrix} \times \begin{matrix}(\omega+3_{4,3})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$\begin{matrix}(3\omega+1_{3,4})\\ (\omega+2_{1,4})\gg\Upsilon\succ(2\omega+2_{1,2,4})\\ (3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\ (3\omega+1_{3,4})\gg\Upsilon\succ(2\omega+2_{1,2,4})\\ (\omega+2_{1,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(\omega+3_{4,3})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$\begin{matrix}(\omega+2_{1,4})\\ (3\omega+1_{3,4})\gg\Upsilon\succ(2\omega+2_{1,2,4})\\ (3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(\omega+3_{4,3})\\ (2\omega+1_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(2\omega+2_{1,2,4})\\ (3\omega_{2,3})\gg\Upsilon\succ(3\omega+1_{3,4})\\ (\omega+2_{1,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\ (\omega+3_{4,3})\gg\Upsilon\succ(2\text{-}\omega_{3,2})\\ (2\omega+2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\omega+2_{1,4})\\ (3\omega_{2,3})\gg\Upsilon\succ(3\omega+1_{3,4})\\ (2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\ (\omega+3_{4,3})\gg\Upsilon\succ(2\text{-}\omega_{3,2})\\ (2\omega+1_{4,1})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\ (\omega+2_{1,4})\gg\Upsilon\succ(3\omega+1_{3,4})\\ (2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\ (\omega+3_{4,3})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (2\text{-}\omega_{3,2})\end{matrix}$$

$$\begin{matrix}(2\omega+2_{1,2,4})\\ (\omega+2_{1,4})\gg\Upsilon\succ(3\omega+1_{3,4})\\ (3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\ (\omega+3_{4,3})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}2_{1,2,4})\end{matrix} \times (\omega{+}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}1_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}2_{1,4})\\(3\omega_{2,3})\end{matrix} \times (\omega{+}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(2\omega{+}1_{4,1})\end{matrix}$$

9. Pre-semiotic dual system

$(3\omega{+}1_{3,4}\ 2\omega{+}2_{1,2,4}\ \omega{+}3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega{+}1_{4,3}\ 2\omega{+}2_{4,2,1}\ \omega{+}3_{4,3})$

Qualitative action

$$(\omega{+}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(2\omega{+}2_{1,2,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}2_{4,2,1})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(\omega{+}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}2_{1,2,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}3_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}3_{4,3})\end{matrix}$$

$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{3,4})\\(3\omega{+}1_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{4,3})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega{+}3_{3,4})\\(2\omega{+}2_{1,2,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}2_{4,2,1})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$(3\omega{+}1_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}2_{1,2,4})\\(\omega{+}3_{3,4})\end{matrix} \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{4,3})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

Medial action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(3\omega{+}1_{3,4})\\(\omega{+}3_{3,4})\end{matrix} \times (3\omega{+}1_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega{+}2_{4,2,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$(2\omega+2_{1,2,4})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})\gg\Upsilon$ $(2\omega+2_{1,2,4})$ $\succ(\omega+3_{3,4})$ $(3\omega+1_{3,4})$ $\times$ $(3\omega+1_{4,3})$ $(\omega+3_{4,3})$ $\gg\Upsilon\succ(2\text{-}\omega_{3,2})$ $(2\omega+2_{4,2,1})$

$(2\omega+2_{1,2,4})\gg\Upsilon$ $(3\omega_{2,3})$ $\succ(\omega+3_{3,4})$ $(3\omega+1_{3,4})$ $\times$ $(3\omega+1_{4,3})$ $(\omega+3_{4,3})$ $\gg\Upsilon\succ(2\omega+2_{4,2,1})$ $(2\text{-}\omega_{3,2})$

$(2\omega+2_{1,2,4})\gg\Upsilon$ $(3\omega+1_{3,4})$ $\succ(\omega+3_{3,4})$ $(3\omega_{2,3})$ $\times$ $(3\omega+1_{4,3})$ $(2\text{-}\omega_{3,2})$ $\gg\Upsilon\succ(2\omega+2_{4,2,1})$ $(\omega+3_{4,3})$

$(3\omega+1_{3,4})\gg\Upsilon$ $(3\omega_{2,3})$ $\succ(\omega+3_{3,4})$ $(2\omega+2_{1,2,4})$ $\times$ $(2\omega+2_{4,2,1})$ $(2\text{-}\omega_{3,2})$ $\gg\Upsilon\succ(\omega+3_{4,3})$ $(2\omega+2_{4,2,1})$

$(3\omega+1_{3,4})\gg\Upsilon$ $(2\omega+2_{1,2,4})$ $\succ(\omega+3_{3,4})$ $(3\omega_{2,3})$ $\times$ $(2\omega+2_{4,2,1})$ $(2\text{-}\omega_{3,2})$ $\gg\Upsilon\succ(\omega+3_{4,3})$ $(2\omega+2_{4,2,1})$

Objective action

$(3\omega_{2,3})\gg\Upsilon$ $(3\omega+1_{3,4})$ $\succ(2\omega+2_{1,2,4})$ $(\omega+3_{3,4})$ $\times$ $(2\omega+2_{4,2,1})$ $(3\omega+1_{4,3})$ $\gg\Upsilon\succ(2\text{-}\omega_{3,2})$ $(\omega+3_{4,3})$

$(3\omega_{2,3})\gg\Upsilon$ $(\omega+3_{3,4})$ $\succ(2\omega+2_{1,2,4})$ $(3\omega+1_{3,4})$ $\times$ $(2\omega+2_{4,2,1})$ $(\omega+3_{4,3})$ $\gg\Upsilon\succ(2\text{-}\omega_{3,2})$ $(3\omega+1_{4,3})$

$(\omega+3_{3,4})\gg\Upsilon$ $(3\omega_{2,3})$ $\succ(2\omega+2_{1,2,4})$ $(3\omega+1_{3,4})$ $\times$ $(2\omega+2_{4,2,1})$ $(\omega+3_{4,3})$ $\gg\Upsilon\succ(3\omega+1_{4,3})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4})\gg\Upsilon$ $(3\omega+1_{3,4})$ $\succ(2\omega+2_{1,2,4})$ $(3\omega_{2,3})$ $\times$ $(2\omega+2_{4,2,1})$ $(2\text{-}\omega_{3,2})$ $\gg\Upsilon\succ(3\omega+1_{4,3})$ $(\omega+3_{4,3})$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(2\omega+2_{1,2,4})\\(\omega+3_{3,4})\end{matrix} \times (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+3_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+2_{1,2,4})\\(3\omega_{2,3})\end{matrix} \times (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(\omega+3_{4,3})\end{matrix}$$

Interpretative action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\\(\omega+3_{3,4})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+1_{3,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+1_{3,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\\(3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+1_{3,4})\\(\omega+3_{3,4})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+3_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+1_{3,4})\\(3\omega_{2,3})\end{matrix} \times (\omega+3_{4,3}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

10. Pre-semiotic dual system

$(3\omega+1_{3,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ \omega+3_{4,3})$

Qualitative action

$$\begin{matrix}(3\omega+1_{3,4})\\(\omega+3_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(2\omega+3_{2,4})\end{matrix}\times\begin{matrix}(3\omega+2_{4,2})\\(2-\omega_{3,2})\gg\Upsilon\succ(3\omega+1_{4,3})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega+3_{2,4})\\(\omega+3_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(3\omega+1_{3,4})\end{matrix}\times\begin{matrix}(\omega+3_{4,3})\\(2-\omega_{3,2})\gg\Upsilon\succ(3\omega+1_{4,3})\\(3\omega+2_{4,2})\end{matrix}$$

$$\begin{matrix}(3\omega+1_{3,4})\\(2\omega+3_{2,4})\gg\Upsilon\succ(3\omega_{2,3})\\(\omega+3_{3,4})\end{matrix}\times\begin{matrix}(3\omega+1_{4,3})\\(2-\omega_{3,2})\gg\Upsilon\succ(3\omega+2_{4,2})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\gg\Upsilon\succ(3\omega_{2,3})\\(3\omega+1_{3,4})\end{matrix}\times\begin{matrix}(\omega+3_{4,3})\\(2-\omega_{3,2})\gg\Upsilon\succ(3\omega+2_{4,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$\begin{matrix}(\omega+3_{3,4})\\(3\omega+1_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(2\omega+3_{2,4})\end{matrix}\times\begin{matrix}(3\omega+2_{4,2})\\(2-\omega_{3,2})\gg\Upsilon\succ(\omega+3_{4,3})\\(3\omega+1_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+1_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(\omega+3_{3,4})\end{matrix}\times\begin{matrix}(3\omega+1_{4,3})\\(2-\omega_{3,2})\gg\Upsilon\succ(\omega+3_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(3\omega+1_{3,4})\\(3\omega_{2,3})\gg\Upsilon\succ(\omega+3_{3,4})\\(2\omega+3_{2,4})\end{matrix}\times\begin{matrix}(3\omega+2_{4,2})\\(3\omega+1_{4,3})\gg\Upsilon\succ(2-\omega_{3,2})\\(\omega+3_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega+3_{2,4})\\(3\omega_{2,3})\gg\Upsilon\succ(\omega+3_{3,4})\\(3\omega+1_{3,4})\end{matrix}\times\begin{matrix}(\omega+3_{4,3})\\(3\omega+1_{4,3})\gg\Upsilon\succ(2-\omega_{3,2})\\(3\omega+2_{4,2})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\gg\Upsilon\succ(\omega+3_{3,4})\\(3\omega+1_{3,4})\end{matrix}\times\begin{matrix}(\omega+3_{4,3})\\(3\omega+1_{4,3})\gg\Upsilon\succ(3\omega+2_{4,2})\\(2-\omega_{3,2})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{3,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(\omega+3_{3,4})\\(2\omega+3_{2,4})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon\succ \begin{matrix}(2\omega+3_{2,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(\omega+3_{4,3})\end{matrix}$$

Objectal action

$$(3\omega_{2,3}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega_{2,3}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\\(3\omega+1_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{4,3})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(3\omega+1_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{4,3})\\(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{3,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(\omega+3_{4,3})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{4,3})\\(\omega+3_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+1_{3,4}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(\omega+3_{4,3})\end{matrix}$$

Interpretative action

$$\begin{matrix}(2\omega+3_{2,4})\end{matrix} \qquad \begin{matrix}(3\omega+1_{4,3})\end{matrix}$$

$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(\omega+3_{3,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (2-\omega_{3,2})$ $(3\omega+2_{4,2})$

$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(\omega+3_{3,4})$ $(2\omega+3_{2,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (2-\omega_{3,2})$ $(3\omega+2_{4,2})$ $(3\omega+1_{4,3})$

$(\omega+3_{3,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(3\omega_{2,3})$ $(2\omega+3_{2,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (3\omega+1_{4,3})$ $(3\omega+2_{4,2})$ $(2-\omega_{3,2})$

$(\omega+3_{3,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(2\omega+3_{2,4})$ $(3\omega_{2,3})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (3\omega+1_{4,3})$ $(3\omega+2_{4,2})$ $(2-\omega_{3,2})$

$(2\omega+3_{2,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(3\omega_{2,3})$ $(\omega+3_{3,4})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (3\omega+1_{4,3})$ $(3\omega+2_{4,2})$ $(2-\omega_{3,2})$

$(2\omega+3_{2,4}) \gg \Upsilon \succ (3\omega+1_{3,4})$ $(\omega+3_{3,4})$ $(3\omega_{2,3})$ × $(\omega+3_{4,3}) \gg \Upsilon \succ (3\omega+2_{4,2})$ $(2-\omega_{3,2})$ $(3\omega+1_{4,3})$

11. Pre-semiotic dual system

$(3\omega+2_{2,4}\ 2\omega+2_{1,2,4}\ \omega+2_{1,4}\ 2\omega_{1,2}) \times (1-\omega_{2,1}\ 2\omega+1_{4,1}\ 2\omega+2_{4,2,1}\ 2\omega+3_{4,2})$

Qualitative action

$(\omega+2_{1,4}) \gg \Upsilon \succ (2\omega_{1,2})$ $(3\omega+2_{2,4})$ $(2\omega+2_{1,2,4})$ × $(1-\omega_{2,1}) \gg \Upsilon \succ (2\omega+1_{4,1})$ $(2\omega+2_{4,2,1})$ $(2\omega+3_{4,2})$

$(\omega+2_{1,4}) \gg \Upsilon \succ (2\omega_{1,2})$ $(2\omega+2_{1,2,4})$ $(3\omega+2_{2,4})$ × $(1-\omega_{2,1}) \gg \Upsilon \succ (2\omega+1_{4,1})$ $(2\omega+3_{4,2})$ $(2\omega+2_{4,2,1})$

$(2\omega+2_{1,2,4}) \gg \Upsilon \succ (2\omega_{1,2})$ $(3\omega+2_{2,4})$ $(\omega+2_{1,4})$ × $(1-\omega_{2,1}) \gg \Upsilon \succ (2\omega+2_{4,2,1})$ $(2\omega+1_{4,1})$ $(2\omega+3_{4,2})$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega_{1,2})\\(3\omega+2_{2,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+2_{1,4})\\(2\omega_{1,2})\\(2\omega+2_{1,2,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+3_{4,2})\\(2\omega+1_{4,1})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(2\omega_{1,2})\\(\omega+2_{1,4})\end{matrix} \times (1\text{-}\omega_{2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

Medial action

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(1\text{-}\omega_{2,1})\\(2\omega+3_{4,2})\end{matrix} :$$

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(3\omega+2_{2,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{4,2})\\(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(\omega+2_{1,4})\\(3\omega+2_{2,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{4,2})\\(1\text{-}\omega_{2,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(\omega+2_{1,4})\\(2\omega_{1,2})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega_{1,2})\\(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{4,2,1})\\(1\text{-}\omega_{2,1})\\(2\omega+3_{4,2})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(2\omega_{1,2})\end{matrix} \times (2\omega+1_{4,1}) \gg \Upsilon \succ \begin{matrix}(1\text{-}\omega_{2,1})\\(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

Objectal action

$$(2\omega_{1,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\end{matrix} \times (2\omega+2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2\omega+1_{4,1})\\(1\text{-}\omega_{2,1})\end{matrix}$$

$$(\omega+2_{1,4}) \qquad\qquad (2\omega+3_{4,2})$$

$$(2\omega_{1,2})\gg\Upsilon \begin{matrix}(\omega+2_{1,4})\\ \succ (2\omega+2_{1,2,4})\\ (3\omega+2_{2,4})\end{matrix} \times \begin{matrix}(2\omega+3_{4,2})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(1\text{-}\omega_{2,1})\\ (2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ (2\omega+2_{1,2,4})\\ (3\omega+2_{2,4})\end{matrix} \times \begin{matrix}(2\omega+3_{4,2})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (1\text{-}\omega_{2,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\Upsilon \begin{matrix}(3\omega+2_{2,4})\\ \succ (2\omega+2_{1,2,4})\\ (2\omega_{1,2})\end{matrix} \times \begin{matrix}(1\text{-}\omega_{2,1})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (2\omega+3_{4,2})\end{matrix}$$

$$(3\omega+2_{2,4})\gg\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ (2\omega+2_{1,2,4})\\ (\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+3_{4,2})\\ (1\text{-}\omega_{2,1})\end{matrix}$$

$$(3\omega+2_{2,4})\gg\Upsilon \begin{matrix}(\omega+2_{1,4})\\ \succ (2\omega+2_{1,2,4})\\ (2\omega_{1,2})\end{matrix} \times \begin{matrix}(1\text{-}\omega_{2,1})\\ (2\omega+2_{4,2,1})\gg\Upsilon\succ(2\omega+3_{4,2})\\ (2\omega+1_{4,1})\end{matrix}$$

Interpretative action

$$(2\omega_{1,2})\gg\Upsilon \begin{matrix}(2\omega+2_{1,2,4})\\ \succ (3\omega+2_{2,4})\\ (\omega+2_{1,4})\end{matrix} \times \begin{matrix}(2\omega+1_{4,1})\\ (2\omega+3_{4,2})\gg\Upsilon\succ(1\text{-}\omega_{2,1})\\ (2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega_{1,2})\gg\Upsilon \begin{matrix}(\omega+2_{1,4})\\ \succ (3\omega+2_{2,4})\\ (2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\ (2\omega+3_{4,2})\gg\Upsilon\succ(1\text{-}\omega_{2,1})\\ (2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\Upsilon \begin{matrix}(2\omega_{1,2})\\ \succ (3\omega+2_{2,4})\\ (2\omega+2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega+2_{4,2,1})\\ (2\omega+3_{4,2})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (1\text{-}\omega_{2,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\Upsilon \begin{matrix}(2\omega+2_{1,2,4})\\ \succ (3\omega+2_{2,4})\\ (2\omega_{1,2})\end{matrix} \times \begin{matrix}(1\text{-}\omega_{2,1})\\ (2\omega+3_{4,2})\gg\Upsilon\succ(2\omega+1_{4,1})\\ (2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega_{1,2}) \qquad\qquad (2\omega{+}1_{4,1})$$
$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega{+}2_{2,4}) \times (2\omega{+}3_{4,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})$$
$$(\omega{+}2_{1,4}) \qquad\qquad (1\text{-}\omega_{2,1})$$

$$(\omega{+}2_{1,4}) \qquad\qquad (1\text{-}\omega_{2,1})$$
$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega{+}2_{2,4}) \times (2\omega{+}3_{4,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})$$
$$(2\omega_{1,2}) \qquad\qquad (2\omega{+}1_{4,1})$$

12. Pre-semiotic dual system

$(3\omega{+}2_{2,4}\ 2\omega{+}2_{1,2,4}\ \omega{+}2_{1,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 2\omega{+}1_{4,1}\ 2\omega{+}2_{4,2,1}\ 2\omega{+}3_{4,2})$

Qualitative action

$$(3\omega{+}2_{2,4}) \qquad\qquad (2\omega{+}2_{4,2,1})$$
$$(\omega{+}2_{1,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}1_{4,1})$$
$$(2\omega{+}2_{1,2,4}) \qquad\qquad (2\omega{+}3_{4,2})$$

$$(2\omega{+}2_{1,2,4}) \qquad\qquad (2\omega{+}3_{4,2})$$
$$(\omega{+}2_{1,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}1_{4,1})$$
$$(3\omega{+}2_{2,4}) \qquad\qquad (2\omega{+}2_{4,2,1})$$

$$(3\omega{+}2_{2,4}) \qquad\qquad (2\omega{+}1_{4,1})$$
$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})$$
$$(\omega{+}2_{1,4}) \qquad\qquad (2\omega{+}3_{4,2})$$

$$(\omega{+}2_{1,4}) \qquad\qquad (2\omega{+}3_{4,2})$$
$$(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})$$
$$(3\omega{+}2_{2,4}) \qquad\qquad (2\omega{+}1_{4,1})$$

$$(\omega{+}2_{1,4}) \qquad\qquad (2\omega{+}2_{4,2,1})$$
$$(3\omega{+}2_{2,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}3_{4,2})$$
$$(2\omega{+}2_{1,2,4}) \qquad\qquad (2\omega{+}1_{4,1})$$

$$(2\omega{+}2_{1,2,4}) \qquad\qquad (2\omega{+}1_{4,1})$$
$$(3\omega{+}2_{2,4}) \gg \Upsilon \succ (3\omega_{2,3}) \times (2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}3_{4,2})$$
$$(\omega{+}2_{1,4}) \qquad\qquad (2\omega{+}2_{4,2,1})$$

Medial action

$$(3\omega{+}2_{2,4}) \qquad\qquad (2\omega{+}2_{4,2,1})$$
$$(3\omega_{2,3}) \gg \Upsilon \succ (\omega{+}2_{1,4}) \times (2\omega{+}1_{4,1}) \gg \Upsilon \succ (2\text{-}\omega_{3,2})$$

$$(2\omega+2_{1,2,4}) \qquad (2\omega+3_{4,2})$$

$$(3\omega_{2,3})\gg\curlyvee\succ\begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(3\omega+2_{2,4})\end{matrix}\times(2\omega+1_{4,1})\gg\curlyvee\succ\begin{matrix}(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4})\gg\curlyvee\succ\begin{matrix}(3\omega_{2,3})\\(\omega+2_{1,4})\\(3\omega+2_{2,4})\end{matrix}\times(2\omega+1_{4,1})\gg\curlyvee\succ\begin{matrix}(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4})\gg\curlyvee\succ\begin{matrix}(3\omega+2_{2,4})\\(\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix}\times(2\omega+1_{4,1})\gg\curlyvee\succ\begin{matrix}(2-\omega_{3,2})\\(2\omega+2_{4,2,1})\\(2\omega+3_{4,2})\end{matrix}$$

$$(3\omega+2_{2,4})\gg\curlyvee\succ\begin{matrix}(3\omega_{2,3})\\(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix}\times(2\omega+1_{4,1})\gg\curlyvee\succ\begin{matrix}(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\\(2\omega+3_{4,2})\end{matrix}$$

$$(3\omega+2_{2,4})\gg\curlyvee\succ\begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix}\times(2\omega+1_{4,1})\gg\curlyvee\succ\begin{matrix}(2-\omega_{3,2})\\(2\omega+2_{4,2,1})\\(2\omega+3_{4,2})\end{matrix}$$

Objectal action

$$(3\omega_{2,3})\gg\curlyvee\succ\begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\end{matrix}\times(2\omega+2_{4,2,1})\gg\curlyvee\succ\begin{matrix}(2\omega+1_{4,1})\\(2-\omega_{3,2})\\(2\omega+3_{4,2})\end{matrix}$$

$$(3\omega_{2,3})\gg\curlyvee\succ\begin{matrix}(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\end{matrix}\times(2\omega+2_{4,2,1})\gg\curlyvee\succ\begin{matrix}(2\omega+3_{4,2})\\(2-\omega_{3,2})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\curlyvee\succ\begin{matrix}(3\omega_{2,3})\\(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\end{matrix}\times(2\omega+2_{4,2,1})\gg\curlyvee\succ\begin{matrix}(2\omega+3_{4,2})\\(2-\omega_{3,2})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4})\gg\curlyvee\succ\begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\\(3\omega_{2,3})\end{matrix}\times(2\omega+2_{4,2,1})\gg\curlyvee\succ\begin{matrix}(2-\omega_{3,2})\\(2\omega+3_{4,2})\\(2\omega+1_{4,1})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ (2\omega+2_{1,2,4}) \times \begin{matrix}(3\omega_{2,3})\\(\omega+2_{1,4})\end{matrix} \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ (2\omega+3_{4,2}) \times \begin{matrix}(2\omega+1_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ (2\omega+2_{1,2,4}) \times \begin{matrix}(\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix} \quad (2\omega+2_{4,2,1}) \gg \Upsilon \succ (2\omega+3_{4,2}) \times \begin{matrix}(2\omega+1_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

Interpretative action

$$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+2_{1,4})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\text{-}\omega_{3,2}) \times \begin{matrix}(2\omega+1_{4,1})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(\omega+2_{1,4})\\(2\omega+2_{1,2,4})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\text{-}\omega_{3,2}) \times \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+1_{4,1})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(3\omega_{2,3})\\(2\omega+2_{1,2,4})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+1_{4,1}) \times \begin{matrix}(2\omega+2_{4,2,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+2_{1,4}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega_{2,3})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+1_{4,1}) \times \begin{matrix}(2\text{-}\omega_{3,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(3\omega_{2,3})\\(\omega+2_{1,4})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+2_{4,2,1}) \times \begin{matrix}(2\omega+1_{4,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ (3\omega+2_{2,4}) \times \begin{matrix}(\omega+2_{1,4})\\(3\omega_{2,3})\end{matrix} \quad (2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+1_{4,1}) \times \begin{matrix}(2\text{-}\omega_{3,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

13. Pre-semiotic system

$$(3\omega+2_{2,4}\ 2\omega+2_{1,2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 2\omega+2_{4,2,1}\ 2\omega+3_{4,2})$$

Qualitative action

$$\begin{matrix}(3\omega{+}2_{2,4})\\(\omega{+}3_{3,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(2\omega{+}2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega{+}2_{4,2,1})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega{+}1_{4,3})\\(2\omega{+}3_{4,2})\end{matrix}$$

$$\begin{matrix}(2\omega{+}2_{1,2,4})\\(\omega{+}3_{3,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(3\omega{+}2_{2,4})\end{matrix} \times \begin{matrix}(2\omega{+}3_{4,2})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega{+}1_{4,3})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(3\omega{+}2_{2,4})\\(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix} \times \begin{matrix}(3\omega{+}1_{4,3})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})\\(3\omega{+}2_{4,2})\end{matrix}$$

$$\begin{matrix}(\omega{+}3_{3,4})\\(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(3\omega{+}2_{2,4})\end{matrix} \times \begin{matrix}(2\omega{+}3_{4,2})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$\begin{matrix}(\omega{+}3_{3,4})\\(3\omega{+}2_{2,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(2\omega{+}2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega{+}2_{4,2,1})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}3_{4,2})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega{+}2_{1,2,4})\\(3\omega{+}2_{2,4}) \gg \Upsilon \succ (3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix} \times \begin{matrix}(3\omega{+}1_{4,3})\\(2{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega{+}3_{4,2})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(3\omega{+}2_{2,4})\\(3\omega_{2,3}) \gg \Upsilon \succ (\omega{+}3_{3,4})\\(2\omega{+}2_{1,2,4})\end{matrix} \times \begin{matrix}(2\omega{+}2_{4,2,1})\\(3\omega{+}1_{4,3}) \gg \Upsilon \succ (2{-}\omega_{3,2})\\(2\omega{+}3_{4,2})\end{matrix}$$

$$\begin{matrix}(2\omega{+}2_{1,2,4})\\(3\omega_{2,3}) \gg \Upsilon \succ (\omega{+}3_{3,4})\\(3\omega{+}2_{2,4})\end{matrix} \times \begin{matrix}(2\omega{+}3_{4,2})\\(3\omega{+}1_{4,3}) \gg \Upsilon \succ (2{-}\omega_{3,2})\\(2\omega{+}2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\(2\omega{+}2_{1,2,4}) \gg \Upsilon \succ (\omega{+}3_{3,4})\\(3\omega{+}2_{2,4})\end{matrix} \times \begin{matrix}(2\omega{+}3_{4,2})\\(3\omega{+}1_{4,3}) \gg \Upsilon \succ (2\omega{+}2_{4,2,1})\\(2{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega+2_{2,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \quad \times \quad (3\omega+1_{4,3}) \gg^{\Upsilon} \succ \begin{matrix}(2-\omega_{3,2})\\(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega_{2,3})\\(\omega+3_{3,4})\\(2\omega+2_{1,2,4})\end{matrix} \quad \times \quad (3\omega+1_{4,3}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2\omega+3_{4,2})\\(2-\omega_{3,2})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+2_{1,2,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \quad \times \quad (3\omega+1_{4,3}) \gg^{\Upsilon} \succ \begin{matrix}(2-\omega_{3,2})\\(2\omega+3_{4,2})\\(2\omega+2_{4,2,1})\end{matrix}$$

Objectal action

$$(3\omega_{2,3}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\\(\omega+3_{3,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega+1_{4,3})\\(2\omega+3_{4,2})\\(2-\omega_{3,2})\end{matrix}$$

$$(3\omega_{2,3}) \gg^{\Upsilon} \succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+3_{4,2})\\(2-\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega_{2,3})\\(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+3_{4,2})\\(2-\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\\(3\omega_{2,3})\end{matrix} \quad \times \quad (2\omega+2_{4,2,1}) \gg^{\Upsilon} \succ \begin{matrix}(2-\omega_{3,2})\\(3\omega+1_{4,3})\\(3\omega+1_{4,3})\end{matrix}$$

$$(3\omega_{2,3}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\\(\omega+3_{3,4})\end{matrix} \quad \times \quad (2\omega+3_{4,2}) \gg^{\Upsilon} \succ \begin{matrix}(1\omega+3_{4,3})\\(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\end{matrix}$$

$$(3\omega_{2,3}) \gg^{\Upsilon} \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\end{matrix} \quad \times \quad (2\omega+3_{4,2}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(3\omega+2_{2,4})\\(2\omega+2_{1,2,4})\\(3\omega_{2,3})\end{matrix} \quad \times \quad (2\omega+3_{4,2}) \gg^{\Upsilon} \succ \begin{matrix}(2\omega+2_{4,2,1})\\(2-\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+2_{1,2,4})\\(3\omega+2_{2,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\(2\omega+3_{4,2}) \gg \Upsilon \succ (3\omega+1_{4,3})\\(2\omega+2_{4,2,1})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+2_{2,4})\\(\omega+3_{3,4})\end{matrix} \times \begin{matrix}(3\omega+1_{4,3})\\(2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+2_{4,2,1})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+2_{2,4})\\(3\omega_{2,3})\end{matrix} \times \begin{matrix}(2\text{-}\omega_{3,2})\\(2\omega+3_{4,2}) \gg \Upsilon \succ (2\omega+2_{4,2,1})\\(3\omega+1_{4,3})\end{matrix}$$

14. Pre-semiotic dual system

$(3\omega+2_{2,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ 2\omega+3_{4,2})$

Qualitative action

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(3\omega_{2,3})\\(2\omega+3_{2,4})\end{matrix} \times \begin{matrix}(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega+1_{4,3})\\(2\omega+3_{4,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{2,4})\\(3\omega_{2,3})\\(3\omega+2_{2,4})\end{matrix} \times \begin{matrix}(2\omega+3_{4,2})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega+1_{4,3})\\(3\omega+2_{4,2})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(3\omega_{2,3})\\(\omega+3_{3,4})\end{matrix} \times \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega+2_{4,2})\\(2\omega+3_{4,2})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega_{2,3})\\(3\omega+2_{2,4})\end{matrix} \times \begin{matrix}(2\omega+3_{4,2})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (3\omega+2_{4,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega_{2,3})\\(2\omega+3_{2,4})\end{matrix} \times \begin{matrix}(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega+3_{4,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{2,4})\\(3\omega_{2,3})\\(\omega+3_{3,4})\end{matrix} \times \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2}) \gg \Upsilon \succ (2\omega+3_{4,2})\\(3\omega+2_{4,2})\end{matrix}$$

Medial action

$$(3\omega_{2,3}) \gg \Upsilon \begin{matrix} (3\omega+2_{2,4}) \\ \succ (\omega+3_{3,4}) \\ (2\omega+3_{2,4}) \end{matrix} \times \begin{matrix} (3\omega+2_{4,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (2-\omega_{3,2}) \\ (2\omega+3_{4,2}) \end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \begin{matrix} (2\omega+3_{2,4}) \\ \succ (\omega+3_{3,4}) \\ (3\omega+2_{2,4}) \end{matrix} \times \begin{matrix} (2\omega+3_{4,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (2-\omega_{3,2}) \\ (3\omega+2_{4,2}) \end{matrix}$$

$$(2\omega+3_{2,4}) \begin{matrix} (3\omega_{2,3}) \\ \gg \Upsilon \succ \omega+3_{3,4}) \\ (3\omega+2_{2,4}) \end{matrix} \times \begin{matrix} (2\omega+3_{4,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (3\omega+2_{4,2}) \\ (2-\omega_{3,2}) \end{matrix}$$

$$(2\omega+3_{2,4}) \begin{matrix} (3\omega+2_{2,4}) \\ \gg \Upsilon \succ (\omega+3_{3,4}) \\ (3\omega_{2,3}) \end{matrix} \times \begin{matrix} (2-\omega_{3,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (3\omega+2_{4,2}) \\ (2\omega+3_{4,2}) \end{matrix}$$

$$(3\omega+2_{2,4}) \begin{matrix} (3\omega_{2,3}) \\ \gg \quad \succ (\omega+3_{3,4}) \\ (2\omega+3_{2,4}) \end{matrix} \times \begin{matrix} (3\omega+2_{4,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (2\omega+3_{4,2}) \\ (2-\omega_{3,2}) \end{matrix}$$

$$(3\omega+2_{2,4}) \begin{matrix} (2\omega+3_{2,4}) \\ \gg \Upsilon \quad \succ (\omega+3_{3,4}) \\ (3\omega_{2,3}) \end{matrix} \times \begin{matrix} (2-\omega_{3,2}) \\ (3\omega+1_{4,3}) \gg \Upsilon \succ (2\omega+3_{4,2}) \\ (3\omega+2_{4,2}) \end{matrix}$$

Objectal action

$$(3\omega_{2,3}) \gg \Upsilon \begin{matrix} (3\omega+2_{2,4}) \\ \succ (2\omega+3_{2,4}) \\ (\omega+3_{3,4}) \end{matrix} \times \begin{matrix} (3\omega+1_{4,3}) \\ (3\omega+2_{4,2}) \gg \Upsilon \succ (2-\omega_{3,2}) \\ (2\omega+3_{4,2}) \end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \begin{matrix} (\omega+3_{3,4}) \\ \succ (2\omega+3_{2,4}) \\ (3\omega+2_{2,4}) \end{matrix} \times \begin{matrix} (2\omega+3_{4,2}) \\ (3\omega+2_{4,2}) \gg \Upsilon \succ (2-\omega_{3,2}) \\ (3\omega+1_{4,3}) \end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \begin{matrix} (3\omega_{2,3}) \\ \succ (2\omega+3_{2,4}) \\ (3\omega+2_{2,4}) \end{matrix} \times \begin{matrix} (2\omega+3_{4,2}) \\ (3\omega+2_{4,2}) \gg \Upsilon \succ (3\omega+1_{4,3}) \\ (2-\omega_{3,2}) \end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{2,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(2\omega+3_{4,2})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(2\omega+3_{4,2})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega+2_{2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

Interpretative action

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{2,4})\\(3\omega+2_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(3\omega_{2,3}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+2_{2,4})\\(2\omega+3_{2,4})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{4,2})\\(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+2_{2,4})\\(2\omega+3_{2,4})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg \Upsilon \succ \begin{matrix}(2\omega+3_{2,4})\\(3\omega+2_{2,4})\\(3\omega_{2,3})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg \Upsilon \succ \begin{matrix}(3\omega_{2,3})\\(3\omega+2_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(3\omega+1_{4,3})\\(2\omega+3_{4,2})\\(2\text{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\omega+3_{3,4})\\(3\omega+2_{2,4})\\(3\omega_{2,3})\end{matrix} \times (2\omega+3_{4,2}) \gg \Upsilon \succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(3\omega+1_{4,3})\end{matrix}$$

15. Pre-semiotic dual system

$$(3\omega+3_{2,3,4}\ 2\omega+3_{2,4}\ \omega+3_{3,4}\ 3\omega_{2,3}) \times (2\text{-}\omega_{3,2}\ 3\omega+1_{4,3}\ 3\omega+2_{4,2}\ 3\omega+3_{4,3,2})$$

Qualitative action

$$\begin{matrix}(3\omega{+}3_{2,3,4})\\(\omega{+}3_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(2\omega{+}3_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}2_{4,2})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}1_{4,3})\\(3\omega{+}3_{4,3,2})\end{matrix}$$

$$\begin{matrix}(2\omega{+}3_{2,4})\\(\omega{+}3_{3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(3\omega{+}3_{2,3,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}3_{4,3,2})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}1_{4,3})\\(3\omega{+}2_{4,2})\end{matrix}$$

$$\begin{matrix}(3\omega{+}3_{2,3,4})\\(2\omega{+}3_{2,4})\gg\Upsilon\succ(3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}1_{4,3})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}2_{4,2})\\(3\omega{+}3_{4,3,2})\end{matrix}$$

$$\begin{matrix}(\omega{+}3_{3,4})\\(2\omega{+}3_{2,4})\gg\Upsilon\succ(3\omega_{2,3})\\(3\omega{+}3_{2,3,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}3_{4,3,2})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}2_{4,2})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$\begin{matrix}(\omega{+}3_{3,4})\\(3\omega{+}3_{2,3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(2\omega{+}3_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}2_{4,2})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}3_{4,3,2})\\(3\omega{+}1_{4,3})\end{matrix}$$

$$\begin{matrix}(2\omega{+}3_{2,4})\\(3\omega{+}3_{2,3,4})\gg\Upsilon\succ(3\omega_{2,3})\\(\omega{+}3_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}1_{4,3})\\(2{-}\omega_{3,2})\gg\Upsilon\succ(3\omega{+}3_{4,3,2})\\(3\omega{+}2_{4,2})\end{matrix}$$

Medial action

$$\begin{matrix}(3\omega{+}3_{2,3,4})\\(3\omega_{2,3})\gg\Upsilon\succ(\omega{+}3_{3,4})\\(2\omega{+}3_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(3\omega{+}2_{4,2})\\(3\omega{+}1_{4,3})\gg\Upsilon\succ(2{-}\omega_{3,2})\\(3\omega{+}3_{4,3,2})\end{matrix}$$

$$\begin{matrix}(2\omega{+}3_{2,4})\\(3\omega_{2,3})\gg\Upsilon\succ(\omega{+}3_{3,4})\\(3\omega{+}2_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(2\omega{+}3_{4,2})\\(3\omega{+}1_{4,3})\gg\Upsilon\succ(2{-}\omega_{3,2})\\(3\omega{+}2_{4,2})\end{matrix}$$

$$\begin{matrix}(3\omega_{2,3})\\(2\omega{+}3_{2,4})\gg\Upsilon\succ(\omega{+}3_{3,4})\\(3\omega{+}2_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(2\omega{+}3_{4,2})\\(3\omega{+}1_{4,3})\gg\Upsilon\succ(3\omega{+}2_{4,2})\\(2{-}\omega_{3,2})\end{matrix}$$

$$(2\omega+3_{2,4}) \gg\Upsilon\succ \begin{matrix}(3\omega+3_{2,3,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(3\omega+3_{4,3,2})\end{matrix}$$

$$(3\omega+3_{2,3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(3\omega+2_{4,2})\\(2\text{-}\omega_{3,2})\\(3\omega+3_{4,3,2})\end{matrix}$$

$$(3\omega+3_{2,3,4}) \gg\Upsilon\succ \begin{matrix}(2\omega+3_{2,4})\\(\omega+3_{3,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+1_{4,3}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+2_{4,2})\\(3\omega+3_{4,3,2})\end{matrix}$$

Objectal action

$$(3\omega_{2,3}) \gg\Upsilon\succ \begin{matrix}(3\omega+3_{2,3,4})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\\(3\omega+3_{4,3,2})\end{matrix}$$

$$(3\omega_{2,3}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\\(3\omega+3_{2,3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+3_{4,3,2})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(3\omega+3_{2,3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+3_{4,3,2})\\(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\end{matrix}$$

$$(\omega+3_{3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega+3_{2,3,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{3,4})\\(3\omega+3_{4,3,2})\end{matrix}$$

$$(3\omega+3_{2,3,4}) \gg\Upsilon\succ \begin{matrix}(3\omega_{2,3})\\(2\omega+3_{2,4})\\(\omega+3_{3,4})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(3\omega+1_{4,3})\\(2\text{-}\omega_{3,2})\\(3\omega+3_{2,3,4})\end{matrix}$$

$$(3\omega+3_{2,3,4}) \gg\Upsilon\succ \begin{matrix}(\omega+3_{3,4})\\(2\omega+3_{2,4})\\(3\omega_{2,3})\end{matrix} \times (3\omega+2_{4,2}) \gg\Upsilon\succ \begin{matrix}(2\text{-}\omega_{3,2})\\(3\omega+1_{4,3})\\(3\omega+3_{4,3,2})\end{matrix}$$

Interpretative action

$$(2\omega+3_{2,4}) \qquad (3\omega+1_{4,3})$$

$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(\omega+3_{3,4})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (2\text{-}\omega_{3,2})$ $(3\omega+2_{4,2})$

$(3\omega_{2,3}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(\omega+3_{3,4})$ $(2\omega+3_{2,4})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (2\text{-}\omega_{3,2})$ $(3\omega+2_{4,2})$ $(3\omega+1_{4,3})$

$(\omega+3_{3,4}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(3\omega_{2,3})$ $(2\omega+3_{2,4})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (3\omega+1_{4,3})$ $(2\text{-}\omega_{3,2})$

$(\omega+3_{3,4}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(2\omega+3_{2,4})$ $(3\omega_{2,3})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (3\omega+2_{4,2})$ $(2\text{-}\omega_{3,2})$

$(2\omega+3_{2,4}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(3\omega_{2,3})$ $(\omega+3_{3,4})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (3\omega+2_{4,2})$ $(3\omega+1_{4,3})$

$(2\omega+3_{2,4}) \gg \Upsilon \succ (3\omega+3_{2,3,4})$ $(\omega+3_{3,4})$ $(3\omega_{2,3})$ $\times$ $(3\omega+3_{4,3,2}) \gg \Upsilon \succ (3\omega+1_{4,3})$ $(2\text{-}\omega_{3,2})$

Chapter Four: The Quadralectic Night

Notation:
oS ↔ Q (.0.) ↔ oI ↔ ⌊

sO ↔ M (.1.) ↔ iO ↔ ⌋
oO ↔ O (.2.) ↔ oO ↔ ⌜
sS ↔ I (.3.) ↔ iI ↔ ⌝

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
(⌝ ⌋ $_{3,4}$ ⌜⌋ $_{1,4}$ ⌋ ⌋ $_{1,3,4}$ ⌊⌋ $_{1,3}$) × (⌝ ⌊$_{3,1}$ ⌋ ⌋ $_{4,3,1}$ ⌋ ⌜$_{4,1}$ ⌋ ⌝ $_{4,3}$)

Qualitative action

(⌜⌋ $_{1,4}$) (⌋ ⌋ $_{4,3,1}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌋ ⌋ $_{1,3,4}$) (⌋ ⌜$_{4,1}$)

(⌝ ⌋ $_{3,4}$) (⌋ ⌋ $_{4,3,1}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌋ ⌋ $_{1,3,4}$) (⌋ ⌝ $_{4,3}$)

(⌋ ⌋ $_{1,3,4}$) (⌋ ⌜$_{4,1}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌜⌋ $_{1,4}$) (⌋ ⌋ $_{4,3,1}$)

(⌝ ⌋ $_{3,4}$) (⌋ ⌜$_{4,1}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌜⌋ $_{1,4}$) (⌋ ⌝ $_{4,3}$)

(⌋ ⌋ $_{1,3,4}$) (⌋ ⌝ $_{4,3}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌝ ⌋ $_{3,4}$) (⌋ ⌋ $_{4,3,1}$)

(⌜⌋ $_{1,4}$) (⌋ ⌝ $_{4,3}$)
ʌ ≫ (⌊⌋ $_{1,3}$) × ʌ ≫ (⌝ ⌊$_{3,1}$)
(⌝ ⌋ $_{3,4}$) (⌋ ⌜$_{4,1}$)

Medial action

(⌜⌋ $_{1,4}$) (⌝ ⌊$_{3,1}$)
ʌ ≫ (⌋ ⌋ $_{1,3,4}$) × ʌ ≫ (⌋ ⌋ $_{4,3,1}$)

$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,1})$
$\curlywedge \gg (\lrcorner\ \lrcorner_{1,3,4})$ × $\curlywedge \gg (\lrcorner\ \lrcorner_{4,3,1})$
$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\lrcorner\ \lrcorner_{1,3,4})$ × $\curlywedge \gg (\lrcorner\ \lrcorner_{4,3,1})$
$(\ulcorner\lrcorner\ _{1,4})$ $(\urcorner\ \llcorner_{3,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\lrcorner\ \lrcorner_{1,3,4})$ × $\curlywedge \gg (\lrcorner\ \lrcorner_{4,3,1})$
$(\ulcorner\lrcorner\ _{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \lrcorner_{1,3,4})$ × $\curlywedge \gg (\lrcorner\ \lrcorner_{4,3,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,1})$

$(\ulcorner\lrcorner\ _{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \lrcorner_{1,3,4})$ × $\curlywedge \gg (\lrcorner\ \lrcorner_{4,3,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

Objectal action

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\urcorner\ \llcorner_{3,1})$
$\curlywedge \gg (\ulcorner\lrcorner\ _{1,4})$ × $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,1})$
$\curlywedge \gg (\ulcorner\lrcorner\ _{1,4})$ × $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\lrcorner\ _{1,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\ulcorner\lrcorner\ _{1,4})$ × $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\urcorner\ \llcorner_{3,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\ulcorner\lrcorner\ _{1,4})$ × $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \urcorner_{4,3})$

(⅃ ⅃ 1,3,4)
人 ≫ (⌈⅃ 1,4) × 人 ≫ (⅃ ⌈4,1)
(⅂ ⅃ 3,4)

(⅃ ⅂ 4,3)
(⅃ ⅃ 4,3,1)

(⌊⅃ 1,3)
人 ≫ (⌈⅃ 1,4) × 人 ≫ (⅃ ⌈4,1)
(⅂ ⅃ 3,4)

(⅃ ⅂ 4,3)
(⅂ ⌊3,1)

Interpretative action

(⌈⅃ 1,4) (⅂ ⌊3,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⌊⅃ 1,3) (⅃ ⌈4,1)

(⅃ ⅃ 1,3,4) (⅂ ⌊3,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⌊⅃ 1,3) (⅃ ⅃ 4,3,1)

(⌈⅃ 1,4) (⅃ ⅃ 4,3,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⅃ ⅃ 1,3,4) (⅃ ⌈4,1)

(⌊⅃ 1,3) (⅃ ⅃ 4,3,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⅃ ⅃ 1,3,4) (⅂ ⌊3,1)

(⅃ ⅃ 1,3,4) (⅃ ⌈4,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⌈⅃ 1,4) (⅃ ⅃ 4,3,1)

(⌊⅃ 1,3) (⅃ ⌈4,1)
人 ≫ (⅂ ⅃ 3,4) × 人 ≫ (⅃ ⅂ 4,3)
(⌈⅃ 1,4) (⅂ ⌊3,1)

2. Pre-semiotic dual system

(⅂ ⅃ 3,4 ⌈⅃ 1,4 ⅃ ⅃ 1,3,4 ⌊⌈1,2) × (⌈⌊2,1 ⅃ ⅃ 4,3,1 ⅃ ⌈4,1 ⅃ ⅂ 4,3)

Qualitative action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \lrcorner_{4,3,1}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \lrcorner_{4,3,1}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ \curlywedge\gg(\llcorner\ulcorner_{1,2}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ \curlywedge\gg(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\llcorner_{2,1}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\llcorner_{2,1}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge\gg(\lrcorner\ \lrcorner_{4,3,1}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

(⌉ ⌋ $_{3,4}$)		(⌋ ⌈ $_{4,1}$)
人 ≫ (⌋ ⌋ $_{1,3,4}$)	×	人 ≫ (⌋ ⌋ $_{4,3,1}$)
(⌈⌋ $_{1,4}$)		(⌋ ⌉ $_{4,3}$)

(⌊ ⌈ $_{1,2}$)		(⌋ ⌉ $_{4,3}$)
人 ≫ (⌋ ⌋ $_{1,3,4}$)	×	人 ≫ (⌋ ⌋ $_{4,3,1}$)
(⌉ ⌋ $_{3,4}$)		(⌈ ⌊ $_{2,1}$)

(⌈⌋ $_{1,4}$)		(⌋ ⌉ $_{4,3}$)
人 ≫ (⌋ ⌋ $_{1,3,4}$)	×	人 ≫ (⌋ ⌋ $_{4,3,1}$)
(⌉ ⌋ $_{3,4}$)		(⌋ ⌈ $_{4,1}$)

Objectal action

(⌋ ⌋ $_{1,3,4}$)		(⌈ ⌊ $_{2,1}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌊ ⌈ $_{1,2}$)		(⌋ ⌋ $_{4,3,1}$)

(⌉ ⌋ $_{3,4}$)		(⌈ ⌊ $_{2,1}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌊ ⌈ $_{1,2}$)		(⌋ ⌉ $_{4,3}$)

(⌊ ⌈ $_{1,2}$)		(⌋ ⌋ $_{4,3,1}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌋ ⌋ $_{1,3,4}$)		(⌈ ⌊ $_{2,1}$)

(⌉ ⌋ $_{3,4}$)		(⌋ ⌋ $_{4,3,1}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌋ ⌋ $_{1,3,4}$)		(⌋ ⌉ $_{4,3}$)

(⌋ ⌋ $_{1,3,4}$)		(⌋ ⌉ $_{4,3}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌉ ⌋ $_{3,4}$)		(⌋ ⌋ $_{4,3,1}$)

(⌊ ⌈ $_{1,2}$)		(⌋ ⌉ $_{4,3}$)
人 ≫ (⌈⌋ $_{1,4}$)	×	人 ≫ (⌋ ⌈ $_{4,1}$)
(⌉ ⌋ $_{3,4}$)		(⌈ ⌊ $_{2,1}$)

Interpretative action

(⌈⌋ $_{1,4}$)		(⌈ ⌊ $_{2,1}$)

$$\begin{array}{ccc} \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\llcorner \ulcorner_{1,2}) & & (\lrcorner \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\urcorner \lrcorner_{4,3}) \\ (\llcorner \ulcorner_{1,2}) & & (\llcorner \ulcorner_{1,2}) \end{array}$$

$$\begin{array}{ccc} (\ulcorner \lrcorner_{1,4}) & & (\lrcorner \lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner \ulcorner_{1,2}) & & (\lrcorner \lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\lrcorner \lrcorner_{1,3,4}) & & (\ulcorner \llcorner_{2,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\ulcorner \lrcorner_{1,4}) & & (\lrcorner \lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner \ulcorner_{1,2}) & & (\lrcorner \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\ulcorner \lrcorner_{1,4}) & & (\ulcorner \llcorner_{2,1}) \end{array}$$

3. Pre-semiotic dual system

$(\urcorner \lrcorner_{3,4} \ulcorner \lrcorner_{1,4} \lrcorner \lrcorner_{1,3,4} \llcorner \urcorner_{2,3}) \times (\urcorner \llcorner_{3,2} \lrcorner \lrcorner_{4,3,1} \lrcorner \ulcorner_{4,1} \lrcorner \urcorner_{4,3})$

Qualitative Action

$$\begin{array}{ccc} (\ulcorner \lrcorner_{1,4}) & & (\lrcorner \lrcorner_{4,3,1}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\urcorner \lrcorner_{3,4}) & & (\lrcorner \lrcorner_{4,3,1}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \urcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \lrcorner_{1,3,4}) & & (\lrcorner \ulcorner_{4,1}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\ulcorner \lrcorner_{1,4}) & & (\lrcorner \lrcorner_{4,3,1}) \end{array}$$

(⌝⌟$_{3,4}$)　　(⌟⌜$_{4,1}$)
　　ʌ≫(⌞⌝$_{2,3}$)　×　　ʌ≫(⌝⌞$_{3,2}$)
(⌜⌟$_{1,4}$)　　(⌟⌝$_{4,3}$)

(⌟⌟$_{1,3,4}$)　　(⌟⌝$_{4,3}$)
　　ʌ≫(⌞⌝$_{2,3}$)　×　　ʌ≫(⌝⌞$_{3,2}$)
(⌝⌟$_{3,4}$)　　(⌟⌟$_{4,3,1}$)

(⌜⌟$_{1,4}$)　　(⌟⌝$_{4,3}$)
　　ʌ≫(⌞⌝$_{2,3}$)　×　　ʌ≫(⌝⌞$_{3,2}$)
(⌝⌟$_{3,4}$)　　(⌟⌜$_{4,1}$)

Medial action

(⌜⌟$_{1,4}$)　　(⌝⌞$_{3,2}$)
　　ʌ≫(⌟⌟$_{1,3,4}$)　×　　ʌ≫(⌟⌟$_{4,3,1}$)
(⌞⌝$_{2,3}$)　　(⌟⌜$_{4,1}$)

(⌝⌟$_{3,4}$)　　(⌝⌞$_{3,2}$)
　　ʌ≫(⌟⌟$_{1,3,4}$)　×　　ʌ≫(⌟⌟$_{4,3,1}$)
(⌞⌝$_{2,3}$)　　(⌟⌝$_{4,3}$)

(⌞⌝$_{2,3}$)　　(⌟⌜$_{4,1}$)
　　ʌ≫(⌟⌟$_{1,3,4}$)　×　　ʌ≫(⌟⌟$_{4,3,1}$)
(⌜⌟$_{1,4}$)　　(⌝⌞$_{3,2}$)

(⌝⌟$_{3,4}$)　　(⌟⌝$_{4,3}$)
　　ʌ≫(⌟⌟$_{1,3,4}$)　×　　ʌ≫(⌟⌟$_{4,3,1}$)
(⌞⌝$_{2,3}$)　　(⌟⌜$_{4,1}$)

(⌜⌟$_{1,4}$)　　(⌟⌝$_{4,3}$)
　　ʌ≫(⌟⌟$_{1,3,4}$)　×　　ʌ≫(⌟⌟$_{4,3,1}$)
(⌝⌟$_{3,4}$)　　(⌟⌜$_{4,1}$)

Objectal action

(⌟⌟$_{1,3,4}$)　　(⌝⌞$_{3,2}$)
　　ʌ≫(⌜⌟$_{1,4}$)　×　　ʌ≫(⌟⌜$_{4,1}$)

$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\urcorner\ \llcorner_{3,2})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \urcorner_{3,4})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,2})$

Interpretative action

$(\ulcorner\lrcorner_{1,4})$ $(\urcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\urcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\urcorner\ \llcorner_{3,2})$

(⌟ ⌟ 1,3,4)
    ⅄ ≫ (⌝ ⌟ 3,4)
(⌜⌟ 1,4)

×

(⌟ ⌜4,1)
    ⅄ ≫ (⌟ ⌝ 4,3)
(⌟ ⌟ 4,3,1)

(⌞⌝ 2,3)
    ⅄ ≫ (⌝ ⌟ 3,4)
(⌜⌟ 1,4)

×

(⌟ ⌜4,1)
    ⅄ ≫ (⌟ ⌝ 4,3)
(⌝ ⌞3,2)

4. Pre-semiotic dual system

(⌝ ⌟ 3,4 ⌜⌟ 1,4 ⌟ ⌜1,4 ⌞ ⌜1,2) × (⌜ ⌞2,1 ⌜⌟ 4,1 ⌟ ⌜4,1 ⌟ ⌝ 4,3)

Qualitative action

(⌜⌟ 1,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌟ ⌜1,4)

×

(⌜⌟ 4,1)
    ⅄ ≫ (⌜ ⌞2,1)
(⌟ ⌜4,1)

(⌝ ⌟ 3,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌟ ⌜1,4)

×

(⌜⌟ 4,1)
    ⅄ ≫ (⌜ ⌞2,1)
(⌟ ⌝ 4,3)

(⌟ ⌜1,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌜⌟ 1,4)

×

(⌟ ⌜4,1)
    ⅄ ≫ (⌜ ⌞2,1)
(⌜⌟ 4,1)

(⌝ ⌟ 3,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌜⌟ 1,4)

×

(⌟ ⌜4,1)
    ⅄ ≫ (⌜ ⌞2,1)
(⌟ ⌝ 4,3)

(⌟ ⌜1,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌝ ⌟ 3,4)

×

(⌟ ⌝ 4,3)
    ⅄ ≫ (⌜ ⌞2,1)
(⌜⌟ 4,1)

(⌜⌟ 1,4)
    ⅄ ≫ (⌞ ⌜1,2)
(⌝ ⌟ 3,4)

×

(⌟ ⌝ 4,3)
    ⅄ ≫ (⌜ ⌞2,1)
(⌟ ⌜4,1)

Medial action

(⌜⌟ 1,4)
    ⅄ ≫ (⌟ ⌜1,4)

×

(⌜ ⌞2,1)
    ⅄ ≫ (⌜⌟ 4,1)

(└ ┌$_{1,2}$)		(┘ ┌$_{4,1}$)

(┐ ┘$_{3,4}$)		(┌ └$_{2,1}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(└ ┌$_{1,2}$)		(┘ ┐$_{4,3}$)

(└ ┌$_{1,2}$)		(┘ ┌$_{4,1}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┌┘$_{1,4}$)		(┌ └$_{2,1}$)

(┐ ┘$_{3,4}$)		(┘ ┌$_{4,1}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┌┘$_{1,4}$)		(┘ ┐$_{4,3}$)

(└ ┌$_{1,2}$)		(┘ ┐$_{4,3}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┐ ┘$_{3,4}$)		(┌ └$_{2,1}$)

(┌┘$_{1,4}$)		(┘ ┐$_{4,3}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┐ ┘$_{3,4}$)		(┘ ┌$_{4,1}$)

Objectal action

(┘ ┌$_{1,4}$)		(┌ └$_{2,1}$)
人 ≫ (┌┘$_{1,4}$)	×	人 ≫ (┘ ┌$_{4,1}$)
(└ ┌$_{1,2}$)		(┌┘$_{4,1}$)

(┐ ┘$_{3,4}$)		(┌ └$_{2,1}$)
人 ≫ (┌┘$_{1,4}$)	×	人 ≫ (┘ ┌$_{4,1}$)
(└ ┌$_{1,2}$)		(┘ ┐$_{4,3}$)

(└ ┌$_{1,2}$)		(┌┘$_{4,1}$)
人 ≫ (┌┘$_{1,4}$)	×	人 ≫ (┘ ┌$_{4,1}$)
(┘ ┌$_{1,4}$)		(┌ └$_{2,1}$)

(┐ ┘$_{3,4}$)		(┌┘$_{4,1}$)
人 ≫ (┌┘$_{1,4}$)	×	人 ≫ (┘ ┌$_{4,1}$)
(┘ ┌$_{1,4}$)		(┘ ┐$_{4,3}$)

(⌟ ⌜1,4) (⌟ ⌝4,3)
  ⅄ ≫ (⌜⌟ 1,4) × ⅄ ≫ (⌟ ⌜4,1)
(⌝ ⌟3,4) (⌜⌟ 4,1)

(⌞⌜1,2) (⌟ ⌝4,3)
  ⅄ ≫ (⌜⌟ 1,4) × ⅄ ≫ (⌟ ⌜4,1)
(⌝ ⌟3,4) (⌜ ⌞2,1)

Interpretative action

(⌜⌟ 1,4) (⌜ ⌞2,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌞⌜1,2) (⌟ ⌜4,1)

(⌟ ⌜1,4) (⌜ ⌞2,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌞⌜1,2) (⌜⌟ 4,1)

(⌜⌟ 1,4) (⌜⌟ 4,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌟ ⌜1,4) (⌟ ⌜4,1)

(⌞⌜1,2) (⌜⌟ 4,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌟ ⌜1,4) (⌜ ⌞2,1)

(⌟ ⌜1,4) (⌟ ⌜4,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌜⌟ 1,4) (⌜⌟ 4,1)

(⌞⌜1,2) (⌟ ⌜4,1)
  ⅄ ≫ (⌝ ⌟3,4) × ⅄ ≫ (⌟ ⌝4,3)
(⌜⌟ 1,4) (⌜ ⌞2,1)

5. Pre-Semiotic dual system
(⌝ ⌟3,4 ⌜⌟ 1,4 ⌟ ⌜1,4 ⌞⌝ 2,3) × (⌝ ⌞3,2 ⌜⌟ 4,1 ⌟ ⌜4,1 ⌟ ⌝ 4,3)

Qualtitative action

$$\begin{array}{lcl} (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \ulcorner_{4,1})| \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\urcorner\lrcorner_{3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\urcorner_{4,3}) \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\urcorner_{4,3}) \\ \quad \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Medial action

$$\begin{array}{lcl} (\ulcorner\lrcorner_{1,4}) & & (\urcorner\ \llcorner_{3,2}) \\ \quad \curlywedge \gg (\lrcorner\ \ulcorner_{1,4}) & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\urcorner\lrcorner_{3,4}) & & (\urcorner\ \llcorner_{3,2}) \\ \quad \curlywedge \gg (\lrcorner\ \ulcorner_{1,4}) & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\llcorner\urcorner_{2,3}) & & (\lrcorner\ \ulcorner_{4,1}) \\ \quad \curlywedge \gg (\lrcorner\ \ulcorner_{1,4}) & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\lrcorner_{1,4}) & & (\urcorner\ \llcorner_{3,2}) \end{array}$$

$(\urcorner\ \lrcorner_{3,4})$
$\curlywedge \gg (\lrcorner\ \ulcorner_{1,4})$ $\times$ $\curlywedge \gg (\ulcorner\lrcorner_{4,1})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \ulcorner_{1,4})$ $\times$ $\curlywedge \gg (\ulcorner\lrcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,2})$

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \ulcorner_{1,4})$ $\times$ $\curlywedge \ulcorner\lrcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

Objectal action

$(\lrcorner\ \ulcorner_{1,4})$ $(\urcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\llcorner\urcorner_{2,3})$ $(\ulcorner\lrcorner_{4,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$

$(\llcorner\urcorner_{2,3})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\urcorner\ \llcorner_{3,2})$

$(\urcorner\ \lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\ulcorner\lrcorner_{1,4})$ $\times$ $\curlywedge \gg (\lrcorner\ \ulcorner_{4,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \llcorner_{3,2})$

Interpretative action

$(\ulcorner\lrcorner_{1,4})$ $(\urcorner\ \llcorner_{3,2})$

$$\begin{matrix} \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{matrix} \times \begin{matrix} \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\ulcorner_{4,1}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\ulcorner_{1,4}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{matrix} \times \begin{matrix} (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \end{matrix}$$

$$\begin{matrix} (\ulcorner\lrcorner_{1,4}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\lrcorner\ulcorner_{1,4}) \end{matrix} \times \begin{matrix} (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\ulcorner_{4,1}) \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\lrcorner\ulcorner_{1,4}) \end{matrix} \times \begin{matrix} (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\urcorner\llcorner_{3,2}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\ulcorner_{1,4}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{matrix} \times \begin{matrix} (\lrcorner\ulcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{matrix} \times \begin{matrix} (\lrcorner\ulcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\urcorner\llcorner_{3,2}) \end{matrix}$$

6. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\lrcorner\ \ulcorner_{4,1}\lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{matrix} (\ulcorner\lrcorner_{1,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4}) \end{matrix} \times \begin{matrix} (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{matrix}$$

$$\begin{matrix} (\urcorner\lrcorner_{3,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4}) \end{matrix} \times \begin{matrix} (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\urcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \end{matrix} \times \begin{matrix} (\lrcorner\ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{4,3}) \end{matrix}$$

(⌝ ⌟ $_{3,4}$) (⌟ ⌜$_{4,1}$)
人 ≫ (⌞⌝ $_{2,3}$) × 人 ≫ (⌝ ⌞$_{3,2}$)
(⌜⌟ $_{1,4}$) (⌟ ⌝ $_{4,3}$)

(⌟ ⌝ $_{3,4}$) (⌟ ⌝ $_{4,3}$)
人 ≫ (⌞⌝ $_{2,3}$) × 人 ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌟ $_{3,4}$) (⌝ ⌟ $_{4,3}$)

(⌜⌟ $_{1,4}$) (⌟ ⌝ $_{4,3}$)
人 ≫ (⌞⌝ $_{2,3}$) × 人 ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌟ $_{3,4}$) (⌟ ⌜$_{4,1}$)

Medial action

(⌜⌟ $_{1,4}$) (⌝ ⌞$_{3,2}$)
人 ≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌞⌝ $_{2,3}$) (⌟ ⌜$_{4,1}$)

(⌝ ⌟ $_{3,4}$) (⌝ ⌞$_{3,2}$)
人 ≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌞⌝ $_{2,3}$) (⌟ ⌝ $_{4,3}$)

(⌞⌝ $_{2,3}$) (⌟ ⌜$_{4,1}$)
≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌜⌟ $_{1,4}$) (⌝ ⌞$_{3,2}$)

(⌝ ⌟ $_{3,4}$) (⌟ ⌜$_{4,1}$)
人 ≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌜⌟ $_{1,4}$) (⌟ ⌝ $_{4,3}$)

(⌞⌝ $_{2,3}$) (⌟ ⌝ $_{4,3}$)
人 ≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌝ ⌟ $_{3,4}$) (⌝ ⌞$_{3,2}$)

(⌜⌟ $_{1,4}$) (⌟ ⌝ $_{4,3}$)
人 ≫ (⌟ ⌝ $_{3,4}$) × 人 ≫ (⌝ ⌟ $_{4,3}$)
(⌝ ⌟ $_{3,4}$) (⌟ ⌜$_{4,1}$)

Objectal action

(⌟ ⌝ $_{3,4}$) (⌝ ⌞$_{3,2}$)

$$\begin{array}{lcl} \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{array}$$

$$\begin{array}{lcl} (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ulcorner_{4,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{array}$$

Interpretative action

$$\begin{array}{lcl} (\ulcorner\lrcorner_{1,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\ulcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lcl} (\ulcorner\lrcorner_{1,4}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\lrcorner\ulcorner_{4,1}) \end{array}$$

$$\begin{array}{lcl} (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{array}$$

(┘ ┐ $_{3,4}$) (┘ ┌$_{4,1}$)
人 ≫ (┐ ┘ $_{3,4}$) × 人 ≫ (┘ ┐ $_{4,3}$)
(┌┘ $_{1,4}$) (┐ ┘ $_{4,3}$)

(└┐ $_{2,3}$) (┘ ┌$_{4,1}$)
人 ≫ (┐ ┘ $_{3,4}$) × 人 ≫ (┘ ┐ $_{4,3}$)
(┌┘ $_{1,4}$) (┐ └$_{3,2}$)

7. Pre-semiotic dual system

(┐ ┘ $_{3,4}$ ┌ ┌$_{1,2,4}$ ┘ ┌$_{1,4}$ └ ┌$_{1,2}$) × (┌ └$_{2,1}$ ┌┘ $_{4,1}$ ┌ ┌$_{4,2,1}$ ┘ ┐ $_{4,3}$)

Qualitative action

(┌ ┌$_{1,2,4}$) (┌┘ $_{4,1}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┘ ┌$_{1,4}$) (┌ ┌$_{4,2,1}$)

(┐ ┘ $_{3,4}$) (┌┘ $_{4,1}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┘ ┌$_{1,4}$) (┘ ┐ $_{4,3}$)

(┘ ┌$_{1,4}$) (┌ ┌$_{4,2,1}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┌ ┌$_{1,2,4}$) (┌┘ $_{4,1}$)

(┐ ┘ $_{3,4}$) (┌ ┌$_{4,2,1}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┌ ┌$_{1,2,4}$) (┘ ┐ $_{4,3}$)

(┘ ┌$_{1,4}$) (┘ ┐ $_{4,3}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┐ ┘ $_{3,4}$) (┌┘ $_{4,1}$)

(┌ ┌$_{1,2,4}$) (┘ ┐ $_{4,3}$)
人 ≫ (└ ┌$_{1,2}$) × 人 ≫ (┌ └$_{2,1}$)
(┐ ┘ $_{3,4}$) (┌ ┌$_{4,2,1}$)

Medial action

(┌ ┌$_{1,2,4}$) (┌ └$_{2,1}$)
人 ≫ (┘ ┌$_{1,4}$) × 人 ≫ (┌┘ $_{4,1}$)

$(\lfloor \lceil_{1,2})$ $(\lceil \lceil_{4,2,1})$

$(\rceil \rfloor_{3,4})$ $(\lceil \lfloor_{2,1})$
$\curlywedge \gg (\rfloor \lceil_{1,4}) \quad \times \quad \curlywedge \gg (\lceil \rfloor_{4,1})$
$(\lfloor \lceil_{1,2})$ $(\rfloor \rceil_{4,3})$

$(\lfloor \lceil_{1,2})$ $(\lceil \lceil_{4,2,1})$
$\curlywedge \gg (\rfloor \lceil_{1,4}) \quad \times \quad \curlywedge \gg (\lceil \rfloor_{4,1})$
$(\lceil \lceil_{1,2,4})$ $(\lceil \lfloor_{2,1})$

$(\rceil \rfloor_{3,4})$ $(\lceil \lceil_{4,2,1})$
$\curlywedge \gg (\rfloor \lceil_{1,4}) \quad \times \quad \curlywedge \gg (\lceil \rfloor_{4,1})$
$(\lceil \lceil_{1,2,4})$ $(\rfloor \rceil_{4,3})$

$(\lfloor \lceil_{1,2})$ $(\rfloor \rceil_{4,3})$
$\curlywedge \gg (\rfloor \lceil_{1,4}) \quad \times \quad \curlywedge \gg (\lceil \rfloor_{4,1})$
$(\rceil \rfloor_{3,4})$ $(\lceil \lfloor_{2,1})$

$(\lceil \lceil_{1,2,4})$ $(\rfloor \rceil_{4,3})$
$\curlywedge \gg (\rfloor \lceil_{1,4}) \quad \times \quad \curlywedge \gg (\lceil \rfloor_{4,1})$
$(\rceil \rfloor_{3,4})$ $(\lceil \lceil_{4,2,1})$

Objectal action

$(\rfloor \lceil_{1,4})$ $(\lceil \lfloor_{2,1})$
$\curlywedge \gg (\lceil \lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil \lceil_{4,2,1})$
$(\lfloor \lceil_{1,2})$ $(\lceil \rfloor_{4,1})$

$(\rceil \rfloor_{3,4})$ $(\lceil \lfloor_{2,1})$
$\curlywedge \gg (\lceil \lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil \lceil_{4,2,1})$
$(\lfloor \lceil_{1,2})$ $(\rfloor \rceil_{4,3})$

$(\lfloor \lceil_{1,2})$ $(\lceil \rfloor_{4,1})$
$\curlywedge \gg (\lceil \lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil \lceil_{4,2,1})$
$(\rfloor \lceil_{1,4})$ $(\lceil \lfloor_{2,1})$

$(\rceil \rfloor_{3,4})$ $(\lceil \rfloor_{4,1})$
$\curlywedge \gg (\lceil \lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil \lceil_{4,2,1})$
$(\rfloor \lceil_{1,4})$ $(\rfloor \rceil_{4,3})$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{4,2,1}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ulcorner_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ulcorner_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

8. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ulcorner_{4,2,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ulcorner_{1,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ulcorner_{1,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge\gg(\llcorner\urcorner_{2,3}) \\ (\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3}) \\ \curlywedge\gg(\urcorner\llcorner_{3,2}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge\gg(\lrcorner\ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\llcorner_{3,2}) \\ \curlywedge\gg(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge\gg(\lrcorner\ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\llcorner_{3,2}) \\ \curlywedge\gg(\ulcorner\lrcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ \curlywedge\gg(\lrcorner\ulcorner_{1,4}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge\gg(\ulcorner\lrcorner_{4,1}) \\ (\urcorner\llcorner_{3,2})\end{matrix}$$

(┐ ┘$_{3,4}$)		(┌ ┌$_{4,2,1}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┌ ┌$_{1,2,4}$)		(┘ ┐$_{4,3}$)
(└┐$_{2,3}$)		(┘ ┐$_{4,3}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┐ ┘$_{3,4}$)		(┐ └$_{3,2}$)
(┌ ┌$_{1,2,4}$)		(┘ ┐$_{4,3}$)
人 ≫ (┘ ┌$_{1,4}$)	×	人 ≫ (┌┘$_{4,1}$)
(┐ ┘$_{3,4}$)		(┌ ┌$_{4,2,1}$)

Objectal action

(┘ ┌$_{1,4}$)		(┐ └$_{3,2}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(└┐$_{2,3}$)		(┌┘$_{4,1}$)
(┐ ┘$_{3,4}$)		(┐ └$_{3,2}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(└┐$_{2,3}$)		(┘ ┐$_{4,3}$)
(└┐$_{2,3}$)		(┌┘$_{4,1}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(┘ ┌$_{1,4}$)		(┐ └$_{3,2}$)
(┐ ┘$_{3,4}$)		(┌┘$_{4,1}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(┘ ┌$_{1,4}$)		(┘ ┐$_{4,3}$)
(┘ ┌$_{1,4}$)		(┘ ┐$_{4,3}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(┐ ┘$_{3,4}$)		(┌┘$_{4,1}$)
(└┐$_{2,3}$)		(┘ ┐$_{4,3}$)
人 ≫ (┌ ┌$_{1,2,4}$)	×	人 ≫ (┌ ┌$_{4,2,1}$)
(┐ ┘$_{3,4}$)		(┐ └$_{3,2}$)

Interpretative action

(┌ ┌$_{1,2,4}$)　　　(┐ └$_{3,2}$)

$$\begin{array}{ccc} \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\llcorner \urcorner_{2,3}) & & (\ulcorner \ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \ulcorner_{1,4}) & & (\urcorner \llcorner_{3,2}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\llcorner \urcorner_{2,3}) & & (\ulcorner \lrcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\ulcorner \ulcorner_{1,2,4}) & & (\ulcorner \lrcorner_{4,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\lrcorner \ulcorner_{1,4}) & & (\ulcorner \ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner \urcorner_{2,3}) & & (\ulcorner \lrcorner_{4,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\lrcorner \ulcorner_{1,4}) & & (\urcorner \llcorner_{3,2}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \ulcorner_{1,4}) & & (\ulcorner \ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\ulcorner \ulcorner_{1,2,4}) & & (\ulcorner \lrcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner \urcorner_{2,3}) & & (\ulcorner \ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner \urcorner_{4,3}) \\ (\ulcorner \ulcorner_{1,2,4}) & & (\urcorner \llcorner_{3,2}) \end{array}$$

9. Pre-semiotic dual system

$(\urcorner \lrcorner_{3,4} \ulcorner \ulcorner_{1,2,4} \lrcorner \urcorner_{4,3} \llcorner \urcorner_{2,3}) \times (\urcorner \llcorner_{3,2} \urcorner \lrcorner_{4,3} \ulcorner \ulcorner_{4,2,1} \lrcorner \urcorner_{4,3})$

Qualitative action

$$\begin{array}{ccc} (\ulcorner \ulcorner_{1,2,4}) & & (\urcorner \lrcorner_{4,3}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\lrcorner \urcorner_{3,4}) & & (\ulcorner \ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\urcorner \lrcorner_{3,4}) & & (\urcorner \lrcorner_{4,3}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\lrcorner \urcorner_{3,4}) & & (\lrcorner \urcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner \urcorner_{3,4}) & & (\ulcorner \ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner \urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner \llcorner_{3,2}) \\ (\ulcorner \ulcorner_{1,2,4}) & & (\urcorner \lrcorner_{4,3}) \end{array}$$

$(\ulcorner\ \lrcorner_{3,4})$ $(\lceil\ \lceil_{4,2,1})$
$\curlywedge \gg (\ \llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lceil\ \lceil_{1,2,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\lrcorner\ \urcorner_{3,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\ \llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\ \lrcorner_{3,4})$ $(\ulcorner\ \lrcorner_{4,3})$

$(\lceil\ \lceil_{1,2,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\ \llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\ \lrcorner_{3,4})$ $(\lceil\ \lceil_{4,2,1})$

Medial action

$(\lceil\ \lceil_{1,2,4})$ $(\ulcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\ \llcorner\urcorner_{2,3})$ $(\lceil\ \lceil_{4,2,1})$

$(\ulcorner\ \lrcorner_{3,4})$ $(\ulcorner\ \llcorner_{3,2})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\urcorner_{2,3})$ $(\lceil\ \lceil_{4,2,1})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\lceil\ \lceil_{1,2,4})$ $(\ulcorner\ \llcorner_{3,2})$

$(\ulcorner\ \lrcorner_{3,4})$ $(\lceil\ \lceil_{4,2,1})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\lrcorner\ \urcorner_{4,3})$

$(\ \llcorner\urcorner_{2,3})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\ulcorner\ \lrcorner_{3,4})$ $(\ulcorner\ \llcorner_{3,2})$

$(\lceil\ \lceil_{1,2,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\lrcorner\ \urcorner_{3,4})$ × $\curlywedge \gg (\ulcorner\ \lrcorner_{4,3})$
$(\ulcorner\ \lrcorner_{3,4})$ $(\lceil\ \lceil_{4,2,1})$

Objectal action

$(\lrcorner\ \urcorner_{3,4})$ $(\ulcorner\ \llcorner_{3,2})$

$$\begin{matrix} \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{matrix}$$

$$\begin{matrix} (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4} & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1} \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{matrix}$$

Interpretative action

$$\begin{matrix} (\ulcorner\ulcorner_{1,2,4} & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\ulcorner\ulcorner_{4,2,1}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} (\ulcorner\ulcorner_{1,2,4} & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{matrix}$$

(┘ ┐$_{3,4}$) (┌ ┌$_{1,2,4}$)
人 ≫ (┐ ┘$_{3,4}$) × 人 ≫ (┐ ┘$_{4,3}$)
(┌ ┌$_{4,2,1}$) (└┐$_{2,3}$)

(└┐$_{2,3}$) (┌ ┌$_{4,2,1}$)
人 ≫ (┐ ┘$_{3,4}$) × 人 ≫ (┘ ┐$_{4,3}$)
(┌ ┌$_{1,2,4}$) (┐ └$_{3,2}$)

10. Pre-semiotic dual system

(┐ ┘$_{3,4}$ ┌┐$_{2,4}$ ┘ ┐$_{3,4}$ └┐$_{2,3}$) × (┐ └$_{3,2}$ ┐ ┘$_{4,3}$ ┐ ┌$_{4,2}$ ┘ ┐$_{4,3}$)

Qualitative action

(┌┐$_{2,4}$) (┐ ┘$_{4,3}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┘ ┐$_{3,4}$) (┐ ┌$_{4,2}$)

(┐ ┘$_{3,4}$) (┐ ┘$_{4,3}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┘ ┐$_{3,4}$) (┘ ┐$_{4,3}$)

(┘ ┐$_{3,4}$) (┐ ┌$_{4,2}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┌┐$_{2,4}$) (┐ ┘$_{4,3}$)

(┐ ┘$_{3,4}$) (┐ ┌$_{4,2}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┌┐$_{2,4}$) (┘ ┐$_{4,3}$)

(┘ ┐$_{3,4}$) (┘ ┐$_{4,3}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┐ ┘$_{3,4}$) (┐ ┘$_{4,3}$)

(┌┐$_{2,4}$) (┘ ┐$_{4,3}$)
人 ≫ (└┐$_{2,3}$) × 人 ≫ (┐ └$_{3,2}$)
(┐ ┘$_{3,4}$) (┐ ┌$_{4,2}$)

Medial action

(┌┐$_{2,4}$) (┐ └$_{3,2}$)
人 ≫ (┘ ┐$_{3,4}$) × 人 ≫ (┐ ┘$_{4,3}$)

(└┐ $_{2,3}$) (┐ ┌$_{4,2}$)

(┐ ┘ $_{3,4}$) (┐ └$_{3,2}$)
人 ≫ (┘ ┐ $_{3,4}$) × 人 ≫ (┐ ┘ $_{4,3}$)
(└┐ $_{2,3}$) (┘ ┐ $_{4,3}$)

(└┐ $_{2,3}$) (┐ ┌$_{4,2}$)
人 ≫ (┘ ┐ $_{3,4}$) × 人 ≫ (┐ ┘ $_{4,3}$)
(┌┐ $_{2,4}$) (┐ └$_{3,2}$)

(┐ ┘ $_{3,4}$) (┐ ┌$_{4,2}$)
人 ≫ (┘ ┐ $_{3,4}$) × 人 ≫ (┐ ┘ $_{4,3}$)
(┌┐ $_{2,4}$) (┘ ┐ $_{4,3}$)

(└┐ $_{2,3}$) (┘ ┐ $_{4,3}$)
人 ≫ (┘ ┐ $_{3,4}$) × 人 ≫ (┐ ┘ $_{4,3}$)
(┐ ┘ $_{3,4}$) (┐ └$_{3,2}$)

(┌┐ $_{2,4}$) (┘ ┐ $_{4,3}$)
人 ≫ (┘ ┐ $_{3,4}$) × 人 ≫ (┐ ┘ $_{4,3}$)
(┐ ┘ $_{3,4}$) (┐ ┌$_{4,2}$)

Objectal action

(┘ ┐ $_{3,4}$) (┐ └$_{3,2}$)
人 ≫ (┌┐ $_{2,4}$) × 人 ≫ (┐ ┌$_{4,2}$)
(└┐ $_{2,3}$) (┐ ┘ $_{4,3}$)

(┐ ┘ $_{3,4}$) (┐ └$_{3,2}$)
人 ≫ (┌┐ $_{2,4}$) × 人 ≫ (┐ ┌$_{4,2}$)
(└┐ $_{2,3}$) (┘ ┐ $_{4,3}$)

(└┐ $_{2,3}$) (┐ ┘ $_{4,3}$)
人 ≫ (┌┐ $_{2,4}$) × 人 ≫ (┐ ┌$_{4,2}$)
(┘ ┐ $_{3,4}$) (┐ └$_{3,2}$)

(┐ ┘ $_{3,4}$) (┐ ┘ $_{4,3}$)
人 ≫ (┌┐ $_{2,4}$) × 人 ≫ (┐ ┌$_{4,2}$)
(┘ ┐ $_{3,4}$) (┘ ┐ $_{4,3}$)

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\urcorner_{2,4}) & \times & \curlywedge \gg (\urcorner\ \ulcorner_{4,2}) \\ (\urcorner\ \lrcorner_{3,4}) & & (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\urcorner_{2,4}) & \times & \curlywedge \gg (\urcorner\ \ulcorner_{4,2}) \\ (\urcorner\ \lrcorner_{3,4}) & & (\urcorner\ \llcorner_{3,2})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\urcorner_{2,4}) & & (\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\ \ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) & & (\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\urcorner_{2,4}) & & (\urcorner\ \lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \urcorner_{3,4}) & & (\urcorner\ \ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) & & (\urcorner\ \lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \urcorner_{3,4}) & & (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) & & (\urcorner\ \ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\urcorner_{2,4}) & & (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) & & (\urcorner\ \ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\urcorner_{2,4}) & & (\urcorner\ \llcorner_{3,2})\end{matrix}$$

11. Pre-semiotic dual system

$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\ \ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\ \ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ \ulcorner_{4,2,1}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$$\begin{array}{lcl} (\ulcorner\ulcorner_{1,2,4} & & (\ulcorner\lrcorner_{4,1} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\lrcorner\ulcorner_{1,4} & & (\ulcorner\ulcorner_{4,2,1} \end{array}$$

$$\begin{array}{lcl} (\urcorner\ulcorner_{2,4} & & (\ulcorner\lrcorner_{4,1} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\lrcorner\ulcorner_{1,4} & & (\ulcorner\urcorner_{4,2} \end{array}$$

$$\begin{array}{lcl} (\lrcorner\ulcorner_{1,4} & & (\ulcorner\ulcorner_{4,2,1} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\ulcorner\ulcorner_{1,2,4} & & (\ulcorner\lrcorner_{4,1} \end{array}$$

$$\begin{array}{lcl} (\urcorner\ulcorner_{2,4} & & (\ulcorner\ulcorner_{4,2,1} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\ulcorner\ulcorner_{1,2,4} & & (\ulcorner\urcorner_{4,2} \end{array}$$

$$\begin{array}{lcl} (\lrcorner\ulcorner_{1,4} & & (\ulcorner\urcorner_{4,2} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\urcorner\ulcorner_{2,4} & & (\ulcorner\lrcorner_{4,1} \end{array}$$

$$\begin{array}{lcl} (\ulcorner\ulcorner_{1,2,4} & & (\ulcorner\urcorner_{4,2} \\ \quad \curlywedge \gg (\llcorner\ulcorner_{1,2} & \times & \quad \curlywedge \gg (\ulcorner\llcorner_{2,1} \\ (\urcorner\ulcorner_{2,4} & & (\ulcorner\ulcorner_{4,2,1} \end{array}$$

Medial action

$$\begin{array}{lcl} (\urcorner\ulcorner_{2,4} & & (\ulcorner\llcorner_{2,1} \\ \quad \curlywedge \gg (\lrcorner\ulcorner_{1,4} & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1} \\ (\llcorner\ulcorner_{1,2} & & (\ulcorner\urcorner_{4,2} \end{array}$$

$$\begin{array}{lcl} (\urcorner\ulcorner_{2,4} & & (\ulcorner\llcorner_{2,1} \\ \quad \curlywedge \gg (\lrcorner\ulcorner_{1,4} & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1} \\ (\llcorner\ulcorner_{1,2} & & (\ulcorner\urcorner_{4,2} \end{array}$$

$$\begin{array}{lcl} (\llcorner\ulcorner_{1,2} & & (\ulcorner\ulcorner_{4,2,1} \\ \quad \curlywedge \gg (\lrcorner\ulcorner_{1,4} & \times & \quad \curlywedge \gg (\ulcorner\lrcorner_{4,1} \\ (\ulcorner\ulcorner_{1,2,4} & & (\ulcorner\llcorner_{2,1} \end{array}$$

(⌝ ⌜$_{2,4}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × (⌜ ⌜$_{4,2,1}$)
(⌜ ⌜$_{1,2,4}$) (⌜⌝ $_{4,2}$)

(⌞ ⌜$_{1,2}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟ $_{4,1}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌞$_{2,1}$)

(⌜ ⌜$_{1,2,4}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟ $_{4,1}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)

Objectal action

(⌟ ⌜$_{1,4}$) (⌜ ⌞$_{2,1}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌞ ⌜$_{1,2}$) (⌜⌟ $_{4,1}$)

(⌝ ⌜$_{2,4}$) (⌜ ⌞$_{2,1}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌞ ⌜$_{1,2}$) (⌜⌝ $_{4,2}$)

(⌞ ⌜$_{1,2}$) (⌜⌟ $_{1,4}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌟ ⌜$_{1,4}$) (⌜ ⌞$_{2,1}$)

(⌝ ⌜$_{2,4}$) (⌜⌟ $_{4,1}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌟ ⌜$_{1,4}$) (⌜⌝ $_{4,2}$)

(⌟ ⌜$_{1,4}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌝ ⌜$_{2,4}$) (⌜⌟ $_{4,1}$)

(⌞ ⌜$_{1,2}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌞$_{2,1}$)

Interpretative action

(⌜ ⌜$_{1,2,4}$) (⌜ ⌞$_{2,1}$)

$$\begin{array}{ccc} \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\llcorner\ulcorner_{1,2}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ \llcorner_{2,1}) \\ \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\llcorner\ulcorner_{1,2}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\ulcorner_{1,2}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\ \llcorner_{2,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\ulcorner_{1,2}) & & (\ulcorner\ulcorner_{1,2,4}) \\ \curlywedge \gg (\urcorner\ \ulcorner_{2,4}) & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\ \llcorner_{2,1}) \end{array}$$

12. Pre-semiotic dual system

$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\ulcorner_{1,2,4}\lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ulcorner_{4,2,1}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$$\begin{array}{ccc} (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\urcorner\ \ulcorner_{2,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner\ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌞⌝$_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌜⌝$_{2,4}$) (⌜ ⌜$_{1,2,}$)

(⌟ ⌜$_{1,4}$) (⌜⌝$_{4,2}$
  ⅄ ≫ (⌞⌝$_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌜$_{2,4}$) (⌜⌟$_{4,1}$)

(⌜ ⌜$_{1,2,4}$) (⌜⌝$_{4,2}$)
  ⅄ ≫ (⌞⌝$_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)

Medial action

(⌜ ⌜$_{1,2,4}$) (⌝ ⌞$_{3,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌞⌝$_{2,3}$) (⌜ ⌜$_{4,2,1}$)

(⌝ ⌜$_{2,4}$) (⌝ ⌞$_{3,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌞⌝$_{2,3}$) (⌜⌝$_{4,2}$)

(⌞⌝$_{2,3}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌜ ⌜$_{1,2,4}$) (⌝ ⌞$_{3,2}$)

(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌜⌝$_{2,4}$) (⌜⌝$_{4,2}$)

(⌞⌝$_{2,3}$) (⌜⌝$_{4,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌝ ⌜$_{2,4}$) (⌝ ⌞$_{3,2}$)

(⌜ ⌜$_{1,2,4}$) (⌜⌝$_{4,2}$)
  ⅄ ≫ (⌟ ⌜$_{1,4}$) × ⅄ ≫ (⌜⌟$_{4,1}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)

Objectal action

(⌟ ⌜$_{1,4}$) (⌝ ⌞$_{3,2}$)
  ⅄ ≫ (⌜ ⌜$_{1,2,4}$) × ⅄ ≫ (⌜ ⌜$_{4,2,1}$)

(└┐ $_{2,3}$)		(┌┘ $_{4,1}$)

(┐ ┌$_{2,4}$)		(┐ └$_{3,2}$)
人 ≫ (┌┌$_{1,2,4}$)	×	人 ≫ (┌┌$_{4,2,1}$)
(└┐ $_{2,3}$)		(┌┐ $_{4,2}$)

(└┐ $_{2,3}$)		(┌┘ $_{4,1}$)
人 ≫ (┌┌$_{1,2,4}$)	×	人 ≫ (┌┌$_{4,2,1}$)
(┘ ┌$_{1,4}$)		(┐ └$_{3,2}$)

(┐ ┌$_{2,4}$)		(┌┘ $_{4,1}$)
人 ≫ (┌┌$_{1,2,4}$)	×	人 ≫ (┌┌$_{4,2,1}$)
(┘ ┌$_{1,4}$)		(┌┐ $_{4,2}$)

(┘ ┌$_{1,4}$)		(┌┐ $_{4,2}$)
人 ≫ (┌┌$_{1,2,4}$)	×	人 ≫ (┌┌$_{4,2,1}$)
(┐ ┌$_{2,4}$)		(┌┘ $_{4,1}$)

(└┐ $_{2,3}$)		(┌┐ $_{4,2}$)
人 ≫ (┌┌$_{1,2,4}$)	×	人 ≫ (┌┌$_{4,2,1}$)
(┐ ┌$_{2,4}$)		(┐ └$_{3,2}$)

Interpretative action

(┌┌$_{1,2,4}$)		(┐ └$_{3,2}$)
人 ≫ (┐ ┌$_{2,4}$)	×	人 ≫ (┌┐ $_{4,2}$)
(└┐ $_{2,3}$)		(┌┌$_{4,2,1}$)

(┘ ┌$_{1,4}$)		(┐ └$_{3,2}$)
人 ≫ (┐ ┌$_{2,4}$)	×	人 ≫ (┌┐ $_{4,2}$)
(└┐ $_{2,3}$)		(┌┘ $_{4,1}$)

(┌┌$_{1,2,4}$)		(┌┘ $_{4,1}$)
人 ≫ (┐ ┌$_{2,4}$)	×	人 ≫ (┌┐ $_{4,2}$)
(┘ ┌$_{1,4}$)		(┌┌$_{4,2,1}$)

(└┐ $_{2,3}$)		(┌┘ $_{4,1}$)
人 ≫ (┐ ┌$_{2,4}$)	×	人 ≫ (┌┐ $_{4,2}$)
(┘ ┌$_{1,4}$)		(┐ └$_{3,2}$)

(⌟ ⌜$_{1,4}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌝ ⌜$_{2,4}$) × ⅄ ≫ (⌜⌝ $_{4,2}$)
(⌜ ⌜$_{1,2,4}$) (⌜⌟ $_{4,1}$)

(⌞⌝ $_{2,3}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌝ ⌜$_{2,4}$) × ⅄ ≫ (⌜⌝ $_{4,2}$)
(⌜ ⌜$_{1,2,4}$) (⌝ ⌞$_{3,2}$)

13. Pre-semiotic dual system

(⌝ ⌜$_{2,4}$ ⌜ ⌜$_{1,2,4}$ ⌟ ⌝ $_{3,4}$ ⌞⌝ $_{2,3}$) × (⌝ ⌞$_{3,2}$ ⌝ ⌟ $_{4,3}$ ⌜ ⌜$_{4,2,1}$ ⌜⌝ $_{4,2}$)

Qualitative action

(⌜ ⌜$_{1,2,4}$) (⌝ ⌟ $_{4,3}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌟ ⌝ $_{3,4}$) (⌜ ⌜$_{4,2,1}$)

(⌝ ⌜$_{2,4}$) (⌝ ⌟ $_{4,3}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌟ ⌝ $_{3,4}$) (⌜⌝ $_{4,2}$)

(⌟ ⌝ $_{3,4}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌜ ⌜$_{1,2,4}$) (⌝ ⌟ $_{4,3}$)

(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌜ ⌜$_{1,2,4}$) (⌜⌝ $_{4,2}$)

(⌟ ⌝ $_{3,4}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌜$_{2,4}$) (⌝ ⌟ $_{4,3}$)

(⌜ ⌜$_{1,2,4}$) (⌜⌝ $_{4,2}$)
  ⅄ ≫ (⌞⌝ $_{2,3}$) × ⅄ ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌜$_{2,4}$) (⌜ ⌜$_{4,2,1}$)

Medial action

(⌜ ⌜$_{1,2,4}$) (⌝ ⌞$_{3,2}$)
  ⅄ ≫ (⌟ ⌝ $_{3,4}$) × ⅄ ≫ (⌝ ⌟ $_{4,3}$)

$(\lfloor\rceil_{2,3})$ $(\lceil\lceil_{4,2,1})$

$(\rceil\lceil_{2,4})$ $(\rceil\lfloor_{3,2})$
$\curlywedge \gg (\lrcorner\rceil_{3,4}) \quad \times \quad \curlywedge \gg (\rceil\lrcorner_{4,3})$
$(\lfloor\rceil_{2,3})$ $(\lceil\rceil_{4,2})$

$(\lfloor\rceil_{2,3})$ $(\lceil\lceil_{4,2,1})$
$\curlywedge \gg (\lrcorner\rceil_{3,4}) \quad \times \quad \curlywedge \gg (\rceil\lrcorner_{4,3})$
$(\lceil\lceil_{1,2,4})$ $(\rceil\lfloor_{3,2})$

$(\rceil\lceil_{2,4})$ $(\lceil\lceil_{4,2,1})$
$\curlywedge \gg (\lrcorner\rceil_{3,4}) \quad \times \quad \curlywedge \gg (\rceil\lrcorner_{4,3})$
$(\lceil\lceil_{1,2,4})$ $(\lceil\rceil_{4,2})$

$(\lfloor\rceil_{2,3})$ $(\lceil\rceil_{4,2})$
$\curlywedge \gg (\lrcorner\rceil_{3,4}) \quad \times \quad \curlywedge \gg (\rceil\lrcorner_{4,3})$
$(\rceil\lceil_{2,4})$ $(\rceil\lfloor_{3,2})$

$(\lceil\lceil_{1,2,4})$ $(\lceil\rceil_{4,2})$
$\curlywedge \gg (\lrcorner\rceil_{3,4}) \quad \times \quad \curlywedge \gg (\rceil\lrcorner_{4,3})$
$(\rceil\lceil_{2,4})$ $(\lceil\lceil_{4,2,1})$

Objectal action

$(\lrcorner\rceil_{3,4})$ $(\rceil\lfloor_{3,2})$
$\curlywedge \gg (\lceil\lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil\lceil_{4,2,1})$
$(\lfloor\rceil_{2,3})$ $(\rceil\lrcorner_{4,3})$

$(\rceil\lceil_{2,4})$ $(\rceil\lfloor_{3,2})$
$\curlywedge \gg (\lceil\lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil\lceil_{4,2,1})$
$(\lfloor\rceil_{2,3})$ $(\lceil\rceil_{4,2})$

$(\lfloor\rceil_{2,3})$ $(\rceil\lrcorner_{4,3})$
$\curlywedge \gg (\lceil\lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil\lceil_{4,2,1})$
$(\lrcorner\rceil_{3,4})$ $(\rceil\lfloor_{3,2})$

$(\rceil\lceil_{2,4})$ $(\rceil\lrcorner_{4,3})$
$\curlywedge \gg (\lceil\lceil_{1,2,4}) \quad \times \quad \curlywedge \gg (\lceil\lceil_{4,2,1})$
$(\lrcorner\rceil_{3,4})$ $(\lceil\rceil_{4,2})$

(┘ ┐$_{3,4}$) (┌┐ $_{4,2}$)
人 ≫ (┌ ┌$_{1,2,4}$) × 人 ≫ (┌ ┌$_{4,2,1}$)
(┐ ┌$_{2,4}$) (┐ ┘ $_{4,3}$)

(└┐ $_{2,3}$) (┌┐ $_{4,2}$)
人 ≫ (┌ ┌$_{1,2,4}$) × 人 ≫ (┌ ┌$_{4,2,1}$)
(┐ ┌$_{2,4}$) (┐ └$_{3,2}$)

Interpretative action

(┌ ┌$_{1,2,4}$) (┐ └$_{3,2}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(└┐ $_{2,3}$) (┌ ┌$_{4,2,1}$)

(┘ ┐ $_{3,4}$) (┐ └$_{3,2}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(└┐ $_{2,3}$) (┐ ┘ $_{4,3}$)

(┌ ┌$_{1,2,4}$) (┐ ┘ $_{4,3}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(┘ ┐ $_{3,4}$) (┌ ┌$_{4,2,1}$)

(└┐ $_{2,3}$) (┐ ┘ $_{4,3}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(┘ ┐ $_{3,4}$) (┐ └$_{3,2}$)

(┘ ┐ $_{3,4}$) (┌ ┌$_{4,2,1}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(┌ ┌$_{1,2,4}$) (┐ ┘ $_{4,3}$)

(└┐ $_{2,3}$) (┌ ┌$_{4,2,1}$)
人 ≫ (┐ ┌$_{2,4}$) × 人 ≫ (┌┐ $_{4,2}$)
(┌ ┌$_{1,2,4}$) (┐ └$_{3,2}$)

14. Pre-semiotic dual system
(┐ ┌$_{2,4}$ ┌┐ $_{2,4}$ ┘ ┐ $_{3,4}$ └┐ $_{2,3}$) × (┐ └$_{3,2}$ ┐ ┘ $_{4,3}$ ┐ ┌$_{4,2}$ ┌┐ $_{4,2}$)

Qualitative action

$$\begin{matrix}(\ulcorner\urcorner_{2,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\urcorner\ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ulcorner_{2,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\urcorner\ulcorner_{2,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\urcorner\ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\urcorner_{2,4}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) \\ (\urcorner\ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2}) \\ \curlywedge \gg (\urcorner\llcorner_{3,2}) \\ (\urcorner\ulcorner_{4,2})\end{matrix}$$

Medial action

$$\begin{matrix}(\ulcorner\urcorner_{2,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ulcorner_{2,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\llcorner_{3,2})\end{matrix}$$

(⌉ ⌈$_{2,4}$)		(⌉ ⌈$_{4,2}$)
人 ≫ (⌋ ⌉ $_{3,4}$)	×	人 ≫ (⌉ ⌋ $_{4,3}$)
(⌈⌉ $_{2,4}$)		(⌈⌉ $_{4,2}$)

(⌊⌉ $_{2,3}$)		(⌈⌉ $_{4,2}$)
人 ≫ (⌋ ⌉ $_{3,4}$)	×	人 ≫ (⌉ ⌋ $_{4,3}$)
(⌉ ⌈$_{2,4}$)		(⌉ ⌊$_{3,2}$)

(⌈⌉ $_{2,4}$)		(⌈⌉ $_{4,2}$)
人 ≫ (⌋ ⌉ $_{3,4}$)	×	人 ≫ (⌉ ⌋ $_{4,3}$)
(⌉ ⌈$_{2,4}$)		(⌉ ⌈$_{4,2}$)

Objectal action

(⌋ ⌉ $_{3,4}$)		(⌉ ⌊$_{3,2}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌊⌉ $_{2,3}$)		(⌉ ⌋ $_{4,3}$)

(⌉ ⌈$_{2,4}$)		(⌉ ⌊$_{3,2}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌊⌉ $_{2,3}$)		(⌈⌉ $_{4,2}$)

(⌊⌉ $_{2,3}$)		(⌉ ⌋ $_{4,3}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌋ ⌉ $_{3,4}$)		(⌉ ⌊$_{3,2}$)

(⌉ ⌈$_{2,4}$)		(⌉ ⌋ $_{4,3}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌋ ⌉ $_{3,4}$)		(⌈⌉ $_{4,2}$)

(⌋ ⌉ $_{3,4}$)		(⌈⌉ $_{4,2}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌉ ⌈$_{2,4}$)		(⌉ ⌋ $_{4,3}$)

(⌊⌉ $_{2,3}$)		(⌈⌉ $_{4,2}$)
人 ≫ (⌈⌉ $_{2,4}$)	×	人 ≫ (⌉ ⌈$_{4,2}$)
(⌉ ⌈$_{2,4}$)		(⌉ ⌊$_{3,2}$)

Interpretative action

(⌈⌉ $_{2,4}$)		(⌉ ⌊$_{3,2}$)

$$\begin{matrix} \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\llcorner\urcorner_{2,3} & & (\urcorner \ulcorner_{4,2} \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4} & & (\urcorner \llcorner_{3,2} \\ \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\llcorner\urcorner_{2,3} & & (\urcorner \lrcorner_{4,3} \end{matrix}$$

$$\begin{matrix} (\ulcorner\urcorner_{2,4} & & (\urcorner \lrcorner_{4,3} \\ \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\lrcorner\urcorner_{3,4} & & (\urcorner \ulcorner_{4,2} \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3} & & (\urcorner \lrcorner_{4,3} \\ \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\lrcorner\urcorner_{3,4} & & (\urcorner \llcorner_{3,2} \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4} & & (\urcorner \ulcorner_{4,2} \\ \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\ulcorner\urcorner_{2,4} & & (\urcorner \lrcorner_{4,3} \end{matrix}$$

$$\begin{matrix} (\llcorner\urcorner_{2,3} & & (\urcorner \ulcorner_{4,2} \\ \curlywedge \gg (\urcorner \ulcorner_{2,4} & \times & \curlywedge \gg (\ulcorner\urcorner_{4,2} \\ (\ulcorner\urcorner_{2,4} & & (\urcorner \llcorner_{3,2} \end{matrix}$$

15. Pre-semiotic dual system

$(\urcorner\urcorner_{2,3,4}\ \ulcorner\urcorner_{2,4}\ \lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\urcorner\ \ulcorner_{4,2}\urcorner\urcorner_{4,3,2})$

Qualitative action

$$\begin{matrix} (\ulcorner\urcorner_{2,4} & & (\urcorner \lrcorner_{4,3} \\ \curlywedge \gg (\llcorner\urcorner_{2,3} & \times & \curlywedge \gg (\urcorner \llcorner_{3,2} \\ (\lrcorner\urcorner_{3,4} & & (\urcorner \ulcorner_{4,2} \end{matrix}$$

$$\begin{matrix} (\urcorner\urcorner_{2,3,4} & & (\urcorner \lrcorner_{4,3} \\ \curlywedge \gg (\llcorner\urcorner_{2,3} & \times & \curlywedge \gg (\urcorner \llcorner_{3,2} \\ (\lrcorner\urcorner_{3,4} & & (\urcorner\urcorner_{4,3,2} \end{matrix}$$

$$\begin{matrix} (\lrcorner\urcorner_{3,4} & & (\urcorner \ulcorner_{4,2} \\ \curlywedge \gg (\llcorner\urcorner_{2,3} & \times & \curlywedge \gg (\urcorner \llcorner_{3,2} \\ (\ulcorner\urcorner_{2,4} & & (\urcorner \lrcorner_{4,3} \end{matrix}$$

(┐ ┌$_{2,4}$)　　　　(┐ ┌$_{4,2}$)
　人 ≫ (└┐$_{2,3}$)　×　人 ≫ (┐ └$_{3,2}$)
(┌┐$_{2,4}$)　　　　(┌┐$_{4,2}$)

(┘┐$_{3,4}$)　　　　(┌┐$_{4,2}$)
　人 ≫ (└┐$_{2,3}$)　×　人 ≫ (┐ └$_{3,2}$)
(┐ ┌$_{2,4}$)　　　　(┐ ┘$_{4,3}$)

(┌┐$_{2,4}$)　　　　(┌┐$_{4,2}$)
　人 ≫ (└┐$_{2,3}$)　×　人 ≫ (┐ └$_{3,2}$)
(┐ ┌$_{2,4}$)　　　　(┐ ┌$_{4,2}$)

Medial action

(┌┐$_{2,4}$)　　　　(┐ └$_{3,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(└┐$_{2,3}$)　　　　(┐ ┌$_{4,2}$)

(┐ ┐$_{2,3,4}$)　　　　(┐ └$_{3,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(└┐$_{2,3}$)　　　　(┐ ┐$_{4,3,2}$)

(└┐$_{2,3}$)　　　　(┐ ┌$_{4,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(┌┐$_{2,4}$)　　　　(┐ └$_{3,2}$)

(┐ ┐$_{2,3,4}$)　　　　(┐ ┌$_{4,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(┌┐$_{2,4}$)　　　　(┐ ┐$_{4,3,2}$)

(└┐$_{2,3}$)　　　　(┐ ┐$_{4,3,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(┐ ┐$_{2,3,4}$)　　　　(┐ └$_{3,2}$)

(┌┐$_{2,4}$)　　　　(┐ ┐$_{4,3,2}$)
　人 ≫ (┘┐$_{3,4}$)　×　人 ≫ (┐ ┘$_{4,3}$)
(┐ ┐$_{2,3,4}$)　　　　(┐ ┌$_{4,2}$)

Objectal action

(┘┐$_{3,4}$)　　　　(┐ └$_{3,2}$)
　人 ≫ (┌┐$_{2,4}$)　×　人 ≫ (┐ ┌$_{4,2}$)

(└┐ $_{2,3}$)　　　　(┐ ┘ $_{4,3}$)

(┐ ┐ $_{2,3,4}$)　　　　(┐ └$_{3,2}$)
人 ≫ (┌┐ $_{2,4}$)　　×　　人 ≫ (┐ ┌$_{4,2}$)
(└┐ $_{2,3}$)　　　　(┐ ┐ $_{4,3,2}$)

(└┐ $_{2,3}$)　　　　(┐ ┘ $_{4,3}$)
人 ≫ (┌┐ $_{2,4}$)　　×　　人 ≫ (┐ ┌$_{4,2}$)
(┘ ┐ $_{3,4}$)　　　　(┐ └$_{3,2}$)

(┐ ┐ $_{2,3,4}$)　　　　(┐ ┘ $_{4,3}$)
人 ≫ (┌┐ $_{2,4}$)　　×　　人 ≫ (┐ ┌$_{4,2}$)
(┘ ┐ $_{3,4}$)　　　　(┐ ┐ $_{4,3,2}$)

(┘ ┐ $_{3,4}$)　　　　(┐ ┐ $_{4,3,2}$)
人 ≫ (┌┐ $_{2,4}$)　　×　　人 ≫ (┐ ┌$_{4,2}$)
(┐ ┐ $_{2,3,4}$)　　　　(┐ ┘ $_{4,3}$)

(└┐ $_{2,3}$)　　　　(┐ ┐ $_{4,3,2}$)
人 ≫ (┌┐ $_{2,4}$)　　×　　人 ≫ (┐ ┌$_{4,2}$)
(┐ ┐ $_{2,3,4}$)　　　　(┐ └$_{3,2}$)

Interpretative action

(┌┐ $_{2,4}$)　　　　(┐ └$_{3,2}$)
人 ≫ (┐ ┐ $_{2,3,4}$)　　×　　人 ≫ (┐ ┐ $_{4,3,2}$)
(└┐ $_{2,3}$)　　　　(┐ ┌$_{4,2}$)

(┘ ┐ $_{3,4}$)　　　　(┐ └$_{3,2}$)
人 ≫ (┐ ┐ $_{2,3,4}$)　　×　　人 ≫ (┐ ┐ $_{4,3,2}$)
(└┐ $_{2,3}$)　　　　(┐ ┘ $_{4,3}$)

(┌┐ $_{2,4}$)　　　　(┐ ┘ $_{4,3}$)
人 ≫ (┐ ┐ $_{2,3,4}$)　　×　　人 ≫ (┐ ┐ $_{4,3,2}$)
(┘ ┐ $_{3,4}$)　　　　(┐ ┌$_{4,2}$)

(└┐ $_{2,3}$)　　　　(┐ ┘ $_{4,3}$)
人 ≫ (┐ ┐ $_{2,3,4}$)　　×　　人 ≫ (┐ ┐ $_{4,3,2}$)
(┘ ┐ $_{3,4}$)　　　　(┐ └$_{3,2}$)

(┘ ┐ $_{3,4}$) (┐ ┌ $_{4,2}$)
⋏ ≫ (┐ ┐ $_{2,3,4}$) × ⋏ ≫ (┐ ┐ $_{4,3,2}$)
(┌┐ $_{2,4}$) (┐ ┘ $_{4,3}$)

(└┐ $_{2,3}$) (┐ ┌ $_{4,2}$)
⋏ ≫ (┐ ┐ $_{2,3,4}$) × ⋏ ≫ (┐ ┐ $_{4,3,2}$)
(┌┐ $_{2,4}$) (┐ └ $_{3,2}$)

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system

(┐ ┘ ┌┘ ┘ ┘ └┘) × (┐ └ ┘ ┘ ┘ ┌ ┘ ┐)

Qualitative action

(┐ ┘ $_{3,4}$) (┘ ┌ $_{4,1}$)
(┘ ┘ $_{1,3,4}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┘ $_{4,3,1}$)
(┌┘ $_{1,4}$) (┘ ┐ $_{4,3}$)

(┌┘ $_{1,4}$) (┘ ┐ $_{4,3}$)
(┘ ┘ $_{1,4,3}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┘ $_{4,3,1}$)
(┐ ┘ $_{3,4}$) (┘ ┌ $_{4,1}$)

(┐ ┘ $_{3,4}$) (┘ ┘ $_{4,3,1}$)
(┌┘ $_{1,4}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┌ $_{4,1}$)
(┘ ┘ $_{1,3,4}$) (┘ ┐ $_{4,3}$)

(┘ ┘ $_{1,3,4}$) (┘ ┐ $_{4,3}$)
(┌┘ $_{1,4}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┌ $_{4,1}$)
(┐ ┘ $_{3,4}$) (┘ ┘ $_{4,3,1}$)

(┘ ┘ $_{1,3,4}$) (┘ ┌ $_{4,1}$)
(┐ ┘ $_{3,4}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┐ $_{4,3}$)
(┌┘ $_{1,4}$) (┘ ┘ $_{4,3,1}$)

(┌┘ $_{1,4}$) (┘ ┘ $_{4,3,1}$)
(┐ ┘ $_{3,4}$) ≫ ⋎ ≻ (└┘ $_{1,3}$) × (┐ └ $_{3,1}$) ≫ ⋎ ≻ (┘ ┐ $_{4,3}$)
(┘ ┘ $_{1,3,4}$) (┘ ┌ $_{4,1}$)

Medial action

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\(\,\llcorner\lrcorner_{1,3})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\,\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\ulcorner_{4,1})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\,\ulcorner\lrcorner_{1,4})\\(\,\llcorner\lrcorner_{1,3})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\urcorner\,\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\urcorner_{4,3})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\,\llcorner\lrcorner_{1,3})\\(\,\ulcorner\lrcorner_{1,4})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\urcorner\,\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\urcorner_{4,3})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\,\ulcorner_{4,1})\\(\urcorner\,\llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\(\,\ulcorner\lrcorner_{1,4})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\,\llcorner\lrcorner_{1,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\,\ulcorner_{4,1})\\(\lrcorner\,\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\,\llcorner\lrcorner_{1,3})\\(\urcorner\,\lrcorner_{3,4})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\,\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\ulcorner_{4,1})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\,\urcorner_{4,3})\\(\urcorner\,\llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\,\ulcorner\lrcorner_{1,4})\\(\urcorner\,\lrcorner_{3,4})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{1,3,4})\\(\,\llcorner\lrcorner_{1,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\,\urcorner_{4,3})\\(\lrcorner\,\ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\(\,\llcorner\lrcorner_{1,3})\gg\curlyvee\succ(\,\ulcorner\lrcorner_{1,4})\\(\lrcorner\,\lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\lrcorner_{4,3,1})\\(\lrcorner\,\ulcorner_{4,1})\gg\curlyvee\succ(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\,\lrcorner_{1,3,4})\\(\,\llcorner\lrcorner_{1,3})\gg\curlyvee\succ(\,\ulcorner\lrcorner_{1,4})\\(\urcorner\,\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\urcorner_{4,3})\\(\lrcorner\,\ulcorner_{4,1})\gg\curlyvee\succ(\urcorner\,\llcorner_{3,1})\\(\lrcorner\,\lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\,\llcorner\lrcorner_{1,3})\\(\lrcorner\,\lrcorner_{1,3,4})\gg\curlyvee\succ(\,\ulcorner\lrcorner_{1,4})\\(\urcorner\,\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\,\urcorner_{4,3})\\(\lrcorner\,\ulcorner_{4,1})\gg\curlyvee\succ(\lrcorner\,\lrcorner_{4,3,1})\\(\urcorner\,\llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4})\\ (\ \llcorner\lrcorner_{1,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,1})\\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})\\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\lrcorner_{1,3})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4})\\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1})\\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4})\\ (\ \llcorner\lrcorner_{1,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,1})\\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\ \llcorner\lrcorner_{1,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,1})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4})\\ (\ \llcorner\lrcorner_{1,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,1})\\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\lrcorner_{1,3})\\ (\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})\\ (\urcorner\ \llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\ \llcorner\lrcorner_{1,3})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})\\ (\urcorner\ \llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\lrcorner_{1,3})\\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1})\\ (\lrcorner\ \urcorner_{4,3}) \quad \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4})\\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\\ (\ \llcorner\lrcorner_{1,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

2. Pre-semiotic dual system

$$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \lrcorner_{1,3,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\ \lrcorner\ \lrcorner_{4,3,1}\ \lrcorner\ \ulcorner_{1,4}\ \lrcorner\ \urcorner_{4,3})$$

Qualitative action

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lrcorner\lrcorner_{1,3,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\lrcorner_{4,3,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\lrcorner\lrcorner_{1,3,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\lrcorner_{4,3,1})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\ulcorner\lrcorner_{1,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\lrcorner\lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lrcorner_{4,3,1})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\ulcorner_{4,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\lrcorner_{1,3,4})\\(\ulcorner\lrcorner_{1,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\ulcorner_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\lrcorner_{1,3,4})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\lrcorner\lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lrcorner_{4,3,1})\\(\ulcorner\llcorner_{2,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\llcorner\ulcorner_{1,2})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\ulcorner\lrcorner_{1,4})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\ulcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lceil\lrcorner_{1,4})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\lfloor\lceil_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\lceil\lfloor_{2,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\lceil_{1,4})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\lceil_{1,2})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\lceil\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lceil_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lceil\lfloor_{2,1})\end{matrix}$$

$$\begin{matrix}(\lceil\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\lrcorner\lrcorner_{1,3,4})\\(\lfloor\lceil_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\lceil\lfloor_{2,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\lceil_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lfloor\lceil_{1,2})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\lrcorner\lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lrcorner_{4,3,1})\\(\lrcorner\lceil_{4,1})\gg\curlyvee\succ(\lceil\lfloor_{2,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\lrcorner_{1,3,4})\\(\lfloor\lceil_{1,2})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\lceil_{4,1})\gg\curlyvee\succ(\lceil\lfloor_{2,1})\\(\lrcorner\lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\lfloor\lceil_{1,2})\\(\lrcorner\lrcorner_{1,3,4})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lceil_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\lrcorner_{4,3,1})\\(\lceil\lfloor_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lrcorner\lrcorner_{1,3,4})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\lfloor\lceil_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lceil_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lceil\lfloor_{2,1})\end{matrix}$$

$$\begin{matrix}(\lfloor\lceil_{1,2})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\lrcorner\lrcorner_{1,3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lceil_{4,1})\\(\lrcorner\lrcorner_{4,3,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lceil\lfloor_{2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\lrcorner_{1,3,4})\\(\urcorner\lrcorner_{3,4})\gg\curlyvee\succ(\lceil\lrcorner_{1,4})\\(\lfloor\lceil_{1,2})\end{matrix}\quad\times\quad\begin{matrix}(\lceil\lfloor_{2,1})\\(\lrcorner\lceil_{4,1})\gg\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\lrcorner_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\lceil\lrcorner_{1,4})\\(\lfloor\lceil_{1,2})\gg\curlyvee\succ(\urcorner\lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\lrcorner_{4,3,1})\\(\lrcorner\urcorner_{4,3})\gg\curlyvee\succ(\lceil\lfloor_{2,1})\end{matrix}$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\lrcorner\ \ulcorner_{4,1})$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\ulcorner_{1,2})\ \gg\curlyvee\succ(\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3})\ \gg\curlyvee\succ(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\lrcorner\ \lrcorner_{1,3,4})\gg\curlyvee\succ(\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3})\ \gg\curlyvee\succ(\lrcorner\ \lrcorner_{4,3,1}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ (\lrcorner\ \lrcorner_{1,3,4})\gg\curlyvee\succ(\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\urcorner_{4,3})\ \gg\curlyvee\succ(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\ulcorner\lrcorner_{1,4})\ \gg\curlyvee\succ(\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\urcorner_{4,3})\ \gg\curlyvee\succ(\lrcorner\ \ulcorner_{4,1}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4})\ \gg\curlyvee\succ(\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\lrcorner\urcorner_{4,3})\ \gg\curlyvee\succ(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

3. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \lrcorner_{1,3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \lrcorner\ \lrcorner_{4,3,1}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \lrcorner_{1,3,4})\gg\curlyvee\succ(\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2})\ \gg\curlyvee\succ(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ (\lrcorner\ \lrcorner_{1,3,4})\gg\curlyvee\succ(\llcorner\urcorner_{2,3}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\quad\curlyvee\quad\succ(\lrcorner\ \lrcorner_{4,3,1}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\ \gg\curlyvee\succ(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1}) \\ (\urcorner\ \llcorner_{3,2})\ \gg\curlyvee\succ(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4})\\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \lrcorner_{1,3,4})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1})\\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\lrcorner\ \urcorner_{4,3})$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\lrcorner\ \urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \quad \times \quad (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\ \lrcorner_{3,4}) \qquad (\lrcorner\ \lrcorner_{4,3,1})$$

$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \urcorner_{4,3})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \quad \times \quad (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\urcorner\ \lrcorner_{3,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\urcorner\ \lrcorner_{3,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \quad \times \quad (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \urcorner_{4,3})$$

$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \quad \times \quad (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \quad \times \quad (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})$$
$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \lrcorner_{4,3,1})$$

Interpretative action

$$(\ulcorner\lrcorner_{1,4}) \qquad (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\ \llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \quad \times \quad (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\lrcorner\ \ulcorner_{4,1})$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \qquad (\lrcorner\ \ulcorner_{4,1})$$
$$(\ \llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \quad \times \quad (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\lrcorner_{1,4}) \qquad (\lrcorner\ \lrcorner_{4,3,1})$$

$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \quad \times \quad (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\ulcorner\lrcorner_{1,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\ulcorner\lrcorner_{1,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \quad \times \quad (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{4,3,1})$$
$$(\ \llcorner\urcorner_{2,3}) \qquad (\lrcorner\ \ulcorner_{4,1})$$

$$(\lfloor\rceil_{2,3})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\rceil\rfloor_{3,4}) \quad \times \quad (\rfloor\rceil_{4,3}) \gg \curlyvee \succ (\rfloor\lceil_{4,1})$$
$$(\rfloor\rfloor_{1,3,4}) \qquad\qquad (\rceil\lfloor_{3,2})$$

$$(\rfloor\rfloor_{1,3,4}) \qquad\qquad (\rceil\lfloor_{3,2})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\rceil\rfloor_{3,4}) \quad \times \quad (\rfloor\rceil_{4,3}) \gg \curlyvee \succ (\rfloor\lceil_{4,1})$$
$$(\lfloor\rceil_{2,3}) \qquad\qquad (\rfloor\rfloor_{4,3,1})$$

4. Pre-semiotic system

$(\rceil\rfloor_{3,4}\ \lceil\rfloor_{1,4}\rfloor\ \lceil_{1,4}\ \lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}\ \lceil\rfloor_{4,1}\rfloor\ \lceil_{4,1}\rfloor\rceil_{4,3})$

Qualitative action

$$(\rceil\rfloor_{3,4})$$
$$(\rfloor\lceil_{1,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\lceil\rfloor_{4,1})$$
$$(\lceil\rfloor_{1,4}) \qquad\qquad (\rfloor\rceil_{4,3})$$

$$(\lceil\rfloor_{1,4}) \qquad\qquad (\rfloor\rceil_{4,3})$$
$$(\rfloor\lceil_{1,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\lceil\rfloor_{4,1})$$
$$(\rceil\rfloor_{3,4}) \qquad\qquad (\rfloor\lceil_{4,1})$$

$$(\rceil\rfloor_{3,4}) \qquad\qquad (\lceil\rfloor_{4,1})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\rfloor\lceil_{4,1})$$
$$(\rfloor\lceil_{1,4}) \qquad\qquad (\rfloor\rceil_{4,3})$$

$$(\rfloor\lceil_{1,4}) \qquad\qquad (\rfloor\rceil_{3,4})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\rfloor\lceil_{4,1})$$
$$(\rceil\rfloor_{3,4}) \qquad\qquad (\lceil\rfloor_{4,1})$$

$$(\rfloor\lceil_{1,4}) \qquad\qquad (\rfloor\lceil_{4,1})$$
$$(\rceil\rfloor_{3,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\rfloor\rceil_{4,3})$$
$$(\lceil\rfloor_{1,4}) \qquad\qquad (\lceil\rfloor_{4,1})$$

$$(\lceil\rfloor_{1,4}) \qquad\qquad (\lceil\rfloor_{4,1})$$
$$(\rceil\rfloor_{3,4}) \gg \curlyvee \succ (\lfloor\lceil_{1,2}) \quad \times \quad (\lceil\lfloor_{2,1}) \gg \curlyvee \succ (\rfloor\rceil_{4,3})$$
$$(\rfloor\lceil_{1,4}) \qquad\qquad (\rfloor\lceil_{4,1})$$

Medial action

$$(\rceil\rfloor_{3,4})$$
$$(\lfloor\lceil_{1,2}) \gg \curlyvee \succ (\rfloor\lceil_{1,4}) \quad \times \quad (\lceil\rfloor_{4,1}) \gg \curlyvee \succ (\lceil\lfloor_{2,1})$$

$$(\ulcorner\lrcorner_{1,4}) \qquad (\lrcorner\urcorner_{4,3})$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\ \gg\!\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\ulcorner\lrcorner_{1,4})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\ulcorner\lrcorner_{1,4})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\llcorner_{2,1})\\(\ulcorner\lrcorner_{4,1})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{4,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\urcorner\ \lrcorner_{3,4})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\(\ulcorner\lrcorner_{4,1})\ \gg\!\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\ \gg\!\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\llcorner_{2,1})\\(\ulcorner\lrcorner_{4,1})\ \gg\!\curlyvee\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\llcorner\ulcorner_{1,2})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{1,4})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\!\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\!\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\llcorner_{2,1})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\!\curlyvee\succ(\ulcorner\lrcorner_{4,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$(\lfloor\lceil_{1,2}) \quad (\lceil\rfloor_{4,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lceil\rfloor_{1,4}) \times (\lrcorner\lceil_{4,1}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\lrcorner\lceil_{1,4}) \quad (\lceil\lfloor_{2,1})$$

$$(\lrcorner\lceil_{1,4}) \quad (\lceil\lfloor_{2,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lceil\rfloor_{1,4}) \times (\lrcorner\lceil_{4,1}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\lfloor\lceil_{1,2}) \quad (\lceil\rfloor_{4,1})$$

Interpretative action

$$(\lceil\rfloor_{1,4}) \quad (\lceil\rfloor_{4,1})$$
$$(\lfloor\lceil_{1,2}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\lfloor_{2,1})$$
$$(\lrcorner\lceil_{1,4}) \quad (\lrcorner\lceil_{4,1})$$

$$(\lrcorner\lceil_{1,4}) \quad (\lrcorner\lceil_{4,1})$$
$$(\lfloor\lceil_{1,2}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\lfloor_{2,1})$$
$$(\lceil\rfloor_{1,4}) \quad (\lceil\rfloor_{4,1})$$

$$(\lfloor\lceil_{1,2}) \quad (\lrcorner\lceil_{4,1})$$
$$(\lrcorner\lceil_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\rfloor_{4,1})$$
$$(\lceil\rfloor_{1,4}) \quad (\lceil\lfloor_{2,1})$$

$$(\lceil\rfloor_{1,4}) \quad (\lceil\lfloor_{2,1})$$
$$(\lrcorner\lceil_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\lceil_{4,1})$$
$$(\lfloor\lceil_{1,2}) \quad (\lceil\rfloor_{4,1})$$

$$(\lfloor\lceil_{1,2}) \quad (\lceil\rfloor_{4,1})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\lceil_{4,1})$$
$$(\lrcorner\lceil_{1,4}) \quad (\lceil\lfloor_{2,1})$$

$$(\lrcorner\lceil_{1,4}) \quad (\lceil\lfloor_{2,1})$$
$$(\lceil\rfloor_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\lceil_{4,1})$$
$$(\lfloor\lceil_{1,2}) \quad (\lceil\rfloor_{4,1})$$

5. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \lceil\rfloor_{1,4}\lrcorner\ \lceil_{1,4}\ \lfloor\urcorner_{2,3}) \times (\urcorner\ \lfloor_{3,2}\ \lceil\rfloor_{4,1}\lrcorner\ \lceil_{4,1}\lrcorner\urcorner_{3,4})$

Qualitative action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \ulcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\lrcorner\ \ulcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\ \urcorner_{3,4})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\lrcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\ulcorner\lrcorner_{1,4})\ \gg\Upsilon\succ(\lrcorner\ \ulcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\ulcorner\lrcorner_{4,1})\ \gg\Upsilon\succ(\lrcorner\ \ulcorner_{4,1})\\(\lrcorner\ \urcorner_{4})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\urcorner_{2,3})\\(\urcorner\ \lrcorner_{3,4})\ \gg\Upsilon\succ(\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\lrcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\(\ulcorner\lrcorner_{4,1})\ \gg\Upsilon\succ(\lrcorner\urcorner_{4,3})\\(\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\ \gg\ \Upsilon\ \succ(\lrcorner\ \ulcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\ulcorner\lrcorner_{4,1})\ \gg\Upsilon\succ(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\ \llcorner\urcorner_{2,3})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\urcorner\ \llcorner_{3,2})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\urcorner\ \llcorner_{3,2})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\urcorner_{2,3})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\urcorner_{4,3})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{4,1})\\(\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{4,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ \llcorner\urcorner_{2,3})\\(\urcorner\ \lrcorner_{3,4})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\lrcorner\ \ulcorner_{4,1})\\(\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\ \gg\Upsilon\succ(\ulcorner\lrcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\end{matrix}\quad\times\quad\begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\lrcorner\ \ulcorner_{4,1})\ \gg\Upsilon\succ(\lrcorner\urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\ \llcorner\urcorner_{2,3})\ \gg\Upsilon\succ(\urcorner\ \lrcorner_{3,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\lrcorner\urcorner_{3,4})\ \gg\Upsilon\succ(\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\ \ulcorner_{1,4})$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3}) \gg \succ (\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\urcorner_{4,3}) \gg \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\lrcorner\ \ulcorner_{1,4}) \gg \succ (\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\urcorner_{4,3}) \gg \succ (\ulcorner\lrcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\lrcorner\ \ulcorner_{1,4}) \gg \succ (\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\lrcorner\urcorner_{4,3}) \gg \succ (\ulcorner\lrcorner_{4,1})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4}) \gg \succ (\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\ (\lrcorner\urcorner_{4,3}) \gg \succ (\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\lrcorner_{1,4}) \gg \succ (\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\lrcorner\urcorner_{4,3}) \gg \succ (\lrcorner\ \ulcorner_{4,1})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

6. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \urcorner\lrcorner_{4,3}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\urcorner_{3,4}) \gg \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2}) \gg \succ (\urcorner\ \lrcorner_{4,3})\\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\ (\lrcorner\urcorner_{3,4}) \gg \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{3,4})\\ (\urcorner\ \llcorner_{3,2}) \gg \succ (\urcorner\ \lrcorner_{4,3})\\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\lrcorner_{1,4}) \gg \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\ \lrcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2}) \gg \succ (\lrcorner\ \ulcorner_{4,1})\\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4})\\(\ulcorner\lrcorner_{1,4}) \gg\!\succ (\llcorner\urcorner_{2,3})\\(\urcorner\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\urcorner\llcorner_{3,2}) \gg\!\succ (\lrcorner\ulcorner_{4,1})\\(\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4})\\(\urcorner\lrcorner_{3,4}) \gg\!\succ (\llcorner\urcorner_{2,3})\\(\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\urcorner\llcorner_{3,2}) \gg\!\succ (\lrcorner\urcorner_{4,3})\\(\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4}) \gg\!\succ (\llcorner\urcorner_{2,3})\\(\lrcorner\urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\lrcorner_{4,3})\\(\urcorner\llcorner_{3,2}) \gg\!\succ (\lrcorner\urcorner_{4,3})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\llcorner\urcorner_{2,3}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\urcorner\lrcorner_{4,3}) \gg\!\succ (\urcorner\llcorner_{3,2})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\llcorner\urcorner_{2,3}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\urcorner\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\urcorner\lrcorner_{4,3}) \gg\!\succ (\urcorner\llcorner_{3,2})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\(\ulcorner\lrcorner_{1,4}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\urcorner\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\urcorner\lrcorner_{3,4}) \gg\!\succ (\lrcorner\ulcorner_{4,1})\\(\urcorner\llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\ulcorner\lrcorner_{1,4}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\llcorner_{3,2})\\(\urcorner\lrcorner_{4,3}) \gg\!\succ (\lrcorner\ulcorner_{4,1})\\(\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\(\urcorner\lrcorner_{3,4}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ulcorner_{4,1})\\(\urcorner\lrcorner_{4,3}) \gg\!\succ (\lrcorner\urcorner_{4,3})\\(\urcorner\llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4})\\(\urcorner\lrcorner_{3,4}) \gg\!\succ (\lrcorner\urcorner_{3,4})\\(\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\llcorner_{3,2})\\(\urcorner\lrcorner_{4,3}) \gg\!\succ (\lrcorner\urcorner_{4,3})\\(\lrcorner\ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\lrcorner_{3,4})\\(\llcorner\urcorner_{2,3}) \gg\!\succ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\urcorner\lrcorner_{4,3})\\(\lrcorner\ulcorner_{1,4}) \gg\!\succ (\urcorner\llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\ \urcorner_{3,4}) \qquad (\lrcorner\ \urcorner_{4,3})$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3}) \\ (\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \\ (\lrcorner\ \urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\ \lrcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$(\lfloor\rceil_{2,3}) \quad (\rceil\lfloor_{4,3})$$
$$(\lceil\lfloor_{1,4}) \gg_Y \succ (\rceil\lfloor_{3,4}) \times (\lfloor\rceil_{4,3}) \gg_Y \succ (\lfloor\lceil_{1,4})$$
$$(\lfloor\rceil_{3,4}) \quad (\rceil\lfloor_{3,2})$$

$$(\lfloor\rceil_{3,4}) \quad (\rceil\lfloor_{3,2})$$
$$(\lceil\lfloor_{1,4}) \gg_Y \succ (\rceil\lfloor_{3,4}) \times (\lfloor\rceil_{4,3}) \gg_Y \succ (\lfloor\lceil_{4,1})$$
$$(\lfloor\rceil_{2,3}) \quad (\rceil\lfloor_{4,3})$$

7. Pre-semiotic dual system

$(\rceil\lfloor_{3,4} \lceil\lceil_{1,2,4}\rfloor\rceil_{1,4} \lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1} \lceil\rfloor_{4,1} \lceil\lceil_{4,2,1}\rfloor\rceil_{4,3})$

Qualitative action

$$(\rceil\lfloor_{3,4}) \quad (\lceil\lceil_{4,2,1})$$
$$(\lfloor\lceil_{1,4}) \gg_Y \succ (\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}) \gg_Y \succ (\lceil\rfloor_{4,1})$$
$$(\lceil\lceil_{1,2,4}) \quad (\lfloor\rceil_{4,3})$$

$$(\lceil\lceil_{1,2,4}) \quad (\lfloor\rceil_{4,3})$$
$$(\lfloor\lceil_{1,4}) \gg_Y \succ (\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}) \gg_Y \succ (\lceil\rfloor_{4,1})$$
$$(\rceil\lfloor_{3,4}) \quad (\lceil\lceil_{4,2,1})$$

$$(\rceil\lfloor_{3,4}) \quad (\lceil\rfloor_{4,1})$$
$$(\lceil\lceil_{1,2,4}) \gg_Y \succ (\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}) \gg_Y \succ (\lfloor\rceil_{4,3})$$
$$(\lfloor\lceil_{1,4}) \quad (\lceil\lceil_{4,2,1})$$

$$(\lfloor\lceil_{1,4}) \quad (\lceil\lceil_{4,2,1})$$
$$(\rceil\lfloor_{3,4}) \gg_Y \succ (\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}) \gg_Y \succ (\lfloor\rceil_{4,3})$$
$$(\lceil\lceil_{1,2,4}) \quad (\lceil\rfloor_{4,1})$$

$$(\lceil\lceil_{1,2,4}) \quad (\lceil\rfloor_{4,1})$$
$$(\rceil\lfloor_{3,4}) \gg_Y \succ (\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}) \gg_Y \succ (\lfloor\rceil_{4,3})$$
$$(\lfloor\lceil_{1,4}) \quad (\lceil\lceil_{4,2,1})$$

Medial action

$$(\rceil\lfloor_{3,4}) \quad (\lceil\lceil_{4,2,1})$$
$$(\lfloor\lceil_{1,2}) \gg_Y \succ (\lfloor\lceil_{1,4}) \times (\lceil\rfloor_{4,1}) \gg_Y \succ (\lceil\lfloor_{2,1})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\ulcorner_{1,2}) \gg\!\succ (\lrcorner\ulcorner_{1,4}) \quad\times\quad (\ulcorner\lrcorner_{4,1}) \gg\!\succ (\ulcorner\llcorner_{2,1})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\ulcorner_{4,2,1})$$

$$(\llcorner\ulcorner_{1,2}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg\!\succ (\lrcorner\ulcorner_{1,4}) \quad\times\quad (\ulcorner\lrcorner_{4,1}) \gg\!\succ (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\llcorner_{2,1})$$

$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\llcorner_{2,1})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg\!\succ (\lrcorner\ulcorner_{1,4}) \quad\times\quad (\ulcorner\lrcorner_{4,1}) \gg\!\succ (\ulcorner\ulcorner_{4,2,1})$$
$$(\llcorner\ulcorner_{1,2}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\llcorner\ulcorner_{1,2}) \qquad (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg\!\succ (\lrcorner\ulcorner_{1,4}) \quad\times\quad (\ulcorner\lrcorner_{4,1}) \gg\!\succ (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\ulcorner\llcorner_{2,1})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\ulcorner\llcorner_{2,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg\!\succ (\lrcorner\ulcorner_{1,4}) \quad\times\quad (\ulcorner\lrcorner_{4,1}) \gg\!\succ (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\ulcorner_{1,2}) \qquad (\ulcorner\ulcorner_{4,2,1})$$

Objectal action

$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\lrcorner_{4,1})$$
$$(\llcorner\ulcorner_{1,2}) \gg\!\succ (\ulcorner\ulcorner_{1,2,4}) \quad\times\quad (\ulcorner\ulcorner_{4,2,1}) \gg\!\succ (\ulcorner\llcorner_{2,1})$$
$$(\lrcorner\ulcorner_{1,4}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\lrcorner\ulcorner_{1,4}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\ulcorner_{1,2}) \gg\!\succ (\ulcorner\ulcorner_{1,2,4}) \quad\times\quad (\ulcorner\ulcorner_{4,2,1}) \gg\!\succ (\ulcorner\llcorner_{2,1})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\lrcorner_{4,1})$$

$$(\llcorner\ulcorner_{1,2}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\lrcorner\ulcorner_{1,4}) \gg\!\succ (\ulcorner\ulcorner_{1,2,4}) \quad\times\quad (\ulcorner\ulcorner_{4,2,1}) \gg\!\succ (\ulcorner\lrcorner_{4,1})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\llcorner_{2,1})$$

$$(\urcorner\lrcorner_{3,4}) \qquad (\ulcorner\llcorner_{2,1})$$
$$(\lrcorner\ulcorner_{1,4}) \gg\!\succ (\ulcorner\ulcorner_{1,2,4}) \quad\times\quad (\ulcorner\ulcorner_{4,2,1}) \gg\!\succ (\ulcorner\lrcorner_{4,1})$$
$$(\llcorner\ulcorner_{1,2}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\lfloor\lceil_{1,2}) \quad\quad (\lceil\rfloor_{4,1})$$
$$(\urcorner\rfloor_{3,4}) \gg \curlyvee \succ (\lceil\lceil_{1,2,4}) \times (\lceil\lceil_{4,2,1}) \gg \curlyvee \succ (\rfloor\urcorner_{4,3})$$
$$(\rfloor\lceil_{1,4}) \quad\quad (\lceil\lfloor_{2,1})$$

$$(\rfloor\lceil_{1,4}) \quad\quad (\lceil\lfloor_{2,1})$$
$$(\urcorner\rfloor_{3,4}) \gg \curlyvee \succ (\lceil\lceil_{1,2,4}) \times (\lceil\lceil_{4,2,1}) \gg \curlyvee \succ (\rfloor\urcorner_{4,3})$$
$$(\lfloor\lceil_{1,2}) \quad\quad (\lceil\rfloor_{4,1})$$

Interpretative action

$$(\lceil\lceil_{1,2,4}) \quad\quad (\lceil\rfloor_{4,1})$$
$$(\lfloor\lceil_{1,2}) \gg \curlyvee \succ (\urcorner\rfloor_{3,4}) \times (\rfloor\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\lfloor_{2,1})$$
$$(\rfloor\lceil_{1,4}) \quad\quad (\lceil\lceil_{4,2,1})$$

$$(\rfloor\lceil_{1,4}) \quad\quad (\lceil\lceil_{4,2,1})$$
$$(\lfloor\lceil_{1,2}) \gg \curlyvee \succ (\urcorner\rfloor_{3,4}) \times (\rfloor\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\rfloor_{4,1})$$
$$(\lceil\lceil_{1,2,4}) \quad\quad (\lceil\lfloor_{2,1})$$

$$(\lfloor\lceil_{1,2}) \quad\quad (\lceil\rfloor_{4,1})$$
$$(\rfloor\lceil_{1,4}) \gg \curlyvee \succ (\urcorner\rfloor_{3,4}) \times (\rfloor\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\lceil_{4,2,1})$$
$$(\lceil\lceil_{1,2,4}) \quad\quad (\lceil\lfloor_{2,1})$$

$$(\lceil\lceil_{1,2,4}) \quad\quad (\lceil\lfloor_{2,1})$$
$$(\rfloor\lceil_{1,4}) \gg \curlyvee \succ (\urcorner\rfloor_{3,4}) \times (\rfloor\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\rfloor_{4,1})$$
$$(\lfloor\lceil_{1,2}) \quad\quad (\lceil\lceil_{4,2,1})$$

$$(\rfloor\lceil_{1,4}) \quad\quad (\lceil\lfloor_{2,1})$$
$$(\lceil\lceil_{1,2,4}) \gg \curlyvee \succ (\urcorner\rfloor_{3,4}) \times (\rfloor\urcorner_{4,3}) \gg \curlyvee \succ (\lceil\lceil_{4,2,1})$$
$$(\lfloor\lceil_{1,2}) \quad\quad (\lceil\rfloor_{4,1})$$

8. Pre-semiotic dual system

$(\urcorner\rfloor_{3,4}\ \lceil\lceil_{1,2,4}\rfloor\ \lceil_{1,4}\ \lfloor\urcorner_{2,3}) \times (\urcorner\ \lfloor_{3,2}\ \lceil\rfloor_{4,1}\ \lceil\lceil_{4,2,1}\rfloor\urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\(\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\(\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\ulcorner\ \ulcorner_{1,2,4})\gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\(\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\ \ulcorner_{1,2,4})\gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\(\urcorner\ \lrcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\(\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \lrcorner_{3,4})\\(\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\(\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\(\lrcorner\ \urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\(\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\(\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\(\ulcorner\ \ulcorner_{1,2,4})\gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\ \urcorner_{4,3})\\(\ulcorner\lrcorner_{4,1})\ \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\(\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{array}{c}(\urcorner\ \lrcorner_{3,4})\\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3})\end{array} \quad \times \quad \begin{array}{c}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\ (\lrcorner\ \urcorner_{4,3})\end{array}$$

$$\begin{array}{c}(\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\ \ulcorner_{1,2,4})\end{array} \quad \times \quad \begin{array}{c}(\ulcorner\ \ulcorner_{4,2,1})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\end{array}$$

$$\begin{array}{c}(\ulcorner\ \ulcorner_{1,2,4})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3})\end{array} \quad \times \quad \begin{array}{c}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\ \ulcorner_{4,2,1})\end{array}$$

Objectal action

$$\begin{array}{c}(\urcorner\ \lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\lrcorner\ \ulcorner_{1,4})\end{array} \quad \times \quad \begin{array}{c}(\ulcorner\lrcorner_{4,1})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\lrcorner\ \urcorner_{4,3})\end{array}$$

$$\begin{array}{c}(\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\urcorner\ \lrcorner_{3,4})\end{array} \quad \times \quad \begin{array}{c}(\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1})\end{array}$$

$$\begin{array}{c}(\llcorner\urcorner_{2,3})\\ (\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\urcorner\ \lrcorner_{3,4})\end{array} \quad \times \quad \begin{array}{c}(\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2})\end{array}$$

$$\begin{array}{c}(\urcorner\ \lrcorner_{3,4})\\ (\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\llcorner\urcorner_{2,3})\end{array} \quad \times \quad \begin{array}{c}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3})\end{array}$$

$$\begin{array}{c}(\llcorner\urcorner_{2,3})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\lrcorner\ \ulcorner_{1,4})\end{array} \quad \times \quad \begin{array}{c}(\ulcorner\lrcorner_{4,1})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\end{array}$$

$$\begin{array}{c}(\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\\ (\llcorner\urcorner_{2,3})\end{array} \quad \times \quad \begin{array}{c}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3})\\ (\ulcorner\lrcorner_{4,1})\end{array}$$

Interpretative action

$$\begin{array}{c}(\ulcorner\ \ulcorner_{1,2,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{3,4})\end{array} \quad \times \quad \begin{array}{c}(\ulcorner\lrcorner_{4,1})\\ (\lrcorner\ \urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\end{array}$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad\qquad (\ulcorner\ \ulcorner_{4,2,1})$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\lrcorner\urcorner_{4,3}) \gg_{\Upsilon} \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \ulcorner_{1,4}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\lrcorner\urcorner_{4,3}) \gg_{\Upsilon} \succ (\ulcorner\lrcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4}) \\ (\lrcorner\ \ulcorner_{1,4}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\urcorner_{4,3}) \gg_{\Upsilon} \succ (\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3}) \gg_{\Upsilon} \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\urcorner_{4,3}) \gg_{\Upsilon} \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

9. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\ \ulcorner_{1,2,4}\lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\ \ulcorner\ \ulcorner_{4,2,1}\lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ (\lrcorner\urcorner_{3,4}) \gg_{\Upsilon} \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg_{\Upsilon} \succ (\urcorner\lrcorner_{4,3}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4}) \\ (\lrcorner\urcorner_{3,4}) \gg_{\Upsilon} \succ (\llcorner\urcorner_{2,3}) \\ (\urcorner\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \gg_{\Upsilon} \succ (\urcorner\lrcorner_{4,3}) \\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg_{\Upsilon} \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\lrcorner_{3,4}) \\ (\urcorner\ \llcorner_{3,2}) \gg_{\Upsilon} \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\,\urcorner_{3,4})\\ (\ulcorner\,\ulcorner_{1,2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\,\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\,\urcorner_{4,3})\\ (\urcorner\,\llcorner_{3,2}) \gg \curlyvee \succ (\ulcorner\,\ulcorner_{4,2,1})\\ (\urcorner\,\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\,\urcorner_{3,4})\\ (\urcorner\,\lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\,\ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\,\ulcorner_{4,2,1})\\ (\urcorner\,\llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{4,3})\\ (\urcorner\,\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\,\ulcorner_{1,2,4})\\ (\urcorner\,\lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\,\urcorner_{3,4})\end{matrix} \times \begin{matrix}(\urcorner\,\lrcorner_{4,3})\\ (\urcorner\,\llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{4,3})\\ (\ulcorner\,\ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\ulcorner\,\ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\,\ulcorner_{4,2,1})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2})\\ (\lrcorner\,\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\,\ulcorner_{1,2,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\urcorner\,\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\,\urcorner_{4,3})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2})\\ (\ulcorner\,\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\,\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\urcorner\,\lrcorner_{3,4})\end{matrix} \times \begin{matrix}(\lrcorner\,\urcorner_{4,3})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\,\ulcorner_{4,2,1})\\ (\urcorner\,\llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\ (\ulcorner\,\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\,\llcorner_{3,2})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\,\ulcorner_{4,2,1})\\ (\lrcorner\,\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\urcorner\,\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\ulcorner\,\ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\,\ulcorner_{4,2,1})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{4,3})\\ (\urcorner\,\llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\,\ulcorner_{1,2,4})\\ (\urcorner\,\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\,\llcorner_{3,2})\\ (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{4,3})\\ (\ulcorner\,\ulcorner_{4,2,1})\end{matrix}$$

Objective action

$$\begin{matrix}(\urcorner\,\lrcorner_{3,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\,\ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\urcorner\,\lrcorner_{4,3})\\ (\ulcorner\,\ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\,\urcorner_{3,4})$$

$$(\lrcorner\,\urcorner_{3,4}) \quad (\lrcorner\,\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg\!\succ (\ulcorner\,\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\,\ulcorner_{4,2,1}) \gg\!\succ (\urcorner\,\llcorner_{3,2})$$
$$(\urcorner\,\lrcorner_{3,4}) \quad (\urcorner\,\lrcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \quad (\lrcorner\,\urcorner_{4,3})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg\!\succ (\ulcorner\,\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\,\ulcorner_{4,2,1}) \gg\!\succ (\urcorner\,\lrcorner_{4,3})$$
$$(\urcorner\,\lrcorner_{3,4}) \quad (\urcorner\,\llcorner_{3,2})$$

$$(\urcorner\,\lrcorner_{3,4}) \quad (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg\!\succ (\ulcorner\,\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\,\ulcorner_{4,2,1}) \gg\!\succ (\urcorner\,\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \quad (\lrcorner\,\urcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \quad (\urcorner\,\lrcorner_{4,3})$$
$$(\urcorner\,\lrcorner_{3,4}) \gg\!\succ (\ulcorner\,\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\,\ulcorner_{4,2,1}) \gg\!\succ (\lrcorner\,\urcorner_{4,3})$$
$$(\lrcorner\,\urcorner_{3,4}) \quad (\urcorner\,\llcorner_{3,2})$$

$$(\lrcorner\,\urcorner_{3,4}) \quad (\urcorner\,\llcorner_{3,2})$$
$$(\urcorner\,\lrcorner_{3,4}) \gg\!\succ (\ulcorner\,\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\,\ulcorner_{4,2,1}) \gg\!\succ (\lrcorner\,\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \quad (\urcorner\,\lrcorner_{4,3})$$

Interpretative action

$$(\ulcorner\,\ulcorner_{1,2,4}) \quad (\urcorner\,\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg\!\succ (\urcorner\,\lrcorner_{3,4}) \quad \times \quad (\lrcorner\,\urcorner_{4,3}) \gg\!\succ (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \quad (\ulcorner\,\ulcorner_{4,2,1})$$

$$(\lrcorner\,\urcorner_{3,4}) \quad (\ulcorner\,\ulcorner_{4,2,1})$$
$$(\llcorner\urcorner_{2,3}) \gg\!\succ (\urcorner\,\lrcorner_{3,4}) \quad \times \quad (\lrcorner\,\urcorner_{4,3}) \gg\!\succ (\urcorner\,\llcorner_{3,2})$$
$$(\ulcorner\,\ulcorner_{1,2,4}) \quad (\urcorner\,\lrcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \quad (\ulcorner\,\ulcorner_{4,2,1})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg\!\succ (\urcorner\,\lrcorner_{3,4}) \quad \times \quad (\lrcorner\,\urcorner_{4,3}) \gg\!\succ (\urcorner\,\lrcorner_{4,3})$$
$$(\ulcorner\,\ulcorner_{1,2,4}) \quad (\urcorner\,\llcorner_{3,2})$$

$$(\ulcorner\,\ulcorner_{1,2,4}) \quad (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg\!\succ (\urcorner\,\lrcorner_{3,4}) \quad \times \quad (\lrcorner\,\urcorner_{4,3}) \gg\!\succ (\urcorner\,\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \quad (\ulcorner\,\ulcorner_{4,2,1})$$

$$\begin{matrix}(\lfloor\rceil_{2,3})\\ (\lceil\lceil_{1,2,4}) \gg_{Y} \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\lfloor\rceil_{4,3}) \gg_{Y} \succ (\lceil\lceil_{4,2,1})\\ (\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4})\\ (\lceil\lceil_{1,2,4}) \gg_{Y} \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{2,3})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{3,2})\\ (\lfloor\rceil_{4,3}) \gg_{Y} \succ (\lceil\lceil_{4,2,1})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

10. Pre-semiotic dual system

$(\rceil\lfloor_{3,4}\ \lceil\rceil_{2,4}\lfloor\rceil_{3,4}\ \lfloor\rceil_{2,3}) \times (\rceil\ \lfloor_{3,2}\rceil\lfloor_{4,3}\rceil\ \lceil_{4,2}\lfloor\rceil_{4,3})$

Qualitative action

$$\begin{matrix}(\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{3,4}) \gg_{Y} \succ (\lfloor\rceil_{2,3})\\ (\lceil\rceil_{2,4})\end{matrix} \times \begin{matrix}(\rceil\ \lceil_{4,2})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\rceil\lfloor_{4,3})\\ (\lfloor\rceil_{4,3})\end{matrix}$$

$$\begin{matrix}(\lceil\rceil_{2,4})\\ (\lfloor\rceil_{3,4}) \gg_{Y} \succ (\lfloor\rceil_{2,3})\\ (\rceil\lfloor_{3,4})\end{matrix} \times \begin{matrix}(\lfloor\rceil_{4,3})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\rceil\lfloor_{4,3})\\ (\rceil\ \lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\rceil\lfloor_{3,4})\\ (\lceil\rceil_{2,4}) \gg_{Y} \succ (\lfloor\rceil_{2,3})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\rceil\ \lceil_{4,2})\\ (\lfloor\rceil_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4})\\ (\lceil\rceil_{2,4}) \gg_{Y} \succ (\lfloor\rceil_{2,3})\\ (\rceil\lfloor_{3,4})\end{matrix} \times \begin{matrix}(\lfloor\rceil_{4,3})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\rceil\ \lceil_{4,2})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{3,4}) \gg_{Y} \succ (\lceil\rceil_{2,4})\\ (\rceil\lfloor_{4,3})\end{matrix} \times \begin{matrix}(\rceil\ \lceil_{4,2})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\lfloor\rceil_{4,3})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\lceil\lceil_{1,2,4})\\ (\rceil\lfloor_{3,4}) \gg_{Y} \succ (\lfloor\rceil_{2,3})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\rceil\ \lfloor_{3,2}) \gg_{Y} \succ (\lfloor\rceil_{4,3})\\ (\lceil\lceil_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{2,3}) \gg_{Y} \succ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\ \lceil_{4,2})\\ (\rceil\lfloor_{4,3}) \gg_{Y} \succ (\rceil\ \lfloor_{3,2})\end{matrix}$$

$$(\ulcorner\urcorner_{2,4}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\ulcorner\urcorner_{2,4}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg_{\forall} \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg_{\forall} \succ (\urcorner\llcorner_{3,2})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\ulcorner_{4,2})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \gg_{\forall} \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg_{\forall} \succ (\urcorner\ulcorner_{4,2})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\ulcorner\urcorner_{2,4}) \gg_{\forall} \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg_{\forall} \succ (\urcorner\ulcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\ulcorner_{4,2})$$
$$(\urcorner\lrcorner_{3,4}) \gg_{\forall} \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg_{\forall} \succ (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\urcorner\lrcorner_{3,4}) \gg_{\forall} \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg_{\forall} \succ (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\ulcorner_{4,2})$$

Objectal action

$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg_{\forall} \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\ulcorner_{4,2}) \gg_{\forall} \succ (\urcorner\llcorner_{3,2})$$
$$(\lrcorner\urcorner_{3,4}) \qquad (\lrcorner\urcorner_{4,3})$$

$$(\lrcorner\urcorner_{3,4}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg_{\forall} \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\ulcorner_{4,2}) \gg_{\forall} \succ (\urcorner\llcorner_{3,2})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\lrcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\lrcorner\urcorner_{4,3})$$
$$(\lrcorner\urcorner_{3,4}) \gg_{\forall} \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\ulcorner_{4,2}) \gg_{\forall} \succ (\urcorner\lrcorner_{4,3})$$
$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\urcorner\lrcorner_{3,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\lrcorner\urcorner_{3,4}) \gg_{\forall} \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\ulcorner_{4,2}) \gg_{\forall} \succ (\urcorner\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\lrcorner\urcorner_{4,3})$$

$$\begin{matrix}(\lfloor\rceil_{2,3})\\ (\rceil\lfloor_{3,4}) \gg \curlyvee \succ (\lceil\rceil_{2,4})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\rceil\lceil_{4,2}) \gg \curlyvee \succ (\lfloor\rceil_{4,3})\\ (\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4})\\ (\rceil\lfloor_{3,4}) \gg \curlyvee \succ (\lceil\rceil_{2,4})\\ (\lfloor\rceil_{2,3})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{3,2})\\ (\rceil\lceil_{4,2}) \gg \curlyvee \succ (\lfloor\rceil_{3,4})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\lceil\rceil_{2,4})\\ (\lfloor\rceil_{2,3}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lfloor_{3,2})\\ (\rceil\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4})\\ (\lfloor\rceil_{2,3}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lceil\rceil_{2,4})\end{matrix} \times \begin{matrix}(\rceil\lceil_{4,2})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lfloor_{3,2})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{2,3})\\ (\lfloor\rceil_{3,4}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lceil\rceil_{2,4})\end{matrix} \times \begin{matrix}(\rceil\lceil_{4,2})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lfloor_{4,3})\\ (\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\lceil\rceil_{2,4})\\ (\lfloor\rceil_{3,4}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{2,3})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{3,2})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lceil_{4,2})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{2,3})\\ (\lceil\rceil_{2,4}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{3,4})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{4,3})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lceil_{4,2})\\ (\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4})\\ (\lceil\rceil_{2,4}) \gg \curlyvee \succ (\rceil\lfloor_{3,4})\\ (\lfloor\rceil_{2,3})\end{matrix} \times \begin{matrix}(\rceil\lfloor_{3,2})\\ (\lfloor\rceil_{4,3}) \gg \curlyvee \succ (\rceil\lceil_{4,2})\\ (\rceil\lfloor_{4,3})\end{matrix}$$

11. Pre-semiotic dual system

$(\rceil\ \lceil_{2,4}\ \lceil\ \lceil_{1,2,4}\rfloor\ \lceil_{1,4}\ \lfloor\ \lceil_{1,2}) \times (\lceil\ \lfloor_{2,1}\ \lceil\rfloor_{4,1}\ \lceil\ \lceil_{4,2,1}\ \lceil\rceil_{4,2})$

Qualitative action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\lrcorner_{4,1})\\(\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4})\\(\lrcorner\ \ulcorner_{1,4})\ \gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\urcorner\ \ulcorner_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\urcorner_{4,2})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\lrcorner_{4,1})\\(\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\(\ulcorner\ulcorner_{1,2,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\ulcorner_{1,2,4})\gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\urcorner\ \ulcorner_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\urcorner_{4,2})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \ulcorner_{2,4})\ \gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\urcorner_{4,2})\\(\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4})\\(\urcorner\ \ulcorner_{2,4})\ \gg\curlyvee\succ(\llcorner\ulcorner_{1,2})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\ulcorner\llcorner_{2,1})\ \gg\curlyvee\succ(\ulcorner\urcorner_{4,2})\\(\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\(\llcorner\ulcorner_{1,2})\ \gg\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\ulcorner\ulcorner_{1,2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\lrcorner_{4,1})\ \gg\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4})\\(\llcorner\ulcorner_{1,2})\ \gg\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \ulcorner_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\urcorner_{4,2})\\(\ulcorner\lrcorner_{4,1})\ \gg\curlyvee\succ(\ulcorner\llcorner_{2,1})\\(\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\ulcorner\ulcorner_{1,2,4})\gg\curlyvee\succ(\lrcorner\ \ulcorner_{1,4})\\(\urcorner\ \ulcorner_{2,4})\end{matrix}\quad\times\quad\begin{matrix}(\ulcorner\urcorner_{4,2})\\(\ulcorner\lrcorner_{4,1})\ \gg\curlyvee\succ(\ulcorner\ulcorner_{4,2,1})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\ulcorner_{1,2,4}) \gg \forall \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \forall \succ (\ulcorner\ulcorner_{4,2,1}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \forall \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ulcorner_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \forall \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \forall \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \forall \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4}) \\ (\llcorner\ulcorner_{1,2}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\llcorner_{2,1}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\ulcorner_{1,2}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\llcorner_{2,1}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\lrcorner\ \ulcorner_{1,4}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4}) \\ (\lrcorner\ \ulcorner_{1,4}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\lrcorner\ \ulcorner_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \forall \succ (\ulcorner\ulcorner_{1,2,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\llcorner_{2,1}) \\ (\ulcorner\ulcorner_{4,2,1}) \gg \forall \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) \\ (\llcorner\ulcorner_{1,2}) \gg \forall \succ (\urcorner\ \ulcorner_{2,4}) \\ \end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\urcorner_{4,2}) \gg \forall \succ (\ulcorner\llcorner_{2,1}) \\ \end{matrix}$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad\qquad (\ulcorner\ \ulcorner_{4,2,1})$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\ulcorner_{1,2})\ \gg_{\Upsilon\succ}(\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\urcorner_{4,2})\ \gg_{\Upsilon\succ}(\ulcorner\ \llcorner_{2,1}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\lrcorner\ \ulcorner_{1,4})\ \gg_{\Upsilon\succ}(\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\urcorner_{4,2})\ \gg_{\Upsilon\succ}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ \llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4}) \\ (\lrcorner\ \ulcorner_{1,4})\ \gg_{\Upsilon\succ}(\urcorner\ \ulcorner_{2,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\ \llcorner_{2,1}) \\ (\ulcorner\urcorner_{4,2})\ \gg_{\Upsilon\succ}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) \\ (\ulcorner\ \ulcorner_{1,2,4})\gg_{\Upsilon\succ}(\urcorner\ \ulcorner_{2,4}) \\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\urcorner_{4,2})\ \gg_{\Upsilon\succ}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\ \llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\gg_{\Upsilon\succ}(\urcorner\ \ulcorner_{2,4}) \\ (\llcorner\ulcorner_{1,2})\end{matrix} \times \begin{matrix}(\ulcorner\ \llcorner_{2,1}) \\ (\ulcorner\urcorner_{4,2})\ \gg_{\Upsilon\succ}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

12. Pre-semiotic dual system

$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\ \ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ \ulcorner_{4,2,1}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4}) \\ (\lrcorner\ \ulcorner_{1,4})\ \gg_{\Upsilon\succ}(\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2})\ \gg_{\Upsilon\succ}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4}) \\ (\lrcorner\ \ulcorner_{1,4})\ \gg_{\Upsilon\succ}(\llcorner\urcorner_{2,3}) \\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \times \begin{matrix}(\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \llcorner_{3,2})\ \gg_{\Upsilon\succ}(\ulcorner\lrcorner_{4,1}) \\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\ \ulcorner_{1,2,4})\gg_{\Upsilon\succ}(\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2})\ \gg_{\Upsilon\succ}(\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \times \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})\\ (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee\ \ \succ (\ulcorner\urcorner_{4,2})\\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \times \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \times \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\ \ulcorner_{4,2,1})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ \ulcorner_{1,2,4})\\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4})\\ (\llcorner\urcorner_{2,3})\end{matrix} \times \begin{matrix}(\urcorner\ \llcorner_{3,2})\\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee\ \ \succ (\ulcorner\urcorner_{4,2})\\ (\ulcorner\ \ulcorner_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4})\end{matrix} \times \begin{matrix}(\ulcorner\lrcorner_{4,1})\\ (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\ \ulcorner_{2,4}) \qquad (\ulcorner\lrcorner_{4,1})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})$$
$$(\urcorner\ \ulcorner_{2,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\urcorner\ \ulcorner_{2,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\lrcorner_{4,1})$$
$$(\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})$$
$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ \ulcorner_{4,2,1}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\lrcorner_{4,1})$$

Interpretative action

$$(\ulcorner\ \ulcorner_{1,2,4}) \qquad (\ulcorner\lrcorner_{4,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\ulcorner\ \ulcorner_{4,2,1})$$

$$(\lrcorner\ \ulcorner_{1,4}) \qquad (\ulcorner\ \ulcorner_{4,2,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\ \ulcorner_{1,2,4}) \qquad (\ulcorner\lrcorner_{4,1})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\ \ulcorner_{4,2,1})$$
$$(\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})$$
$$(\ulcorner\ \ulcorner_{1,2,4}) \qquad (\urcorner\ \llcorner_{3,2})$$

$$(\ulcorner\ \ulcorner_{1,2,4}) \qquad (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \ulcorner_{1,4}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg \curlyvee \succ (\ulcorner\lrcorner_{4,1})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\ \ulcorner_{4,2,1})$$

$$\begin{matrix}(\lfloor\rceil_{2,3})\\(\lceil\lceil_{1,2,4})\gg\succ(\rceil\lceil_{2,4})\\(\lrcorner\lceil_{1,4})\end{matrix}\times\begin{matrix}(\lceil\lrcorner_{4,1})\\(\lceil\rceil_{4,2})\gg\succ(\lceil\lceil_{4,2,1})\\(\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\lceil_{1,4})\\(\lceil\lceil_{1,2,4})\gg\succ(\rceil\lceil_{2,4})\\(\lfloor\rceil_{2,3})\end{matrix}\times\begin{matrix}(\rceil\lfloor_{3,2})\\(\lceil\rceil_{4,2})\gg\succ(\lceil\lceil_{4,2,1})\\(\lceil\lrcorner_{4,1})\end{matrix}$$

13. Pre-semiotic system

$(\rceil\lceil_{2,4}\lceil\lceil_{1,2,4}\lrcorner\rceil_{3,4}\lfloor\rceil_{2,3})\times(\rceil\lfloor_{3,2}\rceil\lrcorner_{4,3}\lceil\lceil_{4,2,1}\lceil\rceil_{4,2})$

Qualitative action

$$\begin{matrix}(\rceil\lceil_{2,4})\\(\lrcorner\rceil_{3,4})\gg\succ(\lfloor\rceil_{2,3})\\(\lceil\lceil_{1,2,4})\end{matrix}\times\begin{matrix}(\lceil\lceil_{4,2,1})\\(\rceil\lfloor_{3,2})\gg\succ(\rceil\lrcorner_{4,3})\\(\lceil\rceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\lceil\lceil_{1,2,4})\\(\lrcorner\rceil_{3,4})\gg\succ(\lfloor\rceil_{2,3})\\(\rceil\lceil_{2,4})\end{matrix}\times\begin{matrix}(\lceil\rceil_{4,2})\\(\rceil\lfloor_{3,2})\gg\succ(\rceil\lrcorner_{4,3})\\(\lceil\lceil_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\rceil\lceil_{2,4})\\(\lceil\lceil_{1,2,4})\gg\succ(\lfloor\rceil_{2,3})\\(\lrcorner\rceil_{3,4})\end{matrix}\times\begin{matrix}(\lceil\lceil_{4,2,1})\\(\rceil\lfloor_{3,2})\gg\succ(\lceil\rceil_{4,2})\\(\rceil\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\rceil_{3,4})\\(\lceil\lceil_{1,2,4})\gg\succ(\lfloor\rceil_{2,3})\\(\rceil\lceil_{2,4})\end{matrix}\times\begin{matrix}(\lceil\rceil_{4,2})\\(\rceil\lfloor_{3,2})\gg\succ(\lceil\lceil_{4,2,1})\\(\rceil\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\rceil_{3,4})\\(\rceil\lceil_{2,4})\gg\succ(\lfloor\rceil_{2,3})\\(\lceil\lceil_{1,2,4})\end{matrix}\times\begin{matrix}(\lceil\lceil_{4,2,1})\\(\rceil\lfloor_{3,2})\gg\succ(\lceil\rceil_{4,2})\\(\rceil\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lceil\lceil_{1,2,4})\\(\rceil\lceil_{2,4})\gg\succ(\lfloor\rceil_{2,3})\\(\lrcorner\rceil_{3,4})\end{matrix}\times\begin{matrix}(\rceil\lrcorner_{4,3})\\(\rceil\lfloor_{3,2})\gg\succ(\lceil\rceil_{4,2})\\(\lceil\lceil_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\rceil\lceil_{2,4})\\(\lfloor\rceil_{2,3})\gg\succ(\lrcorner\rceil_{3,4})\end{matrix}\times\begin{matrix}(\lceil\lceil_{4,2,1})\\(\rceil\lrcorner_{4,3})\gg\succ(\rceil\lfloor_{3,2})\end{matrix}$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\urcorner\ulcorner_{2,4}) \qquad (\ulcorner\ulcorner_{4,2,1})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\ulcorner_{4,2,1})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})$$
$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\urcorner\ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \quad \times \quad (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\ulcorner_{4,2,1})$$

Objectal action

$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\lrcorner\urcorner_{3,4}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\lrcorner\urcorner_{3,4}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\lrcorner_{4,3})$$
$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$
$$(\lrcorner\urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\lrcorner_{4,3})$$
$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$

$$(\urcorner\ulcorner_{2,4}) \qquad (\urcorner\llcorner_{3,2})$$
$$(\lrcorner\urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\ulcorner_{1,2,4}) \quad \times \quad (\ulcorner\ulcorner_{4,2,1}) \gg \curlyvee \succ (\urcorner\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\ulcorner\urcorner_{4,2})$$

$$(\lfloor\rceil_{2,3})$$
$$(\rceil\ \lceil_{2,4}) \gg \curlyvee \succ (\lceil\ \lceil_{1,2,4}) \quad \times \quad (\lceil\ \lceil_{4,2,1}) \gg \curlyvee \succ (\lceil\rceil_{4,2})$$
$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$

$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$
$$(\rceil\ \lceil_{2,4}) \gg \curlyvee \succ (\lceil\ \lceil_{1,2,4}) \quad \times \quad (\lceil\ \lceil_{4,2,1}) \gg \curlyvee \succ (\lceil\rceil_{4,2})$$
$$(\lfloor\rceil_{2,3}) \qquad\qquad (\rceil\ \lrcorner_{4,3})$$

Interpretative action

$$(\lceil\ \lceil_{1,2,4}) \qquad\qquad (\rceil\ \lrcorner_{4,3})$$
$$(\lfloor\rceil_{2,3}) \gg \curlyvee \succ (\rceil\ \lceil_{2,4}) \quad \times \quad (\lceil\rceil_{4,2}) \gg \curlyvee \succ (\rceil\ \lfloor_{3,2})$$
$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\lceil\ \lceil_{4,2,1})$$

$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\lceil\ \lceil_{4,2,1})$$
$$(\lfloor\rceil_{2,3}) \gg \curlyvee \succ (\rceil\ \lceil_{2,4}) \quad \times \quad (\lceil\rceil_{4,2}) \gg \curlyvee \succ (\rceil\ \lrcorner_{4,3})$$
$$(\lceil\ \lceil_{1,2,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$

$$(\lceil\ \lceil_{1,2,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$
$$(\lrcorner\ \rceil_{3,4}) \gg \curlyvee \succ (\rceil\ \lceil_{2,4}) \quad \times \quad (\lceil\rceil_{4,2}) \gg \curlyvee \succ (\lceil\ \lceil_{4,2,1})$$
$$(\lfloor\rceil_{2,3}) \qquad\qquad (\rceil\ \lrcorner_{4,3})$$

$$(\lfloor\rceil_{2,3}) \qquad\qquad (\rceil\ \lrcorner_{4,3})$$
$$(\lceil\ \lceil_{1,2,4}) \gg \curlyvee \succ (\rceil\ \lceil_{2,4}) \quad \times \quad (\lceil\rceil_{4,2}) \gg \curlyvee \succ (\lceil\ \lceil_{4,2,1})$$
$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$

$$(\lrcorner\ \rceil_{3,4}) \qquad\qquad (\rceil\ \lfloor_{3,2})$$
$$(\lceil\ \lceil_{1,2,4}) \gg \curlyvee \succ (\rceil\ \lceil_{2,4}) \quad \times \quad (\lceil\rceil_{4,2}) \gg \curlyvee \succ (\lceil\ \lceil_{4,2,1})$$
$$(\lfloor\rceil_{2,3}) \qquad\qquad (\rceil\ \lrcorner_{4,3})$$

14. Pre-semiotic dual system

$(\rceil\ \lceil_{2,4}\ \lceil\rceil_{2,4}\ \lrcorner\rceil_{3,4}\ \lfloor\rceil_{2,3}) \times (\rceil\ \lfloor_{3,2}\rceil\ \lrcorner_{4,3}\rceil\ \lceil_{4,2}\ \lceil\rceil_{4,2})$

Qualitative action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\lrcorner\ \urcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \ulcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\urcorner_{2,4})\\ (\lrcorner\ \urcorner_{3,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3})\\ (\urcorner\ \ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\ulcorner\urcorner_{2,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \urcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \lrcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\urcorner\ \ulcorner_{4,2})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4})\\ (\ulcorner\urcorner_{2,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\urcorner\ \ulcorner_{4,2})\\ (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \urcorner_{3,4})\\ (\urcorner\ \ulcorner_{2,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \ulcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})\\ (\urcorner\ \lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\urcorner_{2,4})\\ (\urcorner\ \ulcorner_{2,4})\ \gg \curlyvee \succ (\llcorner\urcorner_{2,3})\\ (\lrcorner\ \urcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \lrcorner_{4,3})\\ (\urcorner\ \llcorner_{3,2})\ \gg \curlyvee \succ (\ulcorner\urcorner_{4,2})\\ (\urcorner\ \ulcorner_{4,2})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\ \ulcorner_{2,4})\\ (\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4})\\ (\ulcorner\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \ulcorner_{4,2})\\ (\urcorner\ \lrcorner_{4,3})\ \gg \curlyvee \quad \succ (\urcorner\ \llcorner_{3,2})\\ (\ulcorner\urcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\urcorner_{2,4})\\ (\llcorner\urcorner_{2,3})\ \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\urcorner\ \lrcorner_{4,3})\ \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})\\ (\urcorner\ \ulcorner_{4,2})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3})\\ (\ulcorner\urcorner_{2,4})\ \gg \curlyvee \succ \lrcorner\ \urcorner_{3,4})\\ (\urcorner\ \ulcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\ulcorner\urcorner_{4,2})\\ (\urcorner\ \lrcorner_{4,3})\ \gg \curlyvee \succ (\urcorner\ \ulcorner_{4,2})\\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{array}{c} (\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\urcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{4,2}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \quad \succ (\lrcorner\ \urcorner_{3,4}) \\ (\ulcorner\urcorner_{2,4}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \ulcorner_{4,2}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\ulcorner\urcorner_{2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \ulcorner_{4,2}) \end{array}$$

Objectal action

$$\begin{array}{c} (\urcorner\ \ulcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\lrcorner\ \urcorner_{3,4}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \lrcorner_{4,3}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{c} (\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \end{array} \quad \times \quad \begin{array}{c} (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \end{array} \quad \times \quad \begin{array}{c} (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\urcorner\ \ulcorner_{2,4}) \\ (\lrcorner\ \urcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\lrcorner\ \urcorner_{3,4}) \end{array} \quad \times \quad \begin{array}{c} (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\ulcorner\urcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \ulcorner_{4,2}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\urcorner\ \lrcorner_{4,3}) \end{array}$$

Interpretative action

$$\begin{array}{c} (\ulcorner\urcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\ \ulcorner_{2,4}) \\ \end{array} \quad \times \quad \begin{array}{c} (\urcorner\ \lrcorner_{4,3}) \\ (\ulcorner\urcorner_{4,2}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ \end{array}$$

$$(\lrcorner\ \urcorner_{3,4}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$

$$(\lrcorner\ \urcorner_{3,4}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$
$$(\ \llcorner\urcorner_{2,3}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg_{\Upsilon} \succ (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\urcorner_{2,4}) \qquad\qquad (\urcorner\ \lrcorner_{4,3})$$

$$(\ \llcorner\urcorner_{2,3}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$

$$(\ulcorner\urcorner_{2,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{4,3})$$
$$(\ \llcorner\urcorner_{2,3}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$

$$(\ \llcorner\urcorner_{2,3}) \qquad\qquad (\urcorner\ \lrcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{4,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$

$$(\lrcorner\ \urcorner_{3,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\urcorner_{2,4}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{2,4}) \quad \times \quad (\ulcorner\urcorner_{4,2}) \gg_{\Upsilon} \succ (\urcorner\ \ulcorner_{4,2})$$
$$(\ \llcorner\urcorner_{2,3}) \qquad\qquad (\urcorner\ \lrcorner_{4,3})$$

15. Pre-semiotic dual system

$(\urcorner\ \urcorner_{2,3,4}\ \ulcorner\urcorner_{2,4}\ \lrcorner\ \urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \urcorner\ \lrcorner_{4,3}\ \urcorner\ \ulcorner_{4,2}\ \urcorner\ \urcorner_{4,3,2})$

Qualitative action

$$(\urcorner\ \urcorner_{2,3,4}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \gg_{\Upsilon} \succ (\ \llcorner\urcorner_{2,3}) \quad \times \quad (\urcorner\ \llcorner_{3,2}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \qquad\qquad (\urcorner\ \urcorner_{4,3,2})$$

$$(\ulcorner\urcorner_{2,4}) \qquad\qquad (\urcorner\ \urcorner_{4,3,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \gg_{\Upsilon} \succ (\ \llcorner\urcorner_{2,3}) \quad \times \quad (\urcorner\ \llcorner_{3,2}) \gg_{\Upsilon} \succ (\urcorner\ \lrcorner_{4,3})$$
$$(\urcorner\ \urcorner_{2,3,4}) \qquad\qquad (\urcorner\ \ulcorner_{4,2})$$

$$(\urcorner\ \urcorner_{2,3,4}) \qquad\qquad (\urcorner\ \lrcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \gg_{\Upsilon} \succ (\ \llcorner\urcorner_{2,3}) \quad \times \quad (\urcorner\ \llcorner_{3,2}) \gg \quad \Upsilon \succ (\urcorner\ \ulcorner_{4,2})$$
$$(\lrcorner\ \urcorner_{3,4}) \qquad\qquad (\urcorner\ \urcorner_{4,3,2})$$

$$\begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\,\lceil\urcorner_{2,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\,\llcorner\urcorner_{2,3})\\(\urcorner\,\urcorner_{2,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\urcorner_{4,3,2})\\(\urcorner\,\llcorner_{3,2})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\lceil_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\urcorner\,\urcorner_{2,3,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\,\llcorner\urcorner_{2,3})\\(\,\lceil\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lceil_{4,2})\\(\urcorner\,\llcorner_{3,2})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\urcorner_{4,3,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\,\lceil\urcorner_{2,4})\\(\urcorner\,\urcorner_{2,3,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\,\llcorner\urcorner_{2,3})\\(\lrcorner\,\urcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lrcorner_{4,3})\\(\urcorner\,\llcorner_{3,2})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\urcorner_{4,3,2})\\(\urcorner\,\lceil_{4,2})\end{matrix}$$

Medial action

$$\begin{matrix}(\urcorner\,\urcorner_{2,3,4})\\(\,\llcorner\urcorner_{2,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\,\lceil\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lceil_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\llcorner_{3,2})\\(\urcorner\,\urcorner_{4,3,2})\end{matrix}$$

$$\begin{matrix}(\,\lceil\urcorner_{2,4})\\(\,\llcorner\urcorner_{2,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\urcorner\,\lceil_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\,\lceil\urcorner_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\llcorner_{3,2})\\(\urcorner\,\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\,\llcorner\urcorner_{2,3})\\(\,\lceil\urcorner_{2,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\urcorner\,\lceil_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\,\lceil\urcorner_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\llcorner_{3,2})\\(\urcorner\,\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\,\urcorner_{2,3,4})\\(\,\lceil\urcorner_{2,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\urcorner\,\lceil_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lceil_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\llcorner_{3,2})\\(\urcorner\,\urcorner_{4,3,2})\end{matrix}$$

$$\begin{matrix}(\,\llcorner\urcorner_{2,3})\\(\urcorner\,\urcorner_{2,3,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\,\lceil\urcorner_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lceil_{4,2})\\(\urcorner\,\lrcorner_{4,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\llcorner_{3,2})\\(\urcorner\,\urcorner_{4,3,2})\end{matrix}$$

$$\begin{matrix}(\,\lceil\urcorner_{2,4})\\(\urcorner\,\urcorner_{2,3,4})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\lrcorner\,\urcorner_{3,4})\\(\,\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lrcorner_{4,3})\\(\urcorner\,\llcorner_{3,2})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\urcorner\,\urcorner_{4,3,2})\\(\urcorner\,\lceil_{4,2})\end{matrix}$$

Objectal action

$$\begin{matrix}(\urcorner\,\urcorner_{2,3,4})\\(\,\llcorner\urcorner_{2,3})\end{matrix} \gg \curlyvee \succ \begin{matrix}(\,\lceil\urcorner_{2,4})\\(\urcorner\,\lceil_{4,2})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\,\lrcorner_{4,3})\\(\urcorner\,\llcorner_{3,2})\end{matrix}$$

$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\urcorner_{4,3,2})$$

$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\urcorner_{4,3,2})$$
$$(\llcorner\urcorner_{2,3}) \gg \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\,\ulcorner_{4,2}) \gg \succ (\urcorner\,\llcorner_{3,2})$$
$$(\urcorner\,\urcorner_{2,3,4}) \qquad (\urcorner\,\lrcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\urcorner_{4,3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\,\ulcorner_{4,2}) \gg \succ (\urcorner\,\lrcorner_{4,3})$$
$$(\urcorner\,\urcorner_{2,3,4}) \qquad (\urcorner\,\llcorner_{3,2})$$

$$(\urcorner\,\urcorner_{2,3,4}) \qquad (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\,\ulcorner_{4,2}) \gg \succ (\urcorner\,\lrcorner_{3,4})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\urcorner_{4,3,2})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\lrcorner_{4,3})$$
$$(\urcorner\,\urcorner_{2,3,4}) \gg \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\,\ulcorner_{4,2}) \gg \succ (\urcorner\,\urcorner_{2,3,4})$$
$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\llcorner_{3,2})$$

$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\llcorner_{3,2})$$
$$(\urcorner\,\urcorner_{2,3,4}) \gg \succ (\ulcorner\urcorner_{2,4}) \quad \times \quad (\urcorner\,\ulcorner_{4,2}) \gg \succ (\urcorner\,\urcorner_{4,3,2})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\lrcorner_{4,3})$$

Interpretative action

$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\,\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg \succ (\urcorner\,\urcorner_{2,3,4}) \quad \times \quad (\urcorner\,\urcorner_{4,3,2}) \gg \succ (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\ulcorner_{4,2})$$

$$(\lrcorner\,\urcorner_{3,4}) \qquad (\urcorner\,\ulcorner_{4,2})$$
$$(\llcorner\urcorner_{2,3}) \gg \succ (\urcorner\,\urcorner_{2,3,4}) \quad \times \quad (\urcorner\,\urcorner_{4,3,2}) \gg \succ (\urcorner\,\llcorner_{3,2})$$
$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\,\lrcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\ulcorner_{4,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg \succ (\urcorner\,\urcorner_{2,3,4}) \quad \times \quad (\urcorner\,\urcorner_{4,3,2}) \gg \succ (\urcorner\,\lrcorner_{4,3})$$
$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\,\llcorner_{3,2})$$

$$(\ulcorner\urcorner_{2,4}) \qquad (\urcorner\,\llcorner_{3,2})$$
$$(\lrcorner\,\urcorner_{3,4}) \gg \succ (\urcorner\,\urcorner_{2,3,4}) \quad \times \quad (\urcorner\,\urcorner_{4,3,2}) \gg \succ (\urcorner\,\lrcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad (\urcorner\,\ulcorner_{4,2})$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\rceil\lfloor_{4,3}) & \\ (\lceil\rceil_{2,4}) & \gg\curlyvee\succ(\rceil\rceil_{2,3,4}) & \times & (\rceil\rceil_{4,3,2}) & \gg\curlyvee\succ(\rceil\lceil_{4,2}) & \\ & (\lrcorner\rceil_{3,4}) & & & (\rceil\llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\rceil\llcorner_{3,2}) & \\ (\lceil\rceil_{2,4}) & \gg\curlyvee\succ(\rceil\rceil_{2,3,4}) & \times & (\rceil\rceil_{4,3,2}) & \gg\curlyvee\succ(\rceil\lceil_{4,2}) & \\ & (\lfloor\rceil_{2,3}) & & & (\rceil\lrcorner_{4,3}) & \end{matrix}$$

Chapter Five: The Systemic Night

Notation:

0.1 = A*I(A)	1.0 = I(A)*A	.1. = I(A)
0.2 = A*(A(I(A))	2.0 = A(I(A))*A	.2. = A(I(A))
0.3 = A*I(A(I(A)))	3.0 = I(A(I(A)))*A	.3. = I(A(I(A)))

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A)_{1,3,4}\ A^*I(A)_{1,3}) \times$
$(I(A)^*A_{3,1}\ I(A)I(A)_{4,3,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(I(A)I(A)_{1,3,4}) \qquad (I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(I(A)I(A)_{1,3,4}) \qquad (I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(A(I(A))I(A)_{1,4}) \qquad (I(A)I(A)_{4,3,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(A(I(A))I(A)_{1,4}) \qquad (I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(I(A(I(A)))I(A)_{3,4}) \qquad (I(A)I(A)_{4,3,1})$

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (A^*I(A)_{1,3}) \quad \times \quad \curlywedge \gg (I(A)^*A_{3,1})$
$(I(A(I(A)))I(A)_{3,4}) \qquad (I(A)A(I(A))_{4,1})$

Medial action

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4}) \quad \times \quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(A^*I(A)_{1,3}) \qquad (I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4}) \quad \times \quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(A^*I(A)_{1,3}) \qquad (I(A)I(A(I(A)))_{4,3})$

$$(A{*}I(A)_{1,3}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A(I(A))I(A)_{1,4}) \quad (I(A){*}A_{3,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}I(A)_{1,3}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A){*}A_{3,1})$$

$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{4,1})$$

Objectal action

$$(I(A)I(A)_{1,3,4}) \quad (I(A){*}A_{3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(A{*}I(A)_{1,3}) \quad (I(A)I(A)_{4,3,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A){*}A_{3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(A{*}I(A)_{1,3}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}I(A)_{1,3}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A){*}A_{3,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)I(A)_{4,3,1})$$

$$(A{*}I(A)_{1,3}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A){*}A_{3,1})$$

Interpretative action

$$(A(I(A))I(A)_{1,4}) \quad (I(A){*}A_{3,1})$$

$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A)_{1,3})$ $(I(A)A(I(A))_{4,1})$

$(I(A)I(A)_{1,3,4})$ $(I(A)^*A_{3,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A)_{1,3})$ $(I(A)I(A)_{4,3,1})$

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A)_{4,3,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A)_{1,3,4})$ $(I(A)A(I(A))_{4,1})$

$(A^*I(A)_{1,3})$ $(I(A)I(A)_{4,3,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A)_{1,3,4})$ $(I(A)^*A_{3,1})$

$(I(A)I(A)_{1,3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A)_{4,3,1})$

$(A^*I(A)_{1,3})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A)^*A_{3,1})$

2. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A)_{1,3,4}\ A^*A(I(A))_{1,2}) \times$
$(A(I(A))^*A_{2,1}\ I(A)I(A)_{4,3,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A)_{4,3,1})$
$\curlywedge \gg (A^*A(I(A))_{1,2})$ × $\curlywedge \gg (A(I(A))^*A_{2,1})$
$(I(A)I(A)_{1,3,4})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)I(A)_{4,3,1})$
$\curlywedge \gg (A^*A(I(A))_{1,2})$ × $\curlywedge \gg (A(I(A))^*A_{2,1})$
$(I(A)I(A)_{1,3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A)_{1,3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (A^*A(I(A))_{1,2})$ × $\curlywedge \gg (A(I(A))^*A_{2,1})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A)_{4,3,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (A^*A(I(A))_{1,2})$ × $\curlywedge \gg (A(I(A))^*A_{2,1})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A)_{1,3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A^*A(I(A))_{1,2})$ × $\curlywedge \gg (A(I(A))^*A_{2,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A)I(A)_{4,3,1})$

$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A{*}A(I(A))_{1,2}) \times \curlywedge \gg (A(I(A)){*}A_{2,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{4,1})$$

Medial action

$$(A(I(A))I(A)_{1,4}) \quad (A(I(A)){*}A_{2,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A{*}A(I(A))_{1,2}) \quad (I(A)A(I(A))_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (A(I(A)){*}A_{2,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A(I(A))I(A)_{1,4}) \quad (A(I(A)){*}A_{2,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (A(I(A)){*}A_{2,1})$$

$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (I(A)I(A)_{1,3,4}) \times \curlywedge \gg (I(A)I(A)_{4,3,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{4,1})$$

Objectal action

$$(I(A)I(A)_{1,3,4}) \quad (A(I(A)){*}A_{2,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A)_{4,3,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (A(I(A)){*}A_{2,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A)I(A)_{1,3,4}) \quad (A(I(A)){*}A_{2,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)I(A)_{4,3,1})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A)_{1,4}) \times \curlywedge \gg (I(A)A(I(A))_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (A(I(A)){*}A_{2,1})$$

Interpretative action

$$(A(I(A))I(A)_{1,4}) \quad (A(I(A)){*}A_{2,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A{*}A(I(A))_{1,2}) \quad (I(A)A(I(A))_{4,1})$$

$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(A{*}A(I(A))_{1,2}) \quad (A{*}A(I(A))_{1,2})$$

$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A)A(I(A))_{4,1})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(I(A)I(A)_{1,3,4}) \quad (A(I(A)){*}A_{2,1})$$

$$(I(A)I(A)_{1,3,4}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A)_{4,3,1})$$

$$(A{*}A(I(A))_{1,2}) \quad (I(A)A(I(A))_{4,1})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A(I(A))I(A)_{1,4}) \quad (A(I(A)){*}A_{2,1})$$

3. Pre-semiotic dual system

$$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A)_{1,3,4}\ A{*}I(A(I(A)))_{2,3}) \times$$
$$(I(A(I(A)))\ast A_{3,2}\ I(A)I(A)_{4,3,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$$

Qualitative Action

$$(A(I(A))I(A)_{1,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))\ast A_{3,2})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A)A(I(A))_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A)I(A)_{4,3,1})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))\ast A_{3,2})$$
$$(I(A)I(A)_{1,3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ $\times$
$(A(I(A))I(A)_{1,4})$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A)_{4,3,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ $\times$
$(A(I(A))I(A)_{1,4})$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ $\times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A)_{4,3,1})$

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ $\times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)A(I(A))_{4,1})$

Medial action

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(A(I(A))I(A)_{1,4})$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A)_{4,3,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(A(I(A))I(A)_{1,4})$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(I(A(I(A)))*A_{3,2})$

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (I(A)I(A)_{1,3,4})$ $\times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A)I(A)_{4,3,1})$
$(I(A)A(I(A))_{4,1})$

Objectal action

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A)_{4,3,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(I(A)I(A)_{1,3,4})$

$(I(A)I(A)_{4,3,1})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(I(A)I(A)_{1,3,4})$

$(I(A)I(A)_{4,3,1})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A)_{4,3,1})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times$
$(I(A(I(A)))I(A)_{3,4})$

$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A(I(A)))*A_{3,2})$

Interpretative action

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{4,1})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A)_{4,3,1})$

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$
$(I(A)I(A)_{1,3,4})$

$(I(A)I(A)_{4,3,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{4,1})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$
$(I(A)I(A)_{1,3,4})$

$(I(A)I(A)_{4,3,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(I(A)I(A)_{1,3,4})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$
$(A(I(A))I(A)_{1,4})$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A)_{4,3,1})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \quad \times$

$(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))*A_{3,2})$

4. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)A(I(A))_{1,4}\ A*A(I(A))_{1,2}) \times$
$(A(I(A))*A_{2,1}\ A(I(A))I(A)_{4,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A*A(I(A))_{1,2}) \quad \times \quad \curlywedge \gg (A(I(A))*A_{2,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

Medial action

$(A(I(A))I(A)_{1,4})$ $(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A*A(I(A))_{1,2})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A*A(I(A))_{1,2})$ $(I(A)I(A(I(A)))_{4,3})$

$(A*A(I(A))_{1,2})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))*A_{2,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

$$\begin{array}{lcl} \lambda \gg (I(A)A(I(A))_{1,4}) & \times & \lambda \gg (A(I(A))I(A)_{4,1}) \\ (A(I(A))I(A)_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{lcl} (A^{*}A(I(A))_{1,2}) & & (I(A)I(A(I(A)))_{4,3}) \\ \lambda \gg (I(A)A(I(A))_{1,4}) & \times & \lambda \gg (A(I(A))I(A)_{4,1}) \\ (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))^{*}A_{2,1}) \end{array}$$

$$\begin{array}{lcl} (A(I(A))I(A)_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \\ \lambda \gg (I(A)A(I(A))_{1,4}) & \times & \lambda \gg (A(I(A))I(A)_{4,1}) \\ (I(A(I(A)))I(A)_{3,4}) & & (I(A)A(I(A))_{4,1}) \end{array}$$

Objectal action

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (A(I(A))^{*}A_{2,1}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (A^{*}A(I(A))_{1,2}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{lcl} (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))^{*}A_{2,1}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (A^{*}A(I(A))_{1,2}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{lcl} (A^{*}A(I(A))_{1,2}) & & (A(I(A))I(A)_{4,1}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (I(A)A(I(A))_{1,4}) & & (A(I(A))^{*}A_{2,1}) \end{array}$$

$$\begin{array}{lcl} (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))I(A)_{4,1}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (I(A)A(I(A))_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{lcl} (A^{*}A(I(A))_{1,2}) & & (I(A)I(A(I(A)))_{4,3}) \\ \lambda \gg (A(I(A))I(A)_{1,4}) & \times & \lambda \gg (I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))^{*}A_{2,1}) \end{array}$$

Interpretative action

$$\begin{array}{lcl} (A(I(A))I(A)_{1,4}) & & (A(I(A))^{*}A_{2,1}) \\ \lambda \gg (I(A(I(A)))I(A)_{3,4}) & \times & \lambda \gg (I(A)I(A(I(A)))_{4,3}) \\ (A^{*}A(I(A))_{1,2}) & & (I(A)A(I(A))_{4,1}) \end{array}$$

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (A(I(A))^{*}A_{2,1}) \\ \lambda \gg (I(A(I(A)))I(A)_{3,4}) & \times & \lambda \gg (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$(A^*A(I(A))_{1,2})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$

$(A^*A(I(A))_{1,2})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(A(I(A))^*A_{2,1})$

$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$

$(A^*A(I(A))_{1,2})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))^*A_{2,1})$

5. Pre-Semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)A(I(A))_{1,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ A(I(A))I(A)_{4,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualtitative action

$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})|$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

Medial action

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A*I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A*I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$

$(A*I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(A*I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge \gg (A(I(A))I(A)_{4,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))*A_{3,2})$

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (I(A)A(I(A))_{1,4})$ × $\curlywedge A(I(A))I(A)_{4,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

Objectal action

$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(A*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(A*I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$

$(A*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))I(A)_{4,1})$

$(A^*I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ $\times$ $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))^*A_{3,2})$

Interpretative action

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))^*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$

$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))^*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$

$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))^*A_{3,2})$

$(I(A)A(I(A))_{1,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(A(I(A))I(A)_{4,1})$

$(A^*I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ $\times$ $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))^*A_{3,2})$

6. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A(I(A)))_{3,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$ $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$ $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$ $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (A^{*}I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^{*}A_{3,2})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A^{*}I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^{*}A_{3,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A^{*}I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^{*}A_{3,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

Medial action

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))^{*}A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A^{*}I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))^{*}A_{3,2})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A^{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$

$(A^{*}I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))^{*}A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(A^{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))^{*}A_{3,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times \quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A)A(I(A))_{4,1})$

Objectal action

$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))^{*}A_{3,2})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times \quad \curlywedge \gg (I(A)A(I(A))_{4,1})$
$(A^{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))^{*}A_{3,2})$
$\quad \curlywedge \gg (A(I(A))I(A)_{1,4}) \quad \times \quad \curlywedge \gg (I(A)A(I(A))_{4,1})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))I(A)_{1,4})$ × $\curlywedge \gg (I(A)A(I(A))_{4,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))*A_{3,2})$

Interpretative action

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A{*}I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)A(I(A))_{4,1})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A)A(I(A))_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))I(A)_{1,4})$ $(I(A(I(A)))*A_{3,2})$

7. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)A(I(A))_{1,4}\ A^{*}A(I(A))_{1,2}) \times$
$(A(I(A))^{*}A_{2,1}\ A(I(A))I(A)_{4,1}\ A(I(A))A(I(A))_{4,2,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(I(A)A(I(A))_{1,4})$
$\times$
$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(I(A)A(I(A))_{1,4})$
$\times$
$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(A(I(A))A(I(A))_{1,2,4})$
$\times$
$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(A(I(A))A(I(A))_{1,2,4})$
$\times$
$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(I(A(I(A)))I(A)_{3,4})$
$\times$
$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(A(I(A))I(A)_{4,1})$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A^{*}A(I(A))_{1,2})$
$(I(A(I(A)))I(A)_{3,4})$
$\times$
$(I(A)I(A(I(A)))_{4,3})$
$\quad \curlywedge \gg (A(I(A))^{*}A_{2,1})$
$(A(I(A))A(I(A))_{4,2,1})$

Medial action

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4})$
$(A^{*}A(I(A))_{1,2})$
$\times$
$(A(I(A))^{*}A_{2,1})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4})$
$(A^{*}A(I(A))_{1,2})$
$\times$
$(A(I(A))^{*}A_{2,1})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(I(A)I(A(I(A)))_{4,3})$

$(A^{*}A(I(A))_{1,2})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4})$
$(A(I(A))A(I(A))_{1})$
$\times$
$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))^{*}A_{2,1})$

$(I(A(I(A)))I(A)_{3,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4})$
$(A(I(A))A(I(A))_{1,2,4})$
$(A^{*}A(I(A))_{1,2})$
$\times$
$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{4,3})$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (A(I(A))*A_{2,1})$$

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (I(A)A(I(A))_{1,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (A(I(A))A(I(A))_{4,2,1})$$

Objectal action

$$(I(A)A(I(A))_{1,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A*A(I(A))_{1,2}) \quad \times \quad (A(I(A))*A_{2,1}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))I(A)_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A*A(I(A))_{1,2}) \quad \times \quad (A(I(A))*A_{2,1}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A*A(I(A))_{1,2}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad (A(I(A))I(A)_{4,1}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))*A_{2,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad (A(I(A))I(A)_{4,1}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(I(A)A(I(A))_{1,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))I(A)_{4,1})$$

$$(A*A(I(A))_{1,2}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))*A_{2,1})$$

Interpretative action

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (I(A(I(A)))I(A)_{3,4}) \quad (A*A(I(A))_{1,2}) \quad \times \quad (A(I(A))*A_{2,1}) \quad \lambda \gg (I(A)I(A(I(A)))_{4,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$

$$(I(A)A(I(A))_{1,4}) \quad \lambda \gg (I(A(I(A)))I(A)_{3,4}) \quad (A*A(I(A))_{1,2}) \quad \times \quad (A(I(A))*A_{2,1}) \quad \lambda \gg (I(A)I(A(I(A)))_{4,3}) \quad (A(I(A))I(A)_{4,1})$$

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (I(A(I(A)))I(A)_{3,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad (A(I(A))I(A)_{4,1}) \quad \lambda \gg (I(A)I(A(I(A)))_{4,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$

$$(A*A(I(A))_{1,2}) \quad (A(I(A))I(A)_{4,1})$$

$$\begin{array}{lcl} \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) & \times & \curlywedge \gg (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{1,4}) & & (A(I(A))^*A_{2,1}) \end{array}$$

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) & \times & \curlywedge \gg (I(A)I(A(I(A)))_{4,3}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{lcl} (A^*A(I(A))_{1,2}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) & \times & \curlywedge \gg (I(A)I(A(I(A)))_{4,3}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))^*A_{2,1}) \end{array}$$

8. Pre-semiotic dual system

$$(I(A(I(A)))I(A)_{3,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)A(I(A))_{1,4}\ A^*I(A(I(A)))_{2,3}) \times (I(A(I(A)))^*A_{3,2}\ A(I(A))I(A)_{4,1}\ A(I(A))A(I(A))_{4,2,1}\ I(A)I(A(I(A)))_{4,3})$$

Qualitative action

$$\begin{array}{lcl} (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \end{array}$$

$$\begin{array}{lcl} (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))I(A)_{4,1}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (I(A)A(I(A))_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{lcl} (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{lcl} (I(A)A(I(A))_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{lcl} (A(I(A))A(I(A))_{1,2,4}) & & (I(A)I(A(I(A)))_{4,3}) \\ \curlywedge \gg (A^*I(A(I(A)))_{2,3}) & \times & \curlywedge \gg (I(A(I(A)))^*A_{3,2}) \\ (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))A(I(A))_{4,2,1}) \end{array}$$

Medial action

$$\begin{array}{lcl} (A(I(A))A(I(A))_{1,2,4}) & & (I(A(I(A)))^*A_{3,2}) \\ \curlywedge \gg (I(A)A(I(A))_{1,4}) & \times & \curlywedge \gg (A(I(A))I(A)_{4,1}) \\ (A^*I(A(I(A)))_{2,3}) & & (A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))I(A)_{3,4}) & & (I(A(I(A)))^*A_{3,2}) \end{array}$$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$\lambda \gg (I(A)A(I(A))_{1,4}) \quad (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (A(I(A))A(I(A))_{4,2,1})$$

Objectal action

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad \lambda \gg (A(I(A))I(A)_{4,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))I(A)_{4,1})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)A(I(A))_{1,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (A(I(A))I(A)_{4,1})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$\lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))*A_{3,2})$$

Interpretative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))A(I(A))_{1,2,4})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(A*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A)A(I(A))_{1,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))A(I(A))_{1,2,4})$ $(A(I(A))I(A)_{4,1})$

$(A*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))*A_{3,2})$

9. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)I(A(I(A)))_{4,3}\ A*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ A(I(A))A(I(A))_{4,2,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\curlywedge \gg (A*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))I(A)_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\curlywedge \gg (A*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))*A_{3,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$$\lambda \gg (A{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad \lambda \gg (I(A(I(A)))*A_{3,2}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (A{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (I(A(I(A)))*A_{3,2}) \quad (A(I(A))A(I(A))_{4,2,1})$$

Medial action

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad (I(A(I(A)))*A_{3,2}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad (I(A(I(A)))*A_{3,2}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}I(A(I(A)))_{2,3}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad (A(I(A))A(I(A))_{4,2,1}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad (A(I(A))A(I(A))_{4,2,1}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}I(A(I(A)))_{2,3}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (I(A(I(A)))*A_{3,2})$$

$$(A(I(A))A(I(A))_{1,2,4}) \quad \lambda \gg (I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))I(A)_{3,4}) \quad \times \quad (I(A)I(A(I(A)))_{4,3}) \quad \lambda \gg (I(A(I(A)))I(A)_{4,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$

Objectal action

$$(I(A)I(A(I(A)))_{3,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad (I(A(I(A)))*A_{3,2}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (A{*}I(A(I(A)))_{2,3}) \quad \times \quad (I(A(I(A)))*A_{3,2}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A{*}I(A(I(A)))_{2,3}) \quad \lambda \gg (A(I(A))A(I(A))_{1,2,4}) \quad (I(A)I(A(I(A)))_{3,4}) \quad \times \quad (I(A(I(A)))I(A)_{4,3}) \quad \lambda \gg (A(I(A))A(I(A))_{4,2,1}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4})$ × $\curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4})$ × $\curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A^*I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4})$ × $\curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))^*A_{3,2})$

Interpretative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))^*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))^*A_{3,2})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A^*I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(A^*I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))^*A_{3,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{1,2,4})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))A(I(A))_{4,2,1})$ $(A^*I(A(I(A)))_{2,3})$

$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$
$\curlywedge \gg (I(A(I(A)))I(A)_{3,4})$ × $\curlywedge \gg (I(A)I(A(I(A)))_{4,3})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))^*A_{3,2})$

10. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\curlywedge \gg (A^*I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$

$\curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$
$\curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$
$\curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (A{*}I(A(I(A)))_{2,3})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$

Medial action

$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A(I(A))){*}A_{3,2})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))A(I(A))_{4,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A))){*}A_{3,2})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))A(I(A))_{4,2})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A(I(A))){*}A_{3,2})$

$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A)I(A(I(A)))_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A))){*}A_{3,2})$

$(A(I(A))I(A(I(A)))_{2,4})$ $(I(A)I(A(I(A)))_{4,3})$
$\curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ × $\curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A)_{3,4})$ $(I(A(I(A)))A(I(A))_{4,2})$

Objectal action

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A)I(A(I(A)))_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$

Interpretative action

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$
$$\curlywedge \gg (I(A(I(A)))I(A)_{3,4}) \times \curlywedge \gg (I(A)I(A(I(A)))_{4,3})$$
$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(A{*}I(A(I(A)))_{2,3}) & & (I(A(I(A)))A(I(A))_{4,2}) \\ \quad \curlywedge \gg (I(A(I(A)))I(A)_{3,4}) & \times & \quad \curlywedge \gg (I(A)I(A(I(A)))_{4,3}) \\ (A(I(A))I(A(I(A)))_{2,4}) & & (I(A(I(A)))*A_{3,2})\end{matrix}$$

11. Pre-semiotic dual system

$$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)A(I(A))_{1,4}\ A{*}A(I(A))_{1,2}) \times (A(I(A))*A_{2,1}\ A(I(A))I(A)_{4,1}\ A(I(A))A(I(A))_{4,2,1}\ A(I(A))I(A(I(A)))_{4,2})$$

Qualitative action

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))I(A)_{4,1}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (I(A)A(I(A))_{1,4}) & & (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(I(A)A(I(A))_{1,4}) & & (A(I(A))I(A(I(A)))_{4,2}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))I(A)_{4,1})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A(I(A)))_{4,2}) \\ \quad \curlywedge \gg (A{*}A(I(A))_{1,2}) & \times & \quad \curlywedge \gg (A(I(A))*A_{2,1}) \\ (I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))*A_{2,1}) \\ \quad \curlywedge \gg (I(A)A(I(A))_{1,4}) & \times & \quad \curlywedge \gg (A(I(A))I(A)_{4,1}) \\ (A{*}A(I(A))_{1,2}) & & (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) & & (A(I(A))*A_{2,1}) \\ \quad \curlywedge \gg (I(A)A(I(A))_{1,4}) & \times & \quad \curlywedge \gg (A(I(A))I(A)_{4,1}) \\ (A{*}A(I(A))_{1,2}) & & (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(A{*}A(I(A))_{1,2}) & & (A(I(A))A(I(A))_{4,2,1}) \\ \quad \curlywedge \gg (I(A)A(I(A))_{1,4}) & \times & \quad \curlywedge \gg (A(I(A))I(A)_{4,1}) \\ (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))*A_{2,1})\end{matrix}$$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times$
$(A(I(A))A(I(A))_{1,2,4})$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(A*A(I(A))_{1,2})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))*A_{2,1})$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (I(A)A(I(A))_{1,4}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))I(A)_{4,1})$
$(A(I(A))A(I(A))_{4,2,1})$

Objectal action

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(A*A(I(A))_{1,2})$

$(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(A*A(I(A))_{1,2})$

$(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(A*A(I(A))_{1,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(I(A)A(I(A))_{1,4})$

$(A(I(A))I(A)_{1,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))*A_{2,1})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(I(A)A(I(A))_{1,4})$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))I(A)_{4,1})$

$(A*A(I(A))_{1,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))*A_{2,1})$

Interpretative action

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times$
$(A*A(I(A))_{1,2})$

$(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{4,2,1})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times$
$(A*A(I(A))_{1,2})$

$(A(I(A))*A_{2,1})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))I(A)_{4,1})$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$
$(I(A)A(I(A))_{1,4})$

$\times$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{4,2,1})$

$(A^*A(I(A))_{1,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$
$(I(A)A(I(A))_{1,4})$

$\times$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))^*A_{2,1})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$
$(A(I(A))A(I(A))_{1,2,4})$

$\times$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))I(A)_{4,1})$

$(A^*A(I(A))_{1,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$
$(A(I(A))A(I(A))_{1,2,4})$

$\times$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))^*A_{2,1})$

12. Pre-semiotic dual system

$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)A(I(A))_{1,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ A(I(A))I(A)_{4,1}\ A(I(A))A(I(A))_{4,2,1}\ A(I(A))I(A(I(A)))_{4,2})$

Qualitative action

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(I(A)A(I(A))_{1,4})$

$\times$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(I(A)A(I(A))_{1,4})$

$\times$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(A(I(A))A(I(A))_{1,2,4})$

$\times$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A)_{4,1})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(A(I(A))I(A(I(A)))_{2,4})$

$\times$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))A(I(A))_{1,2,4})$

$(I(A)A(I(A))_{1,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(I(A(I(A)))A(I(A))_{2,4})$

$\times$

$(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A)_{4,1})$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$
$(I(A(I(A)))A(I(A))_{2,4})$

$\times$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))A(I(A))_{4,2,1})$

Medial action

$$(A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))A(I(A))_{4,2,1})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(A(I(A))A(I(A))_{1,2,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (A(I(A))A(I(A))_{4,2,1})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(A(I(A))A(I(A))_{1,2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(A(I(A))A(I(A))_{1,2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (I(A)A(I(A))_{1,4}) \times \curlywedge \gg (A(I(A))I(A)_{4,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (A(I(A))A(I(A))_{4,2,1})$$

Objectal action

$$(I(A)A(I(A))_{1,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$$
$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A)_{4,1})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$$
$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A)_{4,1})$$
$$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A)A(I(A))_{1,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (A(I(A))I(A)_{4,1})$$
$$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A)A(I(A))_{1,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)A(I(A))_{1,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (A(I(A))I(A)_{4,1})$$

$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \times \quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))A(I(A))_{2,4})$ $(I(A(I(A)))^*A_{3,2})$

Interpretative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))^*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))^*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$

$(A(I(A))A(I(A))_{1,2,4})$ $(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A)A(I(A))_{1,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))I(A)_{4,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A)A(I(A))_{1,4})$ $(I(A(I(A)))^*A_{3,2})$

$(I(A)A(I(A))_{1,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(A(I(A))I(A)_{4,1})$

$(A^*I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))^*A_{3,2})$

13. Pre-semiotic dual system

$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)I(A(I(A)))_{3,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ A(I(A))A(I(A))_{4,2,1}\ A(I(A))I(A(I(A)))_{4,2})$

Qualitative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))A(I(A))_{2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3}) \quad \times \quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \quad \times$
$(A(I(A))A(I(A))_{1,2,4})$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A))){*}A_{3,2})$
$(A(I(A))A(I(A))_{4,2,1})$

Medial action

$(A(I(A))A(I(A))_{1,2,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))A(I(A))_{4,2,1})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A(I(A))A(I(A))_{1,2,4})$

$(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A(I(A))A(I(A))_{1,2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(A(I(A))A(I(A))_{4,2,1})$

Objectal action

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))A(I(A))_{2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))A(I(A))_{2,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (A(I(A))A(I(A))_{1,2,4}) \quad \times \quad \curlywedge \gg (A(I(A))A(I(A))_{4,2,1})$
$(I(A(I(A)))A(I(A))_{2,4})$ $(I(A(I(A)))*A_{3,2})$

Interpretative action

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A{*}I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$

$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$

$(A{*}I(A(I(A)))_{2,3})$ $(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A)I(A(I(A)))_{3,4})$ $(I(A(I(A)))*A_{3,2})$

$(I(A)I(A(I(A)))_{3,4})$ $(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))I(A)_{4,3})$

$(A{*}I(A(I(A)))_{2,3})$ $(A(I(A))A(I(A))_{4,2,1})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \quad \times \quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(A(I(A))A(I(A))_{1,2,4})$ $(I(A(I(A)))*A_{3,2})$

14. Pre-semiotic dual system

$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A{*}I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ A(I(A))I(A(I(A)))_{4,2})$

Qualitative action

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(A(I(A))I(A(I(A)))_{2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (A{*}I(A(I(A)))_{2,3}) \times \curlywedge \gg (I(A(I(A)))*A_{3,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

Medial action

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(A{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(A{*}I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A{*}I(A(I(A)))_{2,3}) \quad (I(A(I(A)))A(I(A))_{4,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(A(I(A))I(A(I(A)))_{2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A{*}I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \times \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

Objectal action

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(A*I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A*I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))*A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A*I(A(I(A)))_{2,3}) \quad (A(I(A))I(A(I(A)))_{4,2})$$
$$\curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \times \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$

Interpretative action

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$$
$$(A*I(A(I(A)))_{2,3}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))*A_{3,2})$$
$$\curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$$
$$(A*I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))A(I(A))_{4,2})$$

$$(A*I(A(I(A)))_{2,3}) \quad (I(A(I(A)))I(A)_{4,3})$$
$$\curlywedge \gg (I(A(I(A)))A(I(A))_{2,4}) \times \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \quad (I(A(I(A)))*A_{3,2})$$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$ $\times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(A^*I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{2,4})$ $\times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{4,2})$
$(I(A(I(A)))^*A_{3,2})$

15. Pre-semiotic dual system

$(I(A(I(A)))I(A(I(A)))_{2,3,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ I(A(I(A)))I(A(I(A)))_{4,3,2})$

Qualitative action

$(A(I(A))I(A(I(A)))_{2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(I(A)I(A(I(A)))_{3,4})$

$(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))A(I(A))_{4,2})$

$(I(A(I(A)))I(A(I(A)))_{2,3,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(I(A)I(A(I(A)))_{3,4})$

$(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))I(A(I(A)))_{4,3,2})$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))A(I(A))_{2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(A(I(A))I(A(I(A)))_{4,2})$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(A(I(A))I(A(I(A)))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(A(I(A))I(A(I(A)))_{2,4})$
$\quad \curlywedge \gg (A^*I(A(I(A)))_{2,3})$ $\times$
$(I(A(I(A)))A(I(A))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))^*A_{3,2})$
$(I(A(I(A)))A(I(A))_{4,2})$

Medial action

$(A(I(A))I(A(I(A)))_{2,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ $\times$
$(A^*I(A(I(A)))_{2,3})$

$(I(A(I(A)))^*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))A(I(A))_{4,2})$

$(I(A(I(A)))I(A(I(A)))_{2,3,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4})$ $\times$
$(A^*I(A(I(A)))_{2,3})$

$(I(A(I(A)))^*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A(I(A)))_{4,3,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A(I(A)))_{2,3,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(A(I(A))I(A(I(A)))_{2,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))I(A(I(A)))_{4,3,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(I(A(I(A)))I(A(I(A)))_{2,3,4})$

$(I(A(I(A)))I(A(I(A)))_{4,3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(A(I(A))I(A(I(A)))_{2,4})$
$\quad \curlywedge \gg (I(A)I(A(I(A)))_{3,4}) \quad \times$
$(I(A(I(A)))I(A(I(A)))_{2,3,4})$

$(I(A(I(A)))I(A(I(A)))_{4,3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))A(I(A))_{4,2})$

Objectal action

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(I(A(I(A)))I(A(I(A)))_{2,3,4})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))I(A(I(A)))_{4,3,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(I(A)I(A(I(A)))_{3,4})$

$(I(A(I(A)))I(A)_{4,3})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))*A_{3,2})$

$(I(A(I(A)))I(A(I(A)))_{2,3,4})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(I(A)I(A(I(A)))_{3,4})$

$(I(A(I(A)))I(A(I(A)))_{4,3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))I(A)_{4,3})$

$(I(A)I(A(I(A)))_{3,4})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(I(A(I(A)))I(A(I(A)))_{2,3,4})$

$(I(A(I(A)))A(I(A))_{4,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A)_{4,3})$
$(I(A(I(A)))*A_{3,2})$

$(A{*}I(A(I(A)))_{2,3})$
$\quad \curlywedge \gg (A(I(A))I(A(I(A)))_{2,4}) \quad \times$
$(I(A(I(A)))I(A(I(A)))_{2,3,4})$

$(I(A(I(A)))I(A(I(A)))_{4,3,2})$
$\quad \curlywedge \gg (I(A(I(A)))A(I(A))_{4,2})$
$(I(A(I(A)))*A_{3,2})$

Interpretative action

$(A(I(A))I(A(I(A)))_{2,4})$
$\quad \curlywedge \gg (I(A(I(A)))I(A(I(A)))_{2,3,4}) \quad \times$
$(A{*}I(A(I(A)))_{2,3})$

$(I(A(I(A)))*A_{3,2})$
$\quad \curlywedge \gg (I(A(I(A)))I(A(I(A)))_{4,3,2})$
$(I(A(I(A)))A(I(A))_{4,2})$

(I(A)I(A(I(A)))$_{3,4}$) (I(A(I(A)))*A$_{3,2}$)
⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{2,3,4}$) × ⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{4,3,2}$)
(A*I(A(I(A)))$_{2,3}$) (I(A(I(A)))I(A)$_{4,3}$)

(A(I(A))I(A(I(A)))$_{2,4}$) (I(A(I(A)))I(A)$_{4,3}$)
⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{2,3,4}$) × ⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{4,3,2}$)
(I(A)I(A(I(A)))$_{3,4}$) (I(A(I(A)))A(I(A))$_{4,2}$)

(A*I(A(I(A)))$_{2,3}$) (I(A(I(A)))I(A)$_{4,3}$)
⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{2,3,4}$) × ⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{4,3,2}$)
(I(A)I(A(I(A)))$_{3,4}$) (I(A(I(A)))*A$_{3,2}$)

(I(A)I(A(I(A)))$_{3,4}$) (I(A(I(A)))A(I(A))$_{4,2}$)
⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{2,3,4}$) × ⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{4,3,2}$)
(A(I(A))I(A(I(A)))$_{2,4}$) (I(A(I(A)))I(A)$_{4,3}$)

(A*I(A(I(A)))$_{2,3}$) (I(A(I(A)))A(I(A))$_{4,2}$)
⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{2,3,4}$) × ⋏ ≫ (I(A(I(A)))I(A(I(A)))$_{4,3,2}$)
(A(I(A))I(A(I(A)))$_{2,4}$) (I(A(I(A)))*A$_{3,2}$)

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(I(A(I(A)))I(A) A(I(A))I(A) I(A)I(A) A*I(A)) ×
(I(A)*A I(A)I(A) I(A)A(I(A)) I(A)I(A(I(A))))

Qualitative action

(I(A(I(A)))I(A)$_{3,4}$) (I(A)A(I(A))$_{4,1}$)
(I(A)I(A)$_{1,3,4}$) ≫ ⋎ ≻ (A*I(A)$_{1,3}$) × (I(A)*A$_{3,1}$) ≫ ⋎ ≻ (I(A)I(A)$_{4,3,1}$)
(A(I(A))I(A)$_{1,4}$) (I(A)I(A(I(A)))$_{4,3}$)

(A(I(A))I(A)$_{1,4}$) (I(A)I(A(I(A)))$_{4,3}$)
(I(A)I(A)$_{1,4,3}$) ≫ ⋎ ≻ (A*I(A)$_{1,3}$) × (I(A)*A$_{3,1}$) ≫ ⋎ ≻ (I(A)I(A)$_{4,3,1}$)
(I(A(I(A)))I(A)$_{3,4}$) (I(A)A(I(A))$_{4,1}$)

(I(A(I(A)))I(A)$_{3,4}$) (I(A)I(A)$_{4,3,1}$)
(A(I(A))I(A)$_{1,4}$) ≫ ⋎ ≻ (A*I(A)$_{1,3}$) × (I(A)*A$_{3,1}$) ≫ ⋎ ≻ (I(A)A(I(A))$_{4,1}$)
(I(A)I(A)$_{1,3,4}$) (I(A)I(A(I(A)))$_{4,3}$)

(I(A)I(A)$_{1,3,4}$) (I(A)I(A(I(A)))$_{4,3}$)
(A(I(A))I(A)$_{1,4}$) ≫ ⋎ ≻ (A*I(A)$_{1,3}$) × (I(A)*A$_{3,1}$) ≫ ⋎ ≻ (I(A)A(I(A))$_{4,1}$)
(I(A(I(A)))I(A)$_{3,4}$) (I(A)I(A)$_{4,3,1}$)

(I(A)I(A)$_{1,3,4}$) (I(A)A(I(A))$_{4,1}$)
(I(A(I(A)))I(A)$_{3,4}$) ≫ ⋎ ≻ (A*I(A)$_{1,3}$) × (I(A)*A$_{3,1}$) ≫ ⋎ ≻ (I(A)I(A(I(A)))$_{4,3}$)
(A(I(A))I(A)$_{1,4}$) (I(A)I(A)$_{4,3,1}$)

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A{*}I(A)_{1,3})\\(I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A){*}A_{3,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A{*}I(A)_{1,3}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A){*}A_{3,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(A{*}I(A)_{1,3}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A){*}A_{3,1})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

$$\begin{matrix}(A{*}I(A)_{1,3})\\(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})\\(I(A){*}A_{3,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(A{*}I(A)_{1,3})\end{matrix} \times \begin{matrix}(I(A){*}A_{3,1})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A{*}I(A)_{1,3})\\(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})\\(I(A){*}A_{3,1})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4})\\(A{*}I(A)_{1,3})\end{matrix} \times \begin{matrix}(I(A){*}A_{3,1})\\(I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A{*}I(A)_{1,3}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4})\\(I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A){*}A_{3,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A)_{1,3,4})\\(A{*}I(A)_{1,3}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A){*}A_{3,1})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

$$\begin{matrix}(A{*}I(A)_{1,3})\\(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1})\\(I(A){*}A_{3,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4})\\(A{*}I(A)_{1,3})\end{matrix} \times \begin{matrix}(I(A){*}A_{3,1})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$(\mathrm{I(A(I(A)))I(A)_{3,4}} \gg \curlyvee \succ \mathrm{(A(I(A))I(A)_{1,4}}) \times \begin{matrix}(\mathrm{A^{*}I(A)_{1,3}})\\(\mathrm{I(A)I(A)_{1,3,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)A(I(A))_{4,1}}) \gg \curlyvee \succ \mathrm{(I(A)I(A(I(A)))_{4,3}})\\(\mathrm{I(A)^{*}A_{3,1}})\end{matrix}$$

$$(\mathrm{I(A(I(A)))I(A)_{3,4}} \gg \curlyvee \succ \mathrm{(A(I(A))I(A)_{1,4}}) \times \begin{matrix}(\mathrm{I(A)I(A)_{1,3,4}})\\(\mathrm{A^{*}I(A)_{1,3}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)^{*}A_{3,1}})\\(\mathrm{I(A)A(I(A))_{4,1}}) \gg \curlyvee \succ \mathrm{(I(A)I(A(I(A)))_{4,3}})\\(\mathrm{I(A)I(A)_{4,3,1}})\end{matrix}$$

Interpretative action

$$(\mathrm{A^{*}I(A)_{1,3}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{A(I(A))I(A)_{1,4}})\\(\mathrm{I(A)I(A)_{1,3,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \gg \curlyvee \succ \mathrm{(I(A)^{*}A_{3,1}})\\(\mathrm{I(A)A(I(A))_{4,1}})\end{matrix}$$

$$(\mathrm{A^{*}I(A)_{1,3}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{I(A)I(A)_{1,3,4}})\\(\mathrm{A(I(A))I(A)_{1,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)A(I(A))_{4,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \gg \curlyvee \succ \mathrm{(I(A)^{*}A_{3,1}})\\(\mathrm{I(A)I(A)_{4,3,1}})\end{matrix}$$

$$(\mathrm{I(A)I(A)_{1,3,4}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{A^{*}I(A)_{1,3}})\\(\mathrm{A(I(A))I(A)_{1,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)A(I(A))_{4,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \gg \curlyvee \succ \mathrm{(I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)^{*}A_{3,1}})\end{matrix}$$

$$(\mathrm{I(A)I(A)_{1,3,4}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{A(I(A))I(A)_{1,4}})\\(\mathrm{A^{*}I(A)_{1,3}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)^{*}A_{3,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \gg \curlyvee \succ \mathrm{(I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)A(I(A))_{4,1}})\end{matrix}$$

$$(\mathrm{A(I(A))I(A)_{1,4}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{A^{*}I(A)_{1,3}})\\(\mathrm{I(A)I(A)_{1,3,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \curlyvee \succ \mathrm{(I(A)A(I(A))_{4,1}})\\(\mathrm{I(A)^{*}A_{3,1}})\end{matrix}$$

$$(\mathrm{A(I(A))I(A)_{1,4}} \gg \curlyvee \succ \mathrm{(I(A(I(A)))I(A)_{3,4}}) \times \begin{matrix}(\mathrm{I(A)I(A)_{1,3,4}})\\(\mathrm{A^{*}I(A)_{1,3}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)^{*}A_{3,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}}) \gg \curlyvee \succ \mathrm{(I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)I(A)_{4,3,1}})\end{matrix}$$

2. Pre-semiotic dual system

$$\mathrm{(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A)_{1,3,4}\ A^{*}A(I(A))_{1,2}) \times}$$
$$\mathrm{(A(I(A))^{*}A_{2,1}\ I(A)I(A)_{4,3,1}\ I(A)A(I(A))_{1,4}\ I(A)I(A(I(A)))_{4,3})}$$

Qualitative action

$$(\mathrm{I(A)I(A)_{1,3,4}} \gg \curlyvee \succ \mathrm{(A^{*}A(I(A))_{1,2}}) \times \begin{matrix}(\mathrm{I(A(I(A)))I(A)_{3,4}})\\(\mathrm{A(I(A))I(A)_{1,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)A(I(A))_{4,1}})\\(\mathrm{A(I(A))^{*}A_{2,1}}) \gg \curlyvee \succ \mathrm{(I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)I(A(I(A)))_{4,3}})\end{matrix}$$

$$(\mathrm{I(A)I(A)_{1,3,4}} \gg \curlyvee \succ \mathrm{(A^{*}A(I(A))_{1,2}}) \times \begin{matrix}(\mathrm{A(I(A))I(A)_{1,4}})\\(\mathrm{I(A(I(A)))I(A)_{3,4}})\end{matrix} \quad \begin{matrix}(\mathrm{I(A)I(A(I(A)))_{4,3}})\\(\mathrm{A(I(A))^{*}A_{2,1}}) \gg \curlyvee \succ \mathrm{(I(A)I(A)_{4,3,1}})\\(\mathrm{I(A)A(I(A))_{4,1}})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \\ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\end{matrix} \times \begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4}) \\ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\end{matrix} \times \begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{1,3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A})_{4,3,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

$$(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\\(I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

Interpretative action

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

$$(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A)I(A)_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1})\end{matrix}$$

3. Pre-semiotic dual system
$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A)_{1,3,4}\ A^{*}I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^{*}A_{3,2}\ I(A)I(A)_{4,3,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A)_{1,3,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (I(A)I(A)_{4,3,1}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A)_{1,4}) \\ (I(A)I(A)_{1,3,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \curlyvee \succ (I(A)I(A)_{4,3,1}) \\ (I(A)A(I(A))_{4,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A)_{1,3,4}) \\ (A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1}) \\ (I(A)I(A)_{4,3,1})\end{matrix}$$

$$\begin{matrix}(I(A)I(A)_{1,3,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A)I(A)_{4,3,1})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A)_{1,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \\ (A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1}) \\ (I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A)_{1,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)A(I(A))_{4,1})\end{matrix}$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))^{*}A_{3,2})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2}) \\ (I(A)I(A)_{4,3,1}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A)_{4,3,1})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$

Objectal action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)I(A)_{1,3,4})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(I(A)I(A)_{1,3,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1})\end{matrix} \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{4,3,1})$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A)_{1,3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{4,3,1})$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A)_{1,3,4})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)A(I(A))_{4,1})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$

$$\begin{matrix}(I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A)_{4,3,1})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{4,3,1})$$

Interpretative action

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)I(A)_{1,3,4})\end{matrix} \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(I(A)I(A)_{1,3,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\\(I(A)I(A)_{4,3,1})\end{matrix} \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A)I(A)_{1,3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{1,3,4}) \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (I(A)I(A)_{4,3,1})$$

$$(I(A)I(A)_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (I(A)I(A)_{4,3,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A)_{1,3,4})\end{matrix} \times \begin{matrix}(I(A)I(A)_{4,3,1})\\(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \Upsilon \succ \begin{matrix}(I(A)I(A)_{1,3,4})\\(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A(I(A)))_{4,3})\\(I(A)I(A)_{4,3,1})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

4. Pre-semiotic system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)A(I(A))_{1,4}\ A^{*}A(I(A))_{1,2}) \times$
$(A(I(A))^{*}A_{2,1}\ A(I(A))I(A)_{4,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A)_{4,1})$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A)_{4,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3})$$

Medial action

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix} \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix} \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$

Objectal action

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\\(A(I(A))I(A)_{4,1})\end{matrix} \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$

$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\end{matrix} \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$

$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)A(I(A))_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix} \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$

$$(I(A)A(I(A))_{1,4}) \quad\quad (A(I(A))^{*}A_{2,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \times (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3})$$
$$(A^{*}A(I(A))_{1,2}) \quad\quad (A(I(A))I(A)_{4,1})$$

Interpretative action

$$(A(I(A))I(A)_{1,4}) \quad\quad (A(I(A))I(A)_{4,1})$$
$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$
$$(I(A)A(I(A))_{1,4}) \quad\quad (I(A)A(I(A))_{4,1})$$

$$(I(A)A(I(A))_{1,4}) \quad\quad (I(A)A(I(A))_{4,1})$$
$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (A(I(A))^{*}A_{2,1})$$
$$(A(I(A))I(A)_{1,4}) \quad\quad (A(I(A))I(A)_{4,1})$$

$$(A^{*}A(I(A))_{1,2}) \quad\quad (I(A)A(I(A))_{4,1})$$
$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$
$$(A(I(A))I(A)_{1,4}) \quad\quad (A(I(A))^{*}A_{2,1})$$

$$(A(I(A))I(A)_{1,4}) \quad\quad (A(I(A))^{*}A_{2,1})$$
$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$
$$(A^{*}A(I(A))_{1,2}) \quad\quad (I(A)A(I(A))_{4,1})$$

$$(A^{*}A(I(A))_{1,2}) \quad\quad (A(I(A))I(A)_{4,1})$$
$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$
$$(I(A)A(I(A))_{1,4}) \quad\quad (A(I(A))^{*}A_{2,1})$$

$$(I(A)A(I(A))_{1,4}) \quad\quad (A(I(A))^{*}A_{2,1})$$
$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \times (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ (I(A)A(I(A))_{4,1})$$
$$(A^{*}A(I(A))_{1,2}) \quad\quad (A(I(A))I(A)_{4,1})$$

5. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)A(I(A))_{1,4}\ A^{*}I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^{*}A_{3,2}\ A(I(A))I(A)_{4,1}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{3,4})$

Qualitative action

$$(I(A(I(A)))I(A)_{3,4}) \quad\quad (I(A)A(I(A))_{4,1})$$
$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$
$$(A(I(A))I(A)_{1,4}) \quad\quad (I(A)I(A(I(A)))_{4,3})$$

$$(A(I(A))I(A)_{1,4}) \quad\quad (I(A)I(A(I(A)))_{4,3})$$
$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A)_{4,1})$$
$$(I(A(I(A)))I(A)_{3,4}) \quad\quad (I(A)A(I(A))_{4,1})$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{3,4})\end{matrix}$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(A(I(A))I(A)_{1,4})\end{matrix} \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{4,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

Medial action

$$(A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$(A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A(I(A)))_{4})\end{matrix}$$

$$(A(I(A))I(A)_{1,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\end{matrix}$$

Objectal action

$$(A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \times (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{I(A(I(A)))I(A)}_{3,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\\times\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A)I(A(I(A)))}_{4,3})\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{I(A(I(A)))I(A)}_{3,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\\times\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A)I(A(I(A)))}_{4,3})\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\\times\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))^{*}A}_{3,2})\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{I(A(I(A)))I(A)}_{3,4})\\(\mathrm{I(A)A(I(A))}_{1,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\\times\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{4,1})\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{I(A(I(A)))I(A)}_{3,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\\times\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))^{*}A}_{3,2})\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{I(A)A(I(A))}_{1,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{4,1})\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{A(I(A))I(A)}_{1,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A)A(I(A))}_{4,1})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A(I(A))I(A)}_{1,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A)A(I(A))}_{4,1})\\(\mathrm{A(I(A))I(A)}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A(I(A))I(A)}_{1,4})\\(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{4,1})\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3})\\(\mathrm{A(I(A))I(A)}_{1,4})\\(\mathrm{I(A)A(I(A))}_{1,4})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{4,1})\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)A(I(A))}_{1,4})\\(\mathrm{A(I(A))I(A)}_{1,4})\\(\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{3,4})\\\times\\(\mathrm{I(A)I(A(I(A)))}_{4,3})\end{matrix}\gg\curlyvee\succ\begin{matrix}(\mathrm{A(I(A))I(A)}_{4,1})\\(\mathrm{I(A)A(I(A))}_{4,1})\end{matrix}\begin{matrix}\\(\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

6. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A)_{1,4}\ I(A)I(A(I(A)))_{3,4}\ A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A)A(I(A))_{4,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A(I(A)))_{3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A)I(A(I(A)))_{3,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\\(I(A)I(A(I(A)))_{3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4})\\(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3})$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)I(A(I(A)))_{3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\(I(A(I(A)))^{*}A_{3,2})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3})$$

Medial action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\\(A(I(A))I(A)_{1,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(I(A)A(I(A))_{4,1})\\(I(A(I(A)))I(A)_{4,3})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))I(A)_{4,3})\\(I(A)A(I(A))_{4,1})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(A(I(A))I(A)_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(I(A(I(A)))I(A)_{3,4})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))I(A)_{1,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(I(A(I(A)))I(A)_{4,3})\\(I(A)I(A(I(A)))_{4,3})\end{matrix} \gg \Upsilon \succ (I(A)A(I(A))_{4,1})$$

$$\begin{array}{c} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A)_{1,4}) \end{array} \times \begin{array}{c} (I(A)A(I(A))_{4,1}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{c} (A(I(A))I(A)_{1,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{c} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{4,1}) \end{array}$$

Objectal action

$$\begin{array}{c} (I(A(I(A)))I(A)_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{c} (I(A(I(A)))I(A)_{4,3}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{c} (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (I(A(I(A)))I(A)_{3,4}) \end{array} \times \begin{array}{c} (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3}) \end{array}$$

$$\begin{array}{c} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (I(A(I(A)))I(A)_{3,4}) \end{array} \times \begin{array}{c} (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{c} (I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{c} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{c} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{c} (I(A(I(A)))I(A)_{4,3}) \\ (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{c} (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A(I(A))I(A)_{1,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{c} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)A(I(A))_{4,1}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4}) \end{array}$$

Interpretative action

$$\begin{array}{c} (A(I(A))I(A)_{1,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{c} (I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)A(I(A))_{4,1}) \end{array}$$

$$\begin{array}{c} (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A)_{1,4}) \end{array} \times \begin{array}{c} (I(A)A(I(A))_{4,1}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{3,4}) \end{array}$$

$$\begin{array}{c} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A)_{1,4}) \end{array} \times \begin{array}{c} (I(A)A(I(A))_{4,1}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \times (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{1,4}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,1})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})$$

7. Pre-semiotic dual system

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}\ \mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}\ \mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}\ \mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}\ \mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}\ \mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}\ \mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})$$

Qualitative action

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \Upsilon \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \Upsilon \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})$$

$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \Upsilon \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \times (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \Upsilon \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})$$

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \Upsilon \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \Upsilon \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \Upsilon \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \times (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \Upsilon \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \Upsilon \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \Upsilon \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})$$

Medial action

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A)A(I(A))_{1,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

Objectal action

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(I(A(I(A)))I(A)_{3,4})\\(A(I(A))A(I(A))_{1,2,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \curlyvee \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ \begin{matrix}(A(I(A))^{*}A_{2,1})\\(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \curlyvee \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))I(A)_{3,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times (A(I(A))I(A)_{4,1})(A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(A(I(A))I(A)_{4,1})\\(I(A)I(A(I(A)))_{4,3})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(\mathrm{I(A)A(I(A))}_{1,4})\qquad\qquad(\mathrm{A(I(A))*A}_{2,1})$$
$$(\mathrm{I(A(I(A)))I(A)}_{3,4}) \gg \Upsilon \succ (\mathrm{A(I(A))A(I(A))}_{1,2,4}) \times (\mathrm{A(I(A))A(I(A))}_{4,2,1}) \gg \Upsilon \succ (\mathrm{I(A)I(A(I(A)))}_{4,3})$$
$$(\mathrm{A*A(I(A))}_{1,2})\qquad\qquad(\mathrm{A(I(A))I(A)}_{4,1})$$

Interpretative action

$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{A*A(I(A))}_{1,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))*A}_{2,1})$$
$$(\mathrm{I(A)A(I(A))}_{1,4})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$(\mathrm{I(A)A(I(A))}_{1,4})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{A*A(I(A))}_{1,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))*A}_{2,1})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{A(I(A))I(A)}_{4,1})$$

$$(\mathrm{A*A(I(A))}_{1,2})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{I(A)A(I(A))}_{1,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{A(I(A))*A}_{2,1})$$

$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{A(I(A))*A}_{2,1})$$
$$(\mathrm{I(A)A(I(A))}_{1,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{A*A(I(A))}_{1,2})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$(\mathrm{A*A(I(A))}_{1,2})\qquad\qquad(\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{I(A)A(I(A))}_{1,4})\qquad\qquad(\mathrm{A(I(A))*A}_{2,1})$$

$$(\mathrm{I(A)A(I(A))}_{1,4})\qquad\qquad(\mathrm{A(I(A))*A}_{2,1})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \times (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \Upsilon \succ (\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{A*A(I(A))}_{1,2})\qquad\qquad(\mathrm{A(I(A))I(A)}_{4,1})$$

8. Pre-semiotic dual system

$$(\mathrm{I(A(I(A)))I(A)}_{3,4}\ \mathrm{A(I(A))A(I(A))}_{1,2,4}\ \mathrm{I(A)A(I(A))}_{1,4}\ \mathrm{A*I(A(I(A)))}_{2,3}) \times$$
$$(\mathrm{I(A(I(A)))*A}_{3,2}\ \mathrm{A(I(A))I(A)}_{4,1}\ \mathrm{A(I(A))A(I(A))}_{4,2,1}\ \mathrm{I(A)I(A(I(A)))}_{4,3})$$

Qualitative action

$$(\mathrm{I(A(I(A)))I(A)}_{3,4})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{I(A)A(I(A))}_{1,4}) \gg \Upsilon \succ (\mathrm{A*I(A(I(A)))}_{2,3}) \times (\mathrm{I(A(I(A)))*A}_{3,2}) \gg \Upsilon \succ (\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{I(A)I(A(I(A)))}_{4,3})$$

$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})\qquad\qquad(\mathrm{I(A)I(A(I(A)))}_{4,3})$$
$$(\mathrm{I(A)A(I(A))}_{1,4}) \gg \Upsilon \succ (\mathrm{A*I(A(I(A)))}_{2,3}) \times (\mathrm{I(A(I(A)))*A}_{3,2}) \gg \Upsilon \succ (\mathrm{A(I(A))I(A)}_{4,1})$$
$$(\mathrm{I(A(I(A)))I(A)}_{3,4})\qquad\qquad(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{array} \begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \times\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

Medial action

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{array} \begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

$$\begin{array}{c}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{array} \begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{array} \begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{array}$$

$$\begin{array}{c}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{array} \begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

Objectal action

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{array}$$

$$\begin{array}{llll} & (I(A)A(I(A))_{1,4}) & & (I(A)I(A(I(A)))_{4,3}) \\ (A^*I(A(I(A)))_{2,3}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{1,2,4}) \times & (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ & (I(A(I(A)))^*A_{3,2}) \\ & (I(A(I(A)))I(A)_{3,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{llll} & (A^*I(A(I(A)))_{2,3}) & & (I(A)I(A(I(A)))_{4,3}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{1,2,4}) \times & (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ & (A(I(A))I(A)_{4,1}) \\ & (I(A(I(A)))I(A)_{3,4}) & & (I(A(I(A)))^*A_{3,2}) \end{array}$$

$$\begin{array}{llll} & (I(A(I(A)))I(A)_{3,4}) & & (I(A(I(A)))^*A_{3,2}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{1,2,4}) \times & (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ & (A(I(A))I(A)_{4,1}) \\ & (A^*I(A(I(A)))_{2,3}) & & (I(A)I(A(I(A)))_{4,3}) \end{array}$$

$$\begin{array}{llll} & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))I(A)_{4,1}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{1,2,4}) \times & (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ & (I(A)I(A(I(A)))_{4,3}) \\ & (I(A)A(I(A))_{1,4}) & & (I(A(I(A)))^*A_{3,2}) \end{array}$$

$$\begin{array}{llll} & (I(A)A(I(A))_{1,4}) & & (I(A(I(A)))^*A_{3,2}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{1,2,4}) \times & (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ & (I(A)I(A(I(A)))_{4,3}) \\ & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

Interpretative action

$$\begin{array}{llll} & (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \\ (A^*I(A(I(A)))_{2,3}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (I(A(I(A)))^*A_{3,2}) \\ & (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \end{array}$$

$$\begin{array}{llll} & (I(A)A(I(A))_{1,4}) & & (A(I(A))A(I(A))_{4,2,1}) \\ (A^*I(A(I(A)))_{2,3}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (I(A(I(A)))^*A_{3,2}) \\ & (A(I(A))A(I(A))_{1,2,4}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

$$\begin{array}{llll} & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))A(I(A))_{4,2,1}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (A(I(A))I(A)_{4,1}) \\ & (A(I(A))A(I(A))_{1,2,4}) & & (I(A(I(A)))^*A_{3,2}) \end{array}$$

$$\begin{array}{llll} & (A(I(A))A(I(A))_{1,2,4}) & & (I(A(I(A)))^*A_{3,2}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (A(I(A))I(A)_{4,1}) \\ & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))A(I(A))_{4,2,1}) \end{array}$$

$$\begin{array}{llll} & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))I(A)_{4,1}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{4,2,1}) \\ & (I(A)A(I(A))_{1,4}) & & (I(A(I(A)))^*A_{3,2}) \end{array}$$

$$\begin{array}{llll} & (I(A)A(I(A))_{1,4}) & & (I(A(I(A)))^*A_{3,2}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ & (I(A(I(A)))I(A)_{3,4}) \times & (I(A)I(A(I(A)))_{4,3}) \gg \curlyvee \succ & (A(I(A))A(I(A))_{4,2,1}) \\ & (A^*I(A(I(A)))_{2,3}) & & (A(I(A))I(A)_{4,1}) \end{array}$$

9. Pre-semiotic dual system

$(I(A(I(A)))I(A)_{3,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)I(A(I(A)))_{3,4}\ A^*I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^*A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ A(I(A))A(I(A))_{4,2,1}\ I(A)I(A(I(A)))_{4,3})$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \curlyvee \succ (A^*I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^*A_{3,2}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{4,3}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A^*I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))^*A_{3,2}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (A^*I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))^*A_{3,2}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(A^*I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^*A_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{matrix} \times \begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{matrix}$$

Objective action

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \\ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \\ (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \\ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{matrix} \times \begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \\ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\end{matrix}$$

$$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ I(A)I(A(I(A)))_{4,3})$$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

10. Pre-semiotic dual system

$$(I(A(I(A)))I(A)_{3,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ I(A)I(A(I(A)))_{4,3})$$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))I(A)_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A)I(A(I(A)))_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A)_{3,4})\end{matrix} \times \begin{matrix}(I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3}) \\ (I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A)))_{1,2,4}) \\ (I(A(I(A)))I(A)_{3,4}) \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A)I(A(I(A)))_{4,3}) \\ (A(I(A))A(I(A)))_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

:

$$\begin{matrix}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2})\end{matrix}$$

Objectal action

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\end{matrix}$$

$$\begin{matrix}(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{3,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,4})\\(\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{I}(\mathrm{A})_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,3})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)I(A(I(A)))}_{3,4}) \\ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \gg \curlyvee \succ (\mathrm{A(I(A))I(A(I(A)))}_{2,4}) \\ (\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))^{*}A}_{3,2}) \\ (\mathrm{I(A(I(A)))A(I(A))}_{4,2}) \gg \curlyvee \succ (\mathrm{I(A)I(A(I(A)))}_{3,4}) \\ (\mathrm{I(A(I(A)))I(A)}_{4,3})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\mathrm{A(I(A))I(A(I(A)))}_{2,4}) \\ (\mathrm{A^{*}I(A(I(A)))}_{2,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{I(A)I(A(I(A)))}_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{4,3}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))^{*}A}_{3,2}) \\ (\mathrm{I(A(I(A)))A(I(A))}_{4,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)I(A(I(A)))}_{3,4}) \\ (\mathrm{A^{*}I(A(I(A)))}_{2,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{A(I(A))I(A(I(A)))}_{2,4})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))A(I(A))}_{4,2}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{4,3}) \\ (\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3}) \\ (\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{A(I(A))I(A(I(A)))}_{2,4})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))A(I(A))}_{4,2}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{4,3}) \\ (\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A(I(A))I(A(I(A)))}_{2,4}) \\ (\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))^{*}A}_{3,2}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{4,3}) \\ (\mathrm{I(A(I(A)))A(I(A))}_{4,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A^{*}I(A(I(A)))}_{2,3}) \\ (\mathrm{A(I(A))I(A(I(A)))}_{2,4}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{I(A)I(A(I(A)))}_{3,4})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))I(A)}_{4,3}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))A(I(A))}_{4,2}) \\ (\mathrm{I(A(I(A)))^{*}A}_{3,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{I(A)I(A(I(A)))}_{3,4}) \\ (\mathrm{A(I(A))I(A(I(A)))}_{2,4}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))I(A)}_{3,4}) \\ (\mathrm{A^{*}I(A(I(A)))}_{2,3})\end{matrix} \times \begin{matrix}(\mathrm{I(A(I(A)))^{*}A}_{3,2}) \\ (\mathrm{I(A)I(A(I(A)))}_{4,3}) \gg \curlyvee \succ (\mathrm{I(A(I(A)))A(I(A))}_{4,2}) \\ (\mathrm{I(A(I(A)))I(A)}_{4,3})\end{matrix}$$

11. Pre-semiotic dual system

$$(\mathrm{I(A(I(A)))A(I(A))}_{2,4}\ \mathrm{A(I(A))A(I(A))}_{1,2,4}\ \mathrm{I(A)A(I(A))}_{1,4}\ \mathrm{A^{*}A(I(A))}_{1,2}) \times (\mathrm{A(I(A))^{*}A}_{2,1}\ \mathrm{A(I(A))I(A)}_{4,1}\ \mathrm{A(I(A))A(I(A))}_{4,2,1}\ \mathrm{A(I(A))I(A(I(A)))}_{4,2})$$

Qualitative action

$$\begin{matrix}(\mathrm{I(A(I(A)))A(I(A))}_{2,4}) \\ (\mathrm{I(A)A(I(A))}_{1,4}) \gg \curlyvee \succ (\mathrm{A^{*}A(I(A))}_{1,2}) \\ (\mathrm{A(I(A))A(I(A))}_{1,2,4})\end{matrix} \times \begin{matrix}(\mathrm{A(I(A))A(I(A))}_{4,2,1}) \\ (\mathrm{A(I(A))^{*}A}_{2,1}) \gg \curlyvee \succ (\mathrm{A(I(A))I(A)}_{4,1}) \\ (\mathrm{A(I(A))I(A(I(A)))}_{4,2})\end{matrix}$$

$$\begin{matrix}(\mathrm{A(I(A))A(I(A))}_{1,2,4}) \\ (\mathrm{I(A)A(I(A))}_{1,4}) \gg \curlyvee \succ (\mathrm{A^{*}A(I(A))}_{1,2}) \\ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})\end{matrix} \times \begin{matrix}(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \\ (\mathrm{A(I(A))^{*}A}_{2,1}) \gg \curlyvee \succ (\mathrm{A(I(A))I(A)}_{4,1}) \\ (\mathrm{A(I(A))A(I(A))}_{4,2,1})\end{matrix}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

Medial action

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\\(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

$$\begin{array}{c}(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\end{array}$$

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\end{array}$$

$$\begin{array}{c}(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\end{array}$$

$$\begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\\(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\\(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})\end{array}$$

Objectal action

$$\begin{array}{c}(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4})\\(\mathrm{A}^{*}\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4})\\(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4})\end{array} \times \begin{array}{c}(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))^{*}\mathrm{A}_{2,1})\\(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})\end{array}$$

$$(A^{*}A(I(A))_{1,2}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$(I(A(I(A)))A(I(A))_{2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(A(I(A))A(I(A))_{1,2,4})\\(I(A)A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A(I(A)))A(I(A))_{2,4}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

Interpretative action

$$(A^{*}A(I(A))_{1,2}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))^{*}A_{2,1})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$(A^{*}A(I(A))_{1,2}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))A(I(A))_{2,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))^{*}A_{2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))A(I(A))_{4,2,1}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}A(I(A))_{1,2})\\(I(A(I(A)))A(I(A))_{2,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(A(I(A))^{*}A_{2,1})\end{matrix}$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A^{*}A(I(A))_{1,2})\end{matrix} \times \begin{matrix}(A(I(A))^{*}A_{2,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

12. Pre-semiotic dual system

$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)A(I(A))_{1,4}\ A^{*}I(A(I(A)))_{2,3}) \times$
$(I(A(I(A)))^{*}A_{3,2}\ A(I(A))I(A)_{4,1}\ A(I(A))A(I(A))_{4,2,1}\ A(I(A))I(A(I(A)))_{4,2})$

Qualitative action

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A)_{4,1}) \\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (I(A)A(I(A))_{1,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A)_{4,1}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(I(A)A(I(A))_{1,4}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (A(I(A))I(A)_{4,1})\end{matrix}$$

$$\begin{matrix}(I(A)A(I(A))_{1,4}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (A(I(A))I(A)_{4,1})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1}) \\ (I(A(I(A)))^{*}A_{3,2}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)A(I(A))_{1,4}) \\ (A(I(A))A(I(A))_{1,2,4})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1}) \\ (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$\begin{matrix}(A(I(A))A(I(A))_{1,2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)A(I(A))_{1,4}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)A(I(A))_{1,4}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (I(A(I(A)))^{*}A_{3,2})\end{matrix}$$

$$\begin{matrix}(I(A(I(A)))A(I(A))_{2,4}) \\ (A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)A(I(A))_{1,4}) \\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))I(A)_{4,1}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1}) \\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})$$

$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \quad (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3})$$

Objectal action

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})$$

$$(\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \quad (\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

Interpretative action

$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$
$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$
$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})$$

$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})$$
$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$
$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$

$$(\mathrm{A}^{*}\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{2,3}) \quad (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{4,2,1})$$
$$(\mathrm{I}(\mathrm{A})\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,4}) \gg \curlyvee \succ (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{2,4}) \times (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))_{4,2}) \gg \curlyvee \succ (\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{I}(\mathrm{A})_{4,1})$$
$$(\mathrm{A}(\mathrm{I}(\mathrm{A}))\mathrm{A}(\mathrm{I}(\mathrm{A}))_{1,2,4}) \quad (\mathrm{I}(\mathrm{A}(\mathrm{I}(\mathrm{A})))^{*}\mathrm{A}_{3,2})$$

$$(I(A)A(I(A))_{1,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))I(A)_{4,1})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\(I(A(I(A)))A(I(A))_{2,4})\\(I(A)A(I(A))_{1,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A)_{4,1})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))^{*}A_{3,2})\end{matrix}$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A)A(I(A))_{1,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\(A(I(A))I(A(I(A)))_{4,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(A(I(A))I(A)_{4,1})\end{matrix}$$

13. Pre-semiotic system

$$(I(A(I(A)))A(I(A))_{2,4}\ A(I(A))A(I(A))_{1,2,4}\ I(A)I(A(I(A)))_{3,4}\ A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ A(I(A))A(I(A))_{4,2,1}\ A(I(A))I(A(I(A)))_{4,2})$$

Qualitative action

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})\\(A(I(A))I(A(I(A)))_{4,2})\end{matrix}$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))A(I(A))_{4,2})\end{matrix}$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A(I(A)))A(I(A))_{2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\(A(I(A))A(I(A))_{1,2,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})\\(I(A(I(A)))I(A)_{4,3})\end{matrix}$$

$$(I(A(I(A)))A(I(A))_{2,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))A(I(A))_{1,2,4})\\(I(A)I(A(I(A)))_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (A(I(A))A(I(A))_{4,2,1})\\(I(A(I(A)))A(I(A))_{4,2})\end{matrix}$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\(I(A)I(A(I(A)))_{3,4})\\(A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\(I(A(I(A)))^{*}A_{3,2}) \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})\\(A(I(A))A(I(A))_{4,2,1})\end{matrix}$$

Medial action

$$(A^{*}I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(A(I(A))A(I(A))_{1,2,4}) \qquad\qquad (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (A(I(A))A(I(A))_{4,2,1})$$

$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$
$$(A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$
$$(A(I(A))A(I(A))_{1,2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (A(I(A))A(I(A))_{4,2,1})$$
$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))A(I(A))_{4,2,1})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2})$$
$$(A(I(A))A(I(A))_{1,2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$

$$(A(I(A))A(I(A))_{1,2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2})$$
$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))A(I(A))_{4,2,1})$$

Objectal action

$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))I(A)_{4,3})$$
$$(A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))A(I(A))_{1,2,4}) \times (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$
$$(A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))A(I(A))_{1,2,4}) \times (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))I(A)_{4,3})$$

$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))A(I(A))_{1,2,4}) \times (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))A(I(A))_{1,2,4}) \times (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3})$$
$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (A(I(A))I(A(I(A)))_{4,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \qquad\qquad (I(A(I(A)))I(A)_{4,3})$$
$$(I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (A(I(A))A(I(A))_{1,2,4}) \times (A(I(A))A(I(A))_{4,2,1}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2})$$
$$(I(A)I(A(I(A)))_{3,4}) \qquad\qquad (I(A(I(A)))^{*}A_{3,2})$$

$$(\mathrm{I(A)I(A(I(A)))}_{3,4})$$
$$(\mathrm{I(A(I(A)))A(I(A))}_{2,4}) \gg \Upsilon \succ (\mathrm{A(I(A))A(I(A))}_{1,2,4})$$
$$(\mathrm{A^{*}I(A(I(A)))}_{2,3})$$

$$(\mathrm{I(A(I(A)))^{*}A}_{3,2})$$
$$\times(\mathrm{A(I(A))A(I(A))}_{4,2,1}) \gg \Upsilon \succ (\mathrm{A(I(A))I(A(I(A)))}_{4,2})$$
$$(\mathrm{I(A(I(A)))I(A)}_{4,3})$$

Interpretative action

$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})$$
$$(\mathrm{A^{*}I(A(I(A)))}_{2,3}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))^{*}A}_{3,2})$$
$$(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$(\mathrm{I(A)I(A(I(A)))}_{3,4})$$
$$(\mathrm{A^{*}I(A(I(A)))}_{2,3}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{4,3})$$
$$(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$(\mathrm{A^{*}I(A(I(A)))}_{2,3})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{4,3})$$
$$(\mathrm{I(A(I(A)))^{*}A}_{3,2})$$

$$(\mathrm{A(I(A))A(I(A))}_{1,2,4})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{A^{*}I(A(I(A)))}_{2,3})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))^{*}A}_{3,2})$$
$$(\mathrm{A(I(A))A(I(A))}_{4,2,1})$$

$$(\mathrm{A^{*}I(A(I(A)))}_{2,3})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{4,3})$$
$$(\mathrm{I(A(I(A)))^{*}A}_{3,2})$$

$$(\mathrm{I(A)I(A(I(A)))}_{3,4})$$
$$(\mathrm{A(I(A))A(I(A))}_{1,2,4}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{A^{*}I(A(I(A)))}_{2,3})$$

$$\times(\mathrm{A(I(A))I(A(I(A)))}_{4,2}) \gg \Upsilon \succ (\mathrm{A(I(A))A(I(A))}_{4,2,1})$$
$$(\mathrm{I(A(I(A)))I(A)}_{4,3})$$

14. Pre-semiotic dual system

$$(\mathrm{I(A(I(A)))A(I(A))}_{2,4}\ \mathrm{A(I(A))I(A(I(A)))}_{2,4}\ \mathrm{I(A)I(A(I(A)))}_{3,4}\ \mathrm{A^{*}I(A(I(A)))}_{2,3}) \times$$
$$(\mathrm{I(A(I(A)))^{*}A}_{3,2}\ \mathrm{I(A(I(A)))I(A)}_{4,3}\ \mathrm{I(A(I(A)))A(I(A))}_{4,2}\ \mathrm{A(I(A))I(A(I(A)))}_{4,2})$$

Qualitative action

$$(\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \Upsilon \succ (\mathrm{A^{*}I(A(I(A)))}_{2,3})$$
$$(\mathrm{A(I(A))I(A(I(A)))}_{2,4})$$

$$\times\ (\mathrm{I(A(I(A)))^{*}A}_{3,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{4,3})$$
$$(\mathrm{A(I(A))I(A(I(A)))}_{4,2})$$

$$(\mathrm{A(I(A))I(A(I(A)))}_{2,4})$$
$$(\mathrm{I(A)I(A(I(A)))}_{3,4}) \gg \Upsilon \succ (\mathrm{A^{*}I(A(I(A)))}_{2,3})$$
$$(\mathrm{I(A(I(A)))A(I(A))}_{2,4})$$

$$\times\ (\mathrm{I(A(I(A)))^{*}A}_{3,2}) \gg \Upsilon \succ (\mathrm{I(A(I(A)))I(A)}_{4,3})$$
$$(\mathrm{I(A(I(A)))A(I(A))}_{4,2})$$

$$\begin{array}{l} (I(A(I(A)))A(I(A))_{2,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ \gg \curlyvee \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (A(I(A))I(A(I(A)))_{4,2}) \end{array}$$

$$\begin{array}{l} (I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{2,4}) \end{array} \quad \begin{array}{l} (A(I(A))I(A(I(A)))_{4,2}) \\ \gg \curlyvee \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \end{array}$$

$$\begin{array}{l} (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))I(A(I(A)))_{2,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))A(I(A))_{4,2}) \\ \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \end{array}$$

$$\begin{array}{l} (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \end{array}$$

Medial action

$$\begin{array}{l} (I(A(I(A)))A(I(A))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (A(I(A))I(A(I(A)))_{2,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))A(I(A))_{4,2}) \\ \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))I(A(I(A)))_{4,2}) \end{array}$$

$$\begin{array}{l} (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{2,4}) \end{array} \quad \begin{array}{l} (A(I(A))I(A(I(A)))_{4,2}) \\ \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \end{array}$$

$$\begin{array}{l} (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \curlyvee \succ I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{2,4}) \end{array} \quad \begin{array}{l} (A(I(A))I(A(I(A)))_{4,2}) \\ \gg \curlyvee \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{l} (I(A(I(A)))A(I(A))_{2,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \quad \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ \gg \curlyvee \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (A(I(A))I(A(I(A)))_{4,2}) \end{array}$$

$$\begin{array}{l} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (A(I(A))I(A(I(A)))_{2,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))A(I(A))_{4,2}) \\ \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{l} (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))A(I(A))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \times (I(A(I(A)))I(A)_{4,3}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \quad \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \end{array}$$

Objectal action

$$\begin{array}{l} (I(A(I(A)))A(I(A))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \times (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \quad \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (A(I(A))I(A(I(A)))_{4,2}) \end{array}$$

$$(A^{*}I(A(I(A)))_{2,3}) \gg \Upsilon \succ \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\ (I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A(I(A)))A(I(A))_{2,4}) \gg \Upsilon \succ \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

Interpretative action

$$(A^{*}I(A(I(A)))_{2,3}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\ (A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \gg \Upsilon \succ \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\ (I(A(I(A)))A(I(A))_{2,4})\\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\ (I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(I(A(I(A)))A(I(A))_{2,4})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (A(I(A))I(A(I(A)))_{4,2})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

$$(A^{*}I(A(I(A)))_{2,3}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\ (A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A^{*}I(A(I(A)))_{2,3})\\ (A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$(A(I(A))I(A(I(A)))_{2,4}) \gg \Upsilon \succ \begin{matrix}(I(A)I(A(I(A)))_{3,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))I(A)_{4,3})\\ (I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

$$(I(A)I(A(I(A)))_{3,4}) \gg \Upsilon \succ \begin{matrix}(A(I(A))I(A(I(A)))_{2,4})\\ (I(A(I(A)))A(I(A))_{2,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{matrix} \times \begin{matrix}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (A(I(A))I(A(I(A)))_{4,2})$$

15. Pre-semiotic dual system

$(I(A(I(A)))I(A(I(A)))_{2,3,4}\ A(I(A))I(A(I(A)))_{2,4}\ I(A)I(A(I(A)))_{3,4}\ A^{*}I(A(I(A)))_{2,3}) \times (I(A(I(A)))^{*}A_{3,2}\ I(A(I(A)))I(A)_{4,3}\ I(A(I(A)))A(I(A))_{4,2}\ I(A(I(A)))I(A(I(A)))_{4,3,2})$

Qualitative action

$$\begin{matrix}(I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A(I(A)))_{4,3,2})$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))A(I(A))_{4,2})$$

$$\begin{matrix}(I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A)_{4,3})$$

$$\begin{matrix}(A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4})\end{matrix} \gg \Upsilon \succ (A^{*}I(A(I(A)))_{2,3}) \times \begin{matrix}(I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))I(A(I(A)))_{4,3,2})$$

Medial action

$$\begin{matrix}(I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{4,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))^{*}A_{3,2})$$

$$\begin{matrix}(A^{*}I(A(I(A)))_{2,3}) \\ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))A(I(A))_{2,4})\end{matrix} \gg \Upsilon \succ (I(A)I(A(I(A)))_{3,4}) \times \begin{matrix}(A(I(A))I(A(I(A)))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2})\end{matrix} \gg \Upsilon \succ (I(A(I(A)))A(I(A))_{4,2})$$

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

$$\begin{array}{l} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A(I(A))I(A(I(A)))_{2,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))A(I(A))_{4,2}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{l} (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \gg \curlyvee \succ (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3}) \gg \curlyvee \succ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \end{array}$$

Objectal action

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

$$\begin{array}{l} (I(A)I(A(I(A)))_{3,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))I(A)_{4,3}) \end{array}$$

$$\begin{array}{l} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

$$\begin{array}{l} (A^{*}I(A(I(A)))_{2,3}) \\ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \\ (I(A(I(A)))^{*}A_{3,2}) \end{array}$$

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

$$\begin{array}{l} (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \gg \curlyvee \succ (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \end{array} \times \begin{array}{l} (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \gg \curlyvee \succ (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \end{array}$$

Interpretative action

$$\begin{array}{l} (A(I(A))I(A(I(A)))_{2,4}) \\ (A^{*}I(A(I(A)))_{2,3}) \gg \curlyvee \succ (I(A(I(A)))I(A(I(A)))_{2,3,4}) \\ (I(A)I(A(I(A)))_{3,4}) \end{array} \times \begin{array}{l} (I(A(I(A)))I(A)_{4,3}) \\ (I(A(I(A)))I(A(I(A)))_{4,3,2}) \gg \curlyvee \succ (I(A(I(A)))^{*}A_{3,2}) \\ (I(A(I(A)))A(I(A))_{4,2}) \end{array}$$

$$\begin{array}{l}(I(A)I(A(I(A)))_{3,4})\\ (A^{*}I(A(I(A)))_{2,3})\gg\curlyvee\succ(I(A(I(A)))I(A(I(A)))_{2,3,4})\\ (A(I(A))I(A(I(A)))_{2,4})\end{array}\times\begin{array}{l}(I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{array}\gg\curlyvee\succ(I(A(I(A)))^{*}A_{3,2})$$

$$\begin{array}{l}(A^{*}I(A(I(A)))_{2,3})\\ (I(A)I(A(I(A)))_{3,4})\gg\curlyvee\succ(I(A(I(A)))I(A(I(A)))_{2,3,4})\\ (A(I(A))I(A(I(A)))_{2,4})\end{array}\times\begin{array}{l}(I(A(I(A)))A(I(A))_{4,2})\\ (I(A(I(A)))I(A)_{4,3})\end{array}\gg\curlyvee\succ(I(A(I(A)))^{*}A_{3,2})$$

$$\begin{array}{l}(A(I(A))I(A(I(A)))_{2,4})\\ (I(A)I(A(I(A)))_{3,4})\gg\curlyvee\succ(I(A(I(A)))I(A(I(A)))_{2,3,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{array}\times\begin{array}{l}(I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))A(I(A))_{4,2})\end{array}\gg\curlyvee\succ(I(A(I(A)))I(A)_{4,3})$$

$$\begin{array}{l}(A^{*}I(A(I(A)))_{2,3})\\ (A(I(A))I(A(I(A)))_{2,4})\gg\curlyvee\succ(I(A(I(A)))I(A(I(A)))_{2,3,4})\\ (I(A)I(A(I(A)))_{3,4})\end{array}\times\begin{array}{l}(I(A(I(A)))I(A(I(A)))_{4,3,2})\\ (I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))I(A)_{4,3})\end{array}\gg\curlyvee\succ(I(A(I(A)))A(I(A))_{4,2})$$

$$\begin{array}{l}(I(A)I(A(I(A)))_{3,4})\\ (A(I(A))I(A(I(A)))_{2,4})\gg\curlyvee\succ(I(A(I(A)))I(A(I(A)))_{2,3,4})\\ (A^{*}I(A(I(A)))_{2,3})\end{array}\times\begin{array}{l}(I(A(I(A)))I(A(I(A)))_{4,3,2})\\ (I(A(I(A)))^{*}A_{3,2})\\ (I(A(I(A)))I(A)_{4,3})\end{array}\gg\curlyvee\succ(I(A(I(A)))A(I(A))_{4,2})$$

Chapter Six: The Regional Night

Preliminary remarks. While a logical theory of the Will rises from negativity of meontics (cf. Günther 1980), s semiotic theory of the Will rises from a regional semiotics (cf. Toth 2011), which is capable of representing the positions of objects in the 3-dimensional space in a non-trivial way. The present chapter, based on the concept of a complex semiotics (cf. Toth 2007), requires the linearized order of spheric semiotic sub-relations

(-a.-b) < (-a.b) < (a.-b) < (a.b),

which tries to display the structural possibilities of a "meontological semiotics" on the basis of the following combinations of sub-relations in a framework of minimal contexturation

$(a.b)_{1.2.3}$, $(a.b)_{1.3.2}$, $(a.b)_{2.1.3}$, $(a.b)_{2.3.1}$, $(a.b)_{3.1.2}$, $(a.b)_{3.2.1}$

$(b.a)_{1.2.3}$, $(b.a)_{1.3.2}$, $(b.a)_{2.1.3}$, $(b.a)_{2.3.1}$, $(b.a)_{3.1.2}$, $(b.a)_{3.2.1}$

$(-a.b)_{1.2.3}$, $(-a.b)_{1.3.2}$, $(-a.b)_{2.1.3}$, $(-a.b)_{2.3.1}$, $(-a.b)_{3.1.2}$, $(-a.b)_{3.2.1}$

$(b.-a)_{1.2.3}$, $(b.-a)_{1.3.2}$, $(b.-a)_{2.1.3}$, $(b.-a)_{2.3.1}$, $(b.-a)_{3.1.2}$, $(b.-a)_{3.2.1}$

$(a.-b)_{1.2.3}$, $(a.-b)_{1.3.2}$, $(a.-b)_{2.1.3}$, $(a.-b)_{2.3.1}$, $(a.-b)_{3.1.2}$, $(a.-b)_{3.2.1}$

$(-b.a)_{1.2.3}$, $(-b.a)_{1.3.2}$, $(-b.a)_{2.1.3}$, $(-b.a)_{2.3.1}$, $(-b.a)_{3.1.2}$, $(-b.a)_{3.2.1}$

$(-a.-b)_{1.2.3}$, $(-a.-b)_{1.3.2}$, $(-a.-b)_{2.1.3}$, $(-a.-b)_{2.3.1}$, $(-a.-b)_{3.1.2}$, $(-a.-b)_{3.2.1}$

$(-b.-a)_{1.2.3}$, $(-b.-a)_{1.3.2}$, $(-b.-a)_{2.1.3}$, $(-b.-a)_{2.3.1}$, $(-b.-a)_{3.1.2}$, $(-b.-a)_{3.2.1}$

on the background of the following triadic-tetratomic model of cyclic semiotic sub-relations

-3.-3 < -3.-2 < -3.-1 < -3.1 < -3.2 < -3.3 <

-2.-3 < -2.-2 < -2.-1 < -2.1 < -2.2 < -2.3 <

-1.-3 < -1.-2 < -1.-1 < -1.1 < -1.2 < -1.3 <

-0.-3 < -0.-2 < -0.-1 < -0.1 < -0.2 < -0.3 <

0.-3 < 0.-2 < 0.-1 < ■ < 0.1 < 0.2 < 0.3 <

1.-3 < 1.-2 < 1.-1 < 1.1 < 1.2 < 1.3 <

2.-3 < 2.-2 < 2.-1 < 2.1 < 2.2 < 2.3 <

3.-3 < 3.-2 < 3.-1 < 3.1 < 3.2 < 3.3 <

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
(-1.-3 $_{3,4}$ -1.-2 $_{1,4}$ -1.-1 $_{1,3,4}$ -0.-1 $_{1,3}$) × (-0.-1 $_{3,1}$ -1.-1 $_{4,3,1}$ -1.-2 $_{4,1}$ -1.-3 $_{4,3}$)

Qualitative action

(-1.-2 $_{1,4}$) (-1.-1 $_{4,3,1}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(-1.-1 $_{1,3,4}$) (-1.-2 $_{4,1}$)

(-1.-3 $_{3,4}$) (-1.-1 $_{4,3,1}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(-1.-1 $_{1,3,4}$) (-1.-3 $_{4,3}$)

(-1.-1 $_{1,3,4}$) (-1.-2 $_{4,1}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(-1.-2 $_{1,4}$) (-1.-1 $_{4,3,1}$)

(-1.-3 $_{3,4}$) (-1.-2 $_{4,1}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(1.-2 $_{1,4}$) (-1.-3 $_{4,3}$)

(-1.-1 $_{1,3,4}$) (-1.-3 $_{4,3}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(-1.-3 $_{3,4}$) (-1.-1 $_{4,3,1}$)

(-1.-2 $_{1,4}$) (-1.-3 $_{4,3}$)
↿ ≫ (-0.-1 $_{1,3}$) × ↿ ≫ (-0.-1 $_{3,1}$)
(-1.-3 $_{3,4}$) (-1.-2 $_{4,1}$)

Medial action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}1_{\,1,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}1_{\,3,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}1_{\,1,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}1_{\,3,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}1_{\,1,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}1_{\,3,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}1_{\,1,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}1_{\,3,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}1_{\,1,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}1_{\,1,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}1_{\,3,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}1_{\,1,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}1_{\,3,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$(\text{-}0.\text{-}1_{1,3})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}0.\text{-}1_{3,1})$

$(1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}3_{4,3})$

$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}1_{4,3,1})$

$(\text{-}0.\text{-}1_{1,3})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}0.\text{-}1_{3,1})$

Interpretative action

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}0.\text{-}1_{3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}1_{1,3})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}0.\text{-}1_{3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}1_{1,3})$ $(\text{-}1.\text{-}1_{4,3,1})$

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}0.\text{-}1_{1,3})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}0.\text{-}1_{3,1})$

$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}1_{4,3,1})$$

$$(\text{-}0.\text{-}1_{1,3}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}1_{3,1})$$

2. Pre-semiotic dual system

$$(\text{-}1.\text{-}3_{3,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}1.\text{-}1_{1,3,4}\ \text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}\ \text{-}1.\text{-}1_{4,3,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}1.\text{-}3_{4,3})$$

Qualitative action

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}1_{4,3,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}1_{4,3,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}1_{4,3,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}1_{4,3,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}2_{\,1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}2_{\,1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,2}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}2_{\,2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,2}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}2_{\,2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}1_{\,1,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$(\text{-}0.\text{-}2_{1,2})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}0.\text{-}2_{2,1})$

$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}3_{4,3})$

$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}1_{4,3,1})$

$(\text{-}0.\text{-}2_{1,2})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}1.\text{-}2_{1,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}2_{4,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}0.\text{-}2_{2,1})$

Interpretative action

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}0.\text{-}2_{2,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}2_{1,2})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}2_{1,2})$ $(\text{-}0.\text{-}2_{1,2})$

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}0.\text{-}2_{1,2})$ $(\text{-}1.\text{-}1_{4,3,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ $\times$ $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}1_{1,3,4})$ $(\text{-}0.\text{-}2_{2,1})$

$$(-1.-1_{1,3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-1.-1_{4,3,1})$$

$$(-0.-2_{1,2}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-0.-2_{2,1})$$

3. Pre-semiotic dual system

$$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-1_{1,3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-1_{4,3,1}\ -1.-2_{4,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-1.-2_{1,4}) \quad (-1.-1_{4,3,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-1_{1,3,4}) \quad (-1.-2_{4,1})$$

$$(-1.-3_{3,4}) \quad (-1.-1_{4,3,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-1_{1,3,4}) \quad (-1.-3_{4,3})$$

$$(-1.-1_{1,3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-1_{4,3,1})$$

$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$

$$(-1.-1_{1,3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-1_{4,3,1})$$

$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$

Medial action

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}1_{1,3,4}) \times \curlywedge \gg (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

Objectal action

$$(\text{-}1.\text{-}1_{1,3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}1_{4,3,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

(-0.-3 $_{2,3}$) (-1.-1$_{4,3,1}$)
ʎ ≫ (-1.-2 $_{1,4}$) × ʎ ≫ (-1.-2$_{4,1}$)
(-1.-1 $_{1,3,4}$) (-0.-3 $_{3,2}$)

(-1.-3 $_{3,4}$) (-1.-1$_{4,3,1}$)
ʎ ≫ (-1.-2 $_{1,4}$) × ʎ ≫ (-1.-2$_{4,1}$)
(-1.-1 $_{1,3,4}$) (-1.-3$_{4,3}$)

(-1.-1 $_{1,3,4}$) (-1.-3 $_{3,4}$)
ʎ ≫ (-1.-2 $_{1,4}$) × ʎ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-1.-1$_{4,3,1}$)

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʎ ≫ (-1.-2 $_{1,4}$) × ʎ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

Interpretative action

(-1.-2 $_{1,4}$) (-0.-3 $_{3,2}$)
ʎ ≫ (-1.-3 $_{3,4}$) × ʎ ≫ (-1.-3$_{4,3}$)
(-0.-3 $_{2,3}$) (-1.-2$_{4,1}$)

(-1.-1 $_{1,3,4}$) (-0.-3 $_{3,2}$)
ʎ ≫ (-1.-3 $_{3,4}$) × ʎ ≫ (-1.-3$_{4,3}$)
(-0.-3 $_{2,3}$) (-1.-1$_{4,3,1}$)

(-1.-2 $_{1,4}$) (-1.-1$_{4,3,1}$)
ʎ ≫ (-1.-3 $_{3,4}$) × ʎ ≫ (-1.-3$_{4,3}$)
(-1.-1 $_{1,3,4}$) (-1.-2$_{4,1}$)

(-0.-3 $_{2,3}$) (-1.-1$_{4,3,1}$)
ʎ ≫ (-1.-3 $_{3,4}$) × ʎ ≫ (-1.-3$_{4,3}$)
(-1.-1 $_{1,3,4}$) (-0.-3 $_{3,2}$)

(-1.-1 1, 3,4) (-1.-2 4, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-1.-2 1,4) (-1.-1 4, 3, 1)

(-0.-3 2, 3) (-1.-2 4, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-1.-2 1,4) (-0.-3 3, 2)

4. Pre-semiotic dual system

(-1.-3 3,4 -1.-2 1,4 -1.-2 1,4 -0.-2 1, 2) × (-0.-2 2, 1 -1.-2 4, 1 -1.-2 4, 1 -1.-3 4, 3)

Qualitative action

(-1.-2 1,4) (-1.-2 4, 1)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-2 1,4) (-1.-2 4, 1)

(-1.-3 3,4) (-1.-2 4, 1)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-2 1,4) (-1.-3 4, 3)

(-1.-2 1,4) (-1.-2 4, 1)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-2 1,4) (-1.-2 4, 1)

(-1.-3 3,4) (-1.-2 4, 1)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-2 1,4) (-1.-3 4, 3)

(-1.-2 1,4) (-1.-3 4, 3)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-3 3,4) (-1.-2 4, 1)

(-1.-2 1,4) (-1.-3 4, 3)
ʌ ≫ (-0.-2 1, 2) × ʌ ≫ (-0.-2 2, 1)
(-1.-3 3,4) (-1.-2 4, 1)

Medial action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}2_{4,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}1.\text{-}2_{4,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

(-0.-2 1, 2) (-1.-2 4, 1)
ʌ ≫ (-1.-2 1,4) × ʌ ≫ (-1.-2 4, 1)
(-1.-2 1,4) (-0.-2 2, 1)

(-1.-3 3,4) (-1.-2 4, 1)
ʌ ≫ (-1.-2 1,4) × ʌ ≫ (-1.-2 4, 1)
(-1.-2 1,4) (-1.-3 4, 3)

(-1.-2 1,4) (-1.-3 4, 3)
ʌ ≫ (-1.-2 1,4) × ʌ ≫ (-1.-2 4, 1)
(-1.-3 3,4) (-1.-2 4, 1)

(-0.-2 1, 2) (-1.-3 4, 3)
ʌ ≫ (-1.-2 1,4) × ʌ ≫ (-1.-2 4, 1)
(-1.-3 3,4) (-0.-2 2, 1)

Interpretative action

(-1.-2 1,4) (-0.-2 2, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-0.-2 1, 2) (-1.-2 4, 1)

(-1.-2 1,4) (-0.-2 2, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-0.-2 1, 2) (-1.-2 4, 1)

(-1.-2 1,4) (-1.-2 4, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-1.-2 1,4) (-1.-2 4, 1)

(-0.-2 1, 2) (-1.-2 4, 1)
ʌ ≫ (-1.-3 3,4) × ʌ ≫ (-1.-3 4, 3)
(-1.-2 1,4) (-0.-2 2, 1)

$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$

$$(-0.-2_{1,2}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-0.-2_{2,1})$$

5. Pre-semiotic dual system

$$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-2_{1,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-2_{4,1}\ -1.-2_{4,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$

$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$

$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$

$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$

$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$

$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}2_{4,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}1.\text{-}2_{4,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

Interpretative action

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-1.-2_{4,1})$$

$$(-0.-3_{2,3}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-2_{1,4}) \quad (-0.-3_{3,2})$$

6. Pre-semiotic dual system

$$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -1.-2_{4,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$

$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$

$$(-1.-2_{1,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-2_{4,1})$$

Medial action

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

Objectal action

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}2_{1,4}) \times \curlywedge \gg (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-2 $_{1,4}$) × ʌ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

(-1.-3 $_{3,4}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-2 $_{1,4}$) × ʌ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-1.-3$_{4,3}$)

(-1.-3 $_{3,4}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-2 $_{1,4}$) × ʌ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-1.-3$_{4,3}$)

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-2 $_{1,4}$) × ʌ ≫ (-1.-2$_{4,1}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

Interpretative action

(-1.-2 $_{1,4}$) (-0.-3 $_{3,2}$)
ʌ ≫ (-1.-3 $_{3,4}$) × ʌ ≫ (-1.-3$_{4,3}$)
(-0.-3 $_{2,3}$) (-1.-2$_{4,1}$)

(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)
ʌ ≫ (-1.-3 $_{3,4}$) × ʌ ≫ (-1.-3$_{4,3}$)
(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)

(-1.-2 $_{1,4}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-3 $_{3,4}$) × ʌ ≫ (-1.-3$_{4,3}$)
(-1.-3 $_{3,4}$) (-1.-2$_{4,1}$)

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʌ ≫ (-1.-3 $_{3,4}$) × ʌ ≫ (-1.-3$_{4,3}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) & & (\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{3,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{1,4}) & & (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{2,3}) & & (\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{3,4}) & \times & \curlywedge \gg (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{1,4}) & & (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

7. Pre-semiotic dual system

$$(\text{-}1.\text{-}3_{3,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}1.\text{-}3_{4,3})$$

Qualitative action

$$\begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) & & (\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}2_{1,4}) & & (\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) & & (\text{-}1.\text{-}2_{4,1}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}2_{1,4}) & & (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) & & (\text{-}2.\text{-}2_{4,2,1}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{1,2,4}) & & (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) & & (\text{-}2.\text{-}2_{4,2,1}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{1,2,4}) & & (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) & & (\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}3_{3,4}) & & (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) & & (\text{-}1.\text{-}3_{4,3}) \\ \curlywedge \gg (\text{-}0.\text{-}2_{1,2}) & \times & \curlywedge \gg (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}3_{3,4}) & & (\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

Medial action

$$(-2.\text{-}2_{1,2,4}) \quad (-0.\text{-}2_{2,1})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-0.\text{-}2_{1,2}) \quad (-2.\text{-}2_{4,2,1})$$

$$(-1.\text{-}3_{3,4}) \quad (-0.\text{-}2_{2,1})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-0.\text{-}2_{1,2}) \quad (-1.\text{-}3_{4,3})$$

$$(-0.\text{-}2_{1,2}) \quad (-2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-2.\text{-}2_{1,2,4}) \quad (-0.\text{-}2_{2,1})$$

$$(-1.\text{-}3_{3,4}) \quad (-2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-2.\text{-}2_{1,2,4}) \quad (-1.\text{-}3_{4,3})$$

$$(-0.\text{-}2_{1,2}) \quad (-1.\text{-}3_{4,3})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-1.\text{-}3_{3,4}) \quad (-0.\text{-}2_{2,1})$$

$$(-2.\text{-}2_{1,2,4}) \quad (-1.\text{-}3_{4,3})$$
$$\curlywedge \gg (-1.\text{-}2_{1,4}) \times \curlywedge \gg (-1.\text{-}2_{4,1})$$
$$(-1.\text{-}3_{3,4}) \quad (-2.\text{-}2_{4,2,1})$$

Objectal action

$$(-1.\text{-}2_{1,4}) \quad (-0.\text{-}2_{2,1})$$
$$\curlywedge \gg (-2.\text{-}2_{1,2,4}) \times \curlywedge \gg (-2.\text{-}2_{4,2,1})$$
$$(-0.\text{-}2_{1,2}) \quad (-1.\text{-}2_{4,1})$$

$$(-1.\text{-}3_{3,4}) \quad (-0.\text{-}2_{2,1})$$
$$\curlywedge \gg (-2.\text{-}2_{1,2,4}) \times \curlywedge \gg (-2.\text{-}2_{4,2,1})$$
$$(-0.\text{-}2_{1,2}) \quad (-1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}2_{2,1})$$

Interpretative action

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}0.\text{-}2_{2,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}2_{2,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}0.\text{-}2_{2,1})$$

8. Pre-semiotic dual system

$$(\text{-}1.\text{-}3_{3,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}\ \text{-}1.\text{-}2_{4,1}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}1.\text{-}3_{4,3})$$

Qualitative action

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}0.\text{-}3_{2,3}) \times \curlywedge \gg (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

Medial action

$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$

$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$

$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$

$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$

Objectal action

$$(-1.-2_{1,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-1.-2_{4,1})$$

$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$

$(\text{-}0.\text{-}3_{2,3})$ $(\text{-}1.\text{-}2_{4,1})$
$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4})$ × $\curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$
$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}0.\text{-}3_{3,2})$

$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}2_{4,1})$
$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4})$ × $\curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$
$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}1.\text{-}3_{4,3})$

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4})$ × $\curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}0.\text{-}3_{2,3})$ $(\text{-}1.\text{-}3_{4,3})$
$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4})$ × $\curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$
$(\text{-}1.\text{-}3_{3,4})$ $(\text{-}0.\text{-}3_{3,2})$

Interpretative action

$(\text{-}2.\text{-}2_{1,2,4})$ $(\text{-}0.\text{-}3_{3,2})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ × $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}3_{2,3})$ $(\text{-}2.\text{-}2_{4,2,1})$

$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}0.\text{-}3_{3,2})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ × $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}0.\text{-}3_{2,3})$ $(\text{-}1.\text{-}2_{4,1})$

$(\text{-}2.\text{-}2_{1,2,4})$ $(\text{-}1.\text{-}2_{4,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ × $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}2.\text{-}2_{4,2,1})$

$(\text{-}0.\text{-}3_{2,3})$ $(\text{-}1.\text{-}2_{4,1})$
$\curlywedge \gg (\text{-}1.\text{-}3_{3,4})$ × $\curlywedge \gg (\text{-}1.\text{-}3_{4,3})$
$(\text{-}1.\text{-}2_{1,4})$ $(\text{-}0.\text{-}3_{3,2})$

$$(-1.-2_{1,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-2.-2_{1,2,4}) \quad (-1.-2_{4,1})$$

$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$

9. Pre-semiotic dual system

$$(-1.-3_{3,4}\ -2.-2_{1,2,4}\ -1.-3_{4,3}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-2_{4,2,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$

$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-1.-3_{4,3})$$

$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$

Medial action

$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$

$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$

$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$

$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$$
$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$

Objectal action

$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$

$$(-1.-3_{3,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-1.-3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{1,2,4}) \times \curlywedge \gg (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

Interpretative action

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$(-1.-3_{3,4})$ $(-2.-2_{1,2,4})$
$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$
$(-2.-2_{4,2,1})$ $(-0.-3_{2,3})$

$(-0.-3_{2,3})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-1.-3_{3,4}) \times \curlywedge \gg (-1.-3_{4,3})$
$(-2.-2_{1,2,4})$ $(-0.-3_{3,2})$

10. Pre-semiotic dual system

$(-1.-3_{3,4}\ -2.-3_{2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-3_{4,2}\ -1.-3_{4,3})$

Qualitative action

$(-2.-3_{2,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-2.-3_{4,2})$

$(-1.-3_{3,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-1.-3_{4,3})$

$(-1.-3_{3,4})$ $(-2.-3_{4,2})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-1.-3_{4,3})$

$(-1.-3_{3,4})$ $(-2.-3_{4,2})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-1.-3_{4,3})$

$(-1.-3_{3,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-1.-3_{4,3})$

$(-2.-3_{2,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-2.-3_{4,2})$

Medial action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

Interpretative action

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

11. Pre-semiotic dual system

$$(\text{-}2.\text{-}3_{2,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}2.\text{-}3_{4,2})$$

Qualitative action

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}0.\text{-}2_{1,2}) \times \curlywedge \gg (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}2.\text{-}2_{4,2,1})$$

Medial action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}2_{\,1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}2_{\,1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,\,2,\,1}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{\,1,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ \curlywedge \gg (\text{-}2.\text{-}2_{\,1,2,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}2.\text{-}2_{\,1,2,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ \curlywedge \gg (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$(-0.-2_{1,2})$		$(-1.-2_{1,4})$
人 ≫ $(-2.-2_{1,2,4})$	×	人 ≫ $(-2.-2_{4,2,1})$
$(-1.-2_{1,4})$		$(-0.-2_{2,1})$

$(-2.-3_{2,4})$		$(-1.-2_{4,1})$
人 ≫ $(-2.-2_{1,2,4})$	×	人 ≫ $(-2.-2_{4,2,1})$
$(-1.-2_{1,4})$		$(-2.-3_{4,2})$

$(-1.-2_{1,4})$		$(-2.-3_{4,2})$
人 ≫ $(-2.-2_{1,2,4})$	×	人 ≫ $(-2.-2_{4,2,1})$
$(-2.-3_{2,4})$		$(-1.-2_{4,1})$

$(-0.-2_{1,2})$		$(-2.-3_{4,2})$
人 ≫ $(-2.-2_{1,2,4})$	×	人 ≫ $(-2.-2_{4,2,1})$
$(-2.-3_{2,4})$		$(-0.-2_{2,1})$

Interpretative action

$(-2.-2_{1,2,4})$		$(-0.-2_{2,1})$
人 ≫ $(-2.-3_{2,4})$	×	人 ≫ $(-2.-3_{4,2})$
$(-0.-2_{1,2})$		$(-2.-2_{4,2,1})$

$(-1.-2_{1,4})$		$(-0.-2_{2,1})$
人 ≫ $(-2.-3_{2,4})$	×	人 ≫ $(-2.-3_{4,2})$
$(-0.-2_{1,2})$		$(-1.-2_{4,1})$

$(-2.-2_{1,2,4})$		$(-1.-2_{4,1})$
人 ≫ $(-2.-3_{2,4})$	×	人 ≫ $(-2.-3_{4,2})$
$(-1.-2_{1,4})$		$(-2.-2_{4,2,1})$

$(-0.-2_{1,2})$		$(-1.-2_{4,1})$
人 ≫ $(-2.-3_{2,4})$	×	人 ≫ $(-2.-3_{4,2})$
$(-1.-2_{1,4})$		$(-0.-2_{2,1})$

$(-1.-2_{1,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$
$(-2.-2_{1,2,4})$ $(-1.-2_{4,1})$

$(-0.-2_{1,2})$ $(-2.-2_{1,2,4})$
$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$
$(-2.-2_{1,2,4})$ $(-0.-2_{2,1})$

12. Pre-semiotic dual system

$(-2.-3_{2,4}\ -2.-2_{1,2,4}\ -1.-2_{1,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-2_{4,1}\ -2.-2_{4,2,1}\ -2.-3_{4,2})$

Qualitative action

$(-2.-2_{1,2,4})$ $(-1.-2_{4,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-2_{1,4})$ $(-2.-2_{4,2,1})$

$(-2.-3_{2,4})$ $(-1.-2_{4,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-2_{1,4})$ $(-2.-3_{4,2})$

$(-1.-2_{1,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-2_{1,2,4})$ $(-1.-2_{4,1})$

$(-2.-3_{2,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-2.-2_{1,2,})$

$(-1.-2_{1,4})$ $(-2.-3_{4,2}$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-1.-2_{4,1})$

$(-2.-2_{1,2,4})$ $(-2.-3_{4,2})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-2.-2_{4,2,1})$

Medial action

$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$

$$(-2.-3_{2,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-0.-3_{2,3}) \quad (-2.-3_{4,2})$$

$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$

$$(-2.-3_{2,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-2_{1,2,4}) \quad (-2.-3_{4,2})$$

$$(-0.-3_{2,3}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-3_{2,4}) \quad (-0.-3_{3,2})$$

$$(-2.-2_{1,2,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-1.-2_{1,4}) \times \curlywedge \gg (-1.-2_{4,1})$$
$$(-2.-3_{2,4}) \quad (-2.-2_{4,2,1})$$

Objectal action

$$(-1.-2_{1,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-1.-2_{4,1})$$

$$(-2.-3_{2,4}) \quad (-0.-3_{3,2})$$
$$\curlywedge \gg (-2.-2_{1,2,4}) \times \curlywedge \gg (-2.-2_{4,2,1})$$
$$(-0.-3_{2,3}) \quad (-2.-3_{4,2})$$

(-0.-3 2, 3) (-1.-2 4, 1)
ʌ ≫ (-2.-2 1, 2,4) × ʌ ≫ (-2.-2 4, 2, 1)
(-1.-2 1,4) (-0.-3 3, 2)

(-2.-3 2,4) (-1.-2 4, 1)
ʌ ≫ (-2.-2 1, 2,4) × ʌ ≫ (-2.-2 4, 2, 1)
(-1.-2 1,4) (-2.-3 4, 2)

(-1.-2 1,4) (-2.-3 4, 2)
ʌ ≫ (-2.-2 1, 2,4) × ʌ ≫ (-2.-2 4, 2, 1)
(-2.-3 2,4) (-1.-2 4, 1)

(-0.-3 2, 3) (-2.-3 4, 2)
ʌ ≫ (-2.-2 1, 2,4) × ʌ ≫ (-2.-2 4, 2, 1)
(-2.-3 2,4) (-0.-3 3, 2)

Interpretative action

(-2.-2 1, 2,4) (-0.-3 3, 2)
ʌ ≫ (-2.-3 2,4) × ʌ ≫ (-2.-3 4, 2)
(-0.-3 2, 3) (-2.-2 4, 2, 1)

(-1.-2 1,4) (-0.-3 3, 2)
ʌ ≫ (-2.-3 2,4) × ʌ ≫ (-2.-3 4, 2)
(-0.-3 2, 3) (-1.-2 4, 1)

(-2.-2 1, 2,4) (-1.-2 4, 1)
ʌ ≫ (-2.-3 2,4) × ʌ ≫ (-2.-3 4, 2)
(-1.-2 1,4) (-2.-2 4, 2, 1)

(-0.-3 2, 3) (-1.-2 4, 1)
ʌ ≫ (-2.-3 2,4) × ʌ ≫ (-2.-3 4, 2)
(-1.-2 1,4) (-0.-3 3, 2)

$(-1.-2_{1,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$
$(-2.-2_{1,2,4})$ $(-1.-2_{4,1})$

$(-0.-3_{2,3})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$
$(-2.-2_{1,2,4})$ $(-0.-3_{3,2})$

13. Pre-semiotic dual system

$(-2.-3_{2,4}\ -2.-2_{1,2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-2_{4,2,1}\ -2.-3_{4,2})$

Qualitative action

$(-2.-2_{1,2,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-2.-2_{4,2,1})$

$(-2.-3_{2,4})$ $(-1.-3_{4,3})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-1.-3_{3,4})$ $(-2.-3_{4,2})$

$(-1.-3_{3,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-2_{1,2,4})$ $(-1.-3_{4,3})$

$(-2.-3_{2,4})$ $(-2.-2_{4,2,1})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-2_{1,2,4})$ $(-2.-3_{4,2})$

$(-1.-3_{3,4})$ $(-2.-3_{4,2})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-1.-3_{4,3})$

$(-2.-2_{1,2,4})$ $(-2.-3_{4,2})$
$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$
$(-2.-3_{2,4})$ $(-2.-2_{4,2,1})$

Medial action

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

$$(\text{-}2.\text{-}3_{\,2,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$

$$(\text{-}2.\text{-}3_{\,2,4}) \quad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \quad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}2.\text{-}3_{4,\,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \quad (\text{-}2.\text{-}3_{4,\,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \quad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

Objectal action

$$(\text{-}1.\text{-}3_{\,3,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{\,1,\,2,4}) \quad \times \quad \curlywedge \gg (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}1.\text{-}3_{4,\,3})$$

$$(\text{-}2.\text{-}3_{\,2,4}) \quad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}2_{\,1,\,2,4}) \quad \times \quad \curlywedge \gg (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \quad (\text{-}2.\text{-}3_{4,\,2})$$

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʌ ≫ (-2.-2 $_{1,2,4}$) × ʌ ≫ (-2.-2$_{4,2,1}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

(-2.-3 $_{2,4}$) (-1.-3$_{4,3}$)
ʌ ≫ (-2.-2 $_{1,2,4}$) × ʌ ≫ (-2.-2$_{4,2,1}$)
(-1.-3 $_{3,4}$) (-2.-3$_{4,2}$)

(-1.-3 $_{3,4}$) (-2.-3$_{4,2}$)
ʌ ≫ (-2.-2 $_{1,2,4}$) × ʌ ≫ (-2.-2$_{4,2,1}$)
(-2.-3 $_{2,4}$) (-1.-3$_{4,3}$)

(-0.-3 $_{2,3}$) (-2.-3$_{4,2}$)
ʌ ≫ (-2.-2 $_{1,2,4}$) × ʌ ≫ (-2.-2$_{4,2,1}$)
(-2.-3 $_{2,4}$) (-0.-3 $_{3,2}$)

Interpretative action

(-2.-2 $_{1,2,4}$) (-0.-3 $_{3,2}$)
ʌ ≫ (-2.-3 $_{2,4}$) × ʌ ≫ (-2.-3$_{4,2}$)
(-0.-3 $_{2,3}$) (-2.-2$_{4,2,1}$)

(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)
ʌ ≫ (-2.-3 $_{2,4}$) × ʌ ≫ (-2.-3$_{4,2}$)
(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)

(-2.-2 $_{1,2,4}$) (-1.-3$_{4,3}$)
ʌ ≫ (-2.-3 $_{2,4}$) × ʌ ≫ (-2.-3$_{4,2}$)
(-1.-3 $_{3,4}$) (-2.-2$_{4,2,1}$)

(-0.-3 $_{2,3}$) (-1.-3$_{4,3}$)
ʌ ≫ (-2.-3 $_{2,4}$) × ʌ ≫ (-2.-3$_{4,2}$)
(-1.-3 $_{3,4}$) (-0.-3 $_{3,2}$)

$$(-1.-3_{3,4}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$$
$$(-2.-2_{1,2,4}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-2.-2_{4,2,1})$$
$$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$$
$$(-2.-2_{1,2,4}) \quad (-0.-3_{3,2})$$

14. Pre-semiotic dual system

$$(-2.-3_{2,4}\ -2.-3_{2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-3_{4,2}\ -2.-3_{4,2})$$

Qualitative action

$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$

$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$

$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$

$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$

$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$

$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$

Medial action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ \curlywedge \gg (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}2.\text{-}3_{4,\,2}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}2.\text{-}3_{\,2,4}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}2.\text{-}3_{4,\,2}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}2.\text{-}3_{\,2,4}) & & (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) & & (\text{-}1.\text{-}3_{4,\,3}) \\ \quad \curlywedge \gg (\text{-}2.\text{-}3_{\,2,4}) & \times & \quad \curlywedge \gg (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) & & (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$$
$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$

$$(-0.-3_{2,3}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-2.-3_{2,4}) \times \curlywedge \gg (-2.-3_{4,2})$$
$$(-2.-3_{2,4}) \quad (-0.-3_{3,2})$$

15. Pre-semiotic dual system

$$(-3.-3_{2,3,4} -2.-3_{2,4} -1.-3_{3,4} -0.-3_{2,3}) \times (-0.-3_{3,2} -1.-3_{4,3} -2.-3_{4,2} -3.-3_{4,3,2})$$

Qualitative action

$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$

$$(-3.-3_{2,3,4}) \quad (-1.-3_{4,3})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-1.-3_{3,4}) \quad (-3.-3_{4,3,2})$$

$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$

$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$

$$(-1.-3_{3,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-1.-3_{4,3})$$

$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$
$$\curlywedge \gg (-0.-3_{2,3}) \times \curlywedge \gg (-0.-3_{3,2})$$
$$(-2.-3_{2,4}) \quad (-2.-3_{4,2})$$

Medial action

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}3.\text{-}3_{4,3,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}2.\text{-}3_{4,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}3.\text{-}3_{4,3,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}3.\text{-}3_{4,3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}3.\text{-}3_{4,3,2})$$
$$\curlywedge \gg (\text{-}1.\text{-}3_{3,4}) \times \curlywedge \gg (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}2.\text{-}3_{4,2})$$

Objectal action

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}3.\text{-}3_{4,3,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}3.\text{-}3_{4,3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}3.\text{-}3_{4,3,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}3.\text{-}3_{4,3,2})$$
$$\curlywedge \gg (\text{-}2.\text{-}3_{2,4}) \times \curlywedge \gg (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}3.\text{-}3_{2,3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

Interpretative action

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}3.\text{-}3_{2,3,4}) \times \curlywedge \gg (\text{-}3.\text{-}3_{4,3,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$
$$\curlywedge \gg (\text{-}3.\text{-}3_{2,3,4}) \times \curlywedge \gg (\text{-}3.\text{-}3_{4,3,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}3.\text{-}3_{2,3,4}) \times \curlywedge \gg (\text{-}3.\text{-}3_{4,3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad (\text{-}1.\text{-}3_{4,3})$$
$$\curlywedge \gg (\text{-}3.\text{-}3_{2,3,4}) \times \curlywedge \gg (\text{-}3.\text{-}3_{4,3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad (\text{-}0.\text{-}3_{3,2})$$

(-1.-3 3,4) (-2.-3 4, 2)
  ∧ ≫ (-3.-3 2, 3,4) × ∧ ≫ (-3.-3 4, 3, 2)
(-2.-3 2,4) (-1.-3 4, 3)

(-0.-3 2, 3) (-2.-3 4, 2)
  ∧ ≫ (-3.-3 2, 3,4) × ∧ ≫ (-3.-3 4, 3, 2)
(-2.-3 2,4) (-0.-3 3, 2)

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(-1.-3 -1.-2 -1.-1 -0.-1) × (-0.-1 -1.-1 -1.-2 -1.-3)

Qualitative action

(-1.-3 3,4) (-1.-2 4, 1)
(-1.-1 1, 3,4) ≫ ϒ ≻ (-0.-1 1, 3) × (-0.-1 3, 1) ≫ ϒ ≻ (-1.-1 4, 3, 1)
(-1.-2 1,4) (-1.-3 4, 3)

(-1.-2 1,4) (-1.-3 4, 3)
(-1.-1 1, 3,4) ≫ ϒ ≻ (-0.-1 1, 3) × (-0.-1 3, 1) ≫ ϒ ≻ (-1.-1 4, 3, 1)
(-1.-3 3,4) (-1.-2 4, 1)

(-1.-3 3,4) (-1.-1 4, 3, 1)
(-1.-2 1,4) ≫ ϒ ≻ (-0.-1 1, 3) × (-0.-1 3, 1) ≫ ϒ ≻ (-1.-2 4, 1)
(-1.-1 1, 3,4) (-1.-3 4, 3)

(-1.-1 1, 3,4) (-1.-3 4, 3)
(-1.-2 1,4) ≫ ϒ ≻ (-0.-1 1, 3) × (-0.-1 3, 1) ≫ ϒ ≻ (-1.-2 4, 1)
(-1.-3 3,4) (-1.-1 4, 3, 1)

(-1.-1 1, 3,4) (-1.-2 4, 1)
(-1.-3 3,4) ≫ ϒ ≻ (-0.-1 1, 3) × (-0.-1 3, 1) ≫ ϒ ≻ (-1.-3 4, 3)
(-1.-2 1,4) (-1.-1 4, 3, 1)

$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}1_{1,3}) \quad \times \quad (\text{-}0.\text{-}1_{3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}1_{1,3,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$

Medial action

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}1_{1,3}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}1_{3,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}1_{1,3}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}1_{3,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}1_{1,3}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}1_{3,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}1_{3,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}1_{1,3}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}1_{1,3}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}0.\text{-}1_{3,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}0.\text{-}1_{3,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \quad \times \quad (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}1_{1,3}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$

Objectal action

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}1_{4,3,1})$$
$$(\text{-}0.\text{-}1_{1,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}1_{3,1})$$
$$(\text{-}1.\text{-}1_{1,3,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$

$$(-0.-1_{1,3}) \gg \curlyvee \succ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-2_{1,4})\\(-1.-3_{3,4})\end{matrix} \times \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1}) \gg \curlyvee \succ (-0.-1_{3,1})\\(-1.-1_{4,3,1})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(-0.-1_{1,3})\\(-1.-2_{1,4})\\(-1.-3_{3,4})\end{matrix} \times \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1}) \gg \curlyvee \succ (-1.-1_{4,3,1})\\(-0.-1_{3,1})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(-1.-3_{3,4})\\(-1.-2_{1,4})\\(-0.-1_{1,3})\end{matrix} \times \begin{matrix}(-0.-1_{3,1})\\(-1.-2_{4,1}) \gg \curlyvee \succ (-1.-1_{4,3,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \curlyvee \succ \begin{matrix}(-0.-1_{1,3})\\(-1.-2_{1,4})\\(-1.-1_{1,3,4})\end{matrix} \times \begin{matrix}(-1.-1_{4,3,1})\\(-1.-2_{4,1}) \gg \curlyvee \succ (-1.-3_{4,3})\\(-0.-1_{3,1})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \curlyvee \succ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-2_{1,4})\\(-0.-1_{1,3})\end{matrix} \times \begin{matrix}(-0.-1_{3,1})\\(-1.-2_{4,1}) \gg \curlyvee \succ (-1.-3_{4,3})\\(-1.-1_{4,3,1})\end{matrix}$$

Interpretative action

$$(-0.-1_{1,3}) \gg \curlyvee \succ \begin{matrix}(-1.-2_{1,4})\\(-1.-3_{3,4})\\(-1.-1_{1,3,4})\end{matrix} \times \begin{matrix}(-1.-1_{4,3,1})\\(-1.-3_{4,3}) \gg \curlyvee \succ (-0.-1_{3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-0.-1_{1,3}) \gg \curlyvee \succ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-3_{3,4})\\(-1.-2_{1,4})\end{matrix} \times \begin{matrix}(-1.-2_{4,1})\\(-1.-3_{4,3}) \gg \curlyvee \succ (-0.-1_{3,1})\\(-1.-1_{4,3,1})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(-0.-1_{1,3})\\(-1.-3_{3,4})\\(-1.-2_{1,4})\end{matrix} \times \begin{matrix}(-1.-2_{4,1})\\(-1.-3_{4,3}) \gg \curlyvee \succ (-1.-1_{4,3,1})\\(-0.-1_{3,1})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-1.-3_{3,4})\\(-0.-1_{1,3})\end{matrix} \times (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-1_{3,1})\\(-1.-1_{4,3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-0.-1_{1,3})\\(-1.-3_{3,4})\\(-1.-1_{1,3,4})\end{matrix} \times (-1.-3_{4,3}) \ \Upsilon \ \succ \begin{matrix}(-1.-1_{4,3,1})\\(-0.-1_{3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-3_{3,4})\\(-0.-1_{1,3})\end{matrix} \times (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-1_{3,1})\\(-1.-2_{4,1})\\(-1.-1_{4,3,1})\end{matrix}$$

2. Pre-semiotic dual system

$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-1_{1,3,4}\ -0.-2_{1,2}) \times (-0.-2_{2,1}\ -1.-1_{4,3,1}\ -1.-2_{1,4}\ -1.-3_{4,3})$

Qualitative action

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix} \times (-0.-2_{2,1}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-1.-1_{4,3,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-0.-2_{1,2})\\(-1.-3_{3,4})\end{matrix} \times (-0.-2_{2,1}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-1.-1_{4,3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-2_{1,2})\\(-1.-1_{1,3,4})\end{matrix} \times (-0.-2_{2,1}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{4,3,1})\\(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-0.-2_{1,2})\\(-1.-3_{3,4})\end{matrix} \times (-0.-2_{2,1}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-1.-1_{4,3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix} \times (-0.-2_{2,1}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-1.-1_{4,3,1})\\(-1.-3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4})\\(\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2})\\(\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}1_{4,3,1})\\(\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}2_{1,4})\\(\text{-}0.\text{-}2_{1,2})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}1_{4,3,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2})\\(\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{4,3,1})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4})\\(\text{-}1.\text{-}2_{1,4})\\(\text{-}0.\text{-}2_{1,2})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}1_{4,3,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{4,3,1})\\(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-1.-3_{3,4})\\(-0.-2_{1,2})\end{matrix} \times (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-1.-1_{4,3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{1,2})\\(-1.-3_{3,4})\\(-1.-1_{1,3,4})\end{matrix} \times (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{4,3,1})\\(-1.-2_{4,1})\\(-0.-2_{2,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-3_{3,4})\\(-0.-2_{1,2})\end{matrix} \times (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-1.-2_{4,1})\\(-1.-1_{4,3,1})\end{matrix}$$

3. Pre-semiotic dual system

$$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-1_{1,3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-1_{4,3,1}\ -1.-2_{4,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-3_{2,3})\\(-1.-2_{1,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-1.-1_{4,3,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-0.-3_{2,3})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1})\\(-1.-1_{4,3,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-3_{2,3})\\(-1.-1_{1,3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{4,3,1})\\(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-0.-3_{2,3})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1})\\(-1.-1_{4,3,1})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-1_{1,3,4})\\(-0.-3_{2,3})\\(-1.-2_{1,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-1.-3_{4,3})\\(-1.-1_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,2,3}) \\ (\text{-}1.\text{-}1_{\,1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}3_{\,3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,2}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}3_{\,2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,3}) \\ (\text{-}1.\text{-}2_{\,1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}3_{\,3,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}3_{\,2,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,2}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,3}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}3_{\,3,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}1_{\,1,3,4}) \\ (\text{-}0.\text{-}3_{\,2,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,2}) \\ (\text{-}1.\text{-}1_{4,3,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}1_{\,1,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,2}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}1_{4,3,1})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}1_{1,3,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}1_{1,3,4}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}1_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}1_{4,3,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(-1.-1_{1,3,4})\ \gg \succ\ \begin{matrix}(-1.-2_{1,4})\\(-1.-3_{3,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3})\ \gg \succ\ \begin{matrix}(-0.-3_{3,2})\\(-1.-1_{4,3,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-0.-3_{2,3})\\(-1.-3_{3,4})\\(-1.-1_{1,3,4})\end{matrix} \times (-1.-3_{4,3})\ \gg \succ\ \begin{matrix}(-1.-1_{4,3,1})\\(-1.-2_{4,1})\\(-0.-3_{3,2})\end{matrix}$$

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-1.-1_{1,3,4})\\(-1.-3_{3,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3})\ \gg \succ\ \begin{matrix}(-0.-3_{3,2})\\(-1.-2_{4,1})\\(-1.-1_{4,3,1})\end{matrix}$$

4. Pre-semiotic system

$$(-1.-3_{3,4}\ -1.-2_{1,4}\ -1.-2_{1,4}\ -0.-2_{1,2}) \times (-0.-2_{2,1}\ -1.-2_{4,1}\ -1.-2_{4,1}\ -1.-3_{4,3})$$

Qualitative action

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-1.-3_{3,4})\\(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix} \times (-0.-2_{2,1})\ \gg \succ\ \begin{matrix}(-1.-2_{4,1})\\(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-1.-2_{1,4})\\(-0.-2_{1,2})\\(-1.-3_{3,4})\end{matrix} \times (-0.-2_{2,1})\ \gg \succ\ \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-1.-3_{3,4})\\(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix} \times (-0.-2_{2,1})\ \gg \succ\ \begin{matrix}(-1.-2_{4,1})\\(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-2_{1,4})\ \gg \succ\ \begin{matrix}(-1.-2_{1,4})\\(-0.-2_{1,2})\\(-1.-3_{3,4})\end{matrix} \times (-0.-2_{2,1})\ \gg \succ\ \begin{matrix}(-1.-3_{3,4})\\(-1.-2_{4,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-1.-3_{3,4})\ \gg \succ\ \begin{matrix}(-1.-2_{1,4})\\(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix} \times (-0.-2_{2,1})\ \gg \succ\ \begin{matrix}(-1.-2_{4,1})\\(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{\,1,\,2}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,2,\,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{\,2,\,1}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) \\ (\text{-}1.\text{-}2_{\,1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}2_{\,1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{\,1,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}2_{\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}2_{\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}2_{4,\,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}2_{\,1,\,2}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{\,2,\,1}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}2_{1,2}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

Interpretative action

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}2_{1,2}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}2_{1,2}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \curlyvee \succ (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}2_{2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}2_{1,2}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

5. Pre-semiotic dual system

$(\text{-}1.\text{-}3_{3,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}\ \text{-}1.\text{-}2_{4,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}1.\text{-}3_{3,4})$

Qualitative action

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{3,4})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}3_{3,2}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}0.\text{-}3_{2,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}3_{2,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}3_{4})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \gg \ \curlyvee \ \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}0.\text{-}3_{2,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}2_{4,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{3,2}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

Interpretative action

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

6. Pre-semiotic dual system

$(\text{-}1.\text{-}3_{3,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}1.\text{-}3_{3,4}\ \text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}\ \text{-}1.\text{-}3_{4,3}\ \text{-}1.\text{-}2_{4,1}\ \text{-}1.\text{-}3_{4,3})$

Qualitative action

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{3,4})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{2,3}) \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

Medial action

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

Objectal action

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \qquad\qquad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4})$$
$$(\text{-}0.\text{-}3_{2,3}) \qquad\qquad (\text{-}1.\text{-}3_{3,4})$$

Interpretative action

$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}1.\text{-}3_{3,4})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}1.\text{-}3_{3,4})$$

$$(\text{-}0.\text{-}3_{2,3}) \qquad\qquad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \qquad\qquad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

7. Pre-semiotic dual system

$(\text{-}1.\text{-}3_{3,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}1.\text{-}3_{4,3})$

Qualitative action

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}2_{1,2})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2})\\(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})\\(\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}0.\text{-}2_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2})\\(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{1,4})\\(\text{-}0.\text{-}2_{1,2})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}2_{4,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}3_{3,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}3_{4,3}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}3_{4,3})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$

Interpretative action

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}2.\text{-}2_{4,2,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}3_{4,3}) \\ (1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}3_{3,4}) \\ (\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}3_{4,3}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{1,2,4})\\(-0.-2_{1,2})\end{matrix}(-1.-3_{3,4}) \quad \times \quad (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-2.-2_{4,2,1})\end{matrix}(-1.-2_{4,1})$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{1,2})\\(-1.-2_{1,4})\end{matrix}(-1.-3_{3,4}) \quad \times \quad (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-0.-2_{2,1})\end{matrix}(-2.-2_{4,2,1})$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-0.-2_{1,2})\end{matrix}(-1.-3_{3,4}) \quad \times \quad (-1.-3_{4,3}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-1.-2_{4,1})\end{matrix}(-2.-2_{4,2,1})$$

8. Pre-semiotic dual system

$(-1.-3_{3,4}\ -2.-2_{1,2,4}\ -1.-2_{1,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-2_{4,1}\ -2.-2_{4,2,1}\ -1.-3_{4,3})$

Qualitative action

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-2.-2_{1,2,4})\end{matrix}(-0.-3_{2,3}) \quad \times \quad (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{4,2,1})\\(-1.-3_{4,3})\end{matrix}(-1.-2_{4,1})$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{1,2,4})\\(-1.-3_{3,4})\end{matrix}(-0.-3_{2,3}) \quad \times \quad (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-2.-2_{4,2,1})\end{matrix}(-1.-2_{4,1})$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-1.-2_{1,4})\end{matrix}(-0.-3_{2,3}) \quad \times \quad (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-1.-3_{4,3})\end{matrix}(-2.-2_{4,2,1})$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-1.-3_{3,4})\end{matrix}(-0.-3_{2,3}) \quad \times \quad (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-1.-2_{4,1})\end{matrix}(-2.-2_{4,2,1})$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-2.-2_{1,2,4})\end{matrix}(-0.-3_{2,3}) \quad \times \quad (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{4,2,1})\\(-1.-3_{4,3})\end{matrix}(-1.-2_{4,1})$$

$$\begin{matrix} & (\text{-}2.\text{-}2_{\,1,\,2,4}) & & & (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ & & (\text{-}0.\text{-}3_{\,2,\,3}) & \times & (\text{-}0.\text{-}3_{\,3,\,2}) \gg \Upsilon \succ & & (\text{-}1.\text{-}3_{4,\,3}) \\ & (\text{-}1.\text{-}2_{\,1,4}) & & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \end{matrix}$$

Medial action

$$\begin{matrix} & (\text{-}1.\text{-}3_{\,3,4}) & & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ & (\text{-}2.\text{-}2_{\,1,\,2,4}) & & & (\text{-}1.\text{-}3_{4,\,3}) \end{matrix}$$

$$\begin{matrix} & (\text{-}2.\text{-}2_{\,1,\,2,4}) & & & (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ & (\text{-}1.\text{-}3_{\,3,4}) & & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \end{matrix}$$

$$\begin{matrix} & (\text{-}0.\text{-}3_{\,2,\,3}) & & & (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ & (\text{-}1.\text{-}3_{\,3,4}) & & & (\text{-}0.\text{-}3_{\,3,\,2}) \end{matrix}$$

$$\begin{matrix} & (\text{-}1.\text{-}3_{\,3,4}) & & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ & (\text{-}0.\text{-}3_{\,2,\,3}) & & & (\text{-}1.\text{-}3_{4,\,3}) \end{matrix}$$

$$\begin{matrix} & (\text{-}0.\text{-}3_{\,2,\,3}) & & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}1.\text{-}3_{4,\,3}) \\ & (\text{-}2.\text{-}2_{\,1,\,2,4}) & & & (\text{-}0.\text{-}3_{\,3,\,2}) \end{matrix}$$

$$\begin{matrix} & (\text{-}2.\text{-}2_{\,1,\,2,4}) & & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ & & (\text{-}1.\text{-}2_{\,1,4}) & \times & (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ & & (\text{-}1.\text{-}3_{4,\,3}) \\ & (\text{-}0.\text{-}3_{\,2,\,3}) & & & (\text{-}2.\text{-}2_{4,\,2,\,1}) \end{matrix}$$

Objectal action

$$\begin{matrix} & (\text{-}1.\text{-}3_{\,3,4}) & & & (\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ & & (\text{-}2.\text{-}2_{\,1,\,2,4}) & \times & (\text{-}2.\text{-}2_{4,\,2,\,1}) \gg \Upsilon \succ & & (\text{-}0.\text{-}3_{\,3,\,2}) \\ & (\text{-}1.\text{-}2_{\,1,4}) & & & (\text{-}1.\text{-}3_{4,\,3}) \end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}2_{4,1})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \succ (-1.-3_{3,4}) \begin{matrix}(-2.-2_{1,2,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3}) \gg \succ (-1.-2_{4,1}) \begin{matrix}(-0.-3_{3,2})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \succ (-1.-3_{3,4}) \begin{matrix}(-0.-3_{2,3})\\(-1.-2_{1,4})\end{matrix} \times (-1.-3_{4,3}) \gg \succ (-2.-2_{4,2,1}) \begin{matrix}(-1.-2_{4,1})\\(-0.-3_{3,2})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \succ (-1.-3_{3,4}) \begin{matrix}(-1.-2_{1,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3}) \gg \succ (-2.-2_{4,2,1}) \begin{matrix}(-0.-3_{3,2})\\(-1.-2_{4,1})\end{matrix}$$

9. Pre-semiotic dual system

$(-1.-3_{3,4}\ -2.-2_{1,2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-2_{4,2,1}\ -1.-3_{4,3})$

Qualitative action

$$(-1.-3_{3,4}) \gg \succ (-0.-3_{2,3}) \begin{matrix}(-1.-3_{3,4})\\(-2.-2_{1,2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \succ (-1.-3_{4,3}) \begin{matrix}(-2.-2_{4,2,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \succ (-0.-3_{2,3}) \begin{matrix}(-2.-2_{1,2,4})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \succ (-1.-3_{4,3}) \begin{matrix}(-1.-3_{4,3})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \succ (-0.-3_{2,3}) \begin{matrix}(-1.-3_{3,4})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \succ (-2.-2_{4,2,1}) \begin{matrix}(-1.-3_{4,3})\\(-1.-3_{4,3})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \succ (-0.-3_{2,3}) \begin{matrix}(-1.-3_{3,4})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \succ (-2.-2_{4,2,1}) \begin{matrix}(-1.-3_{4,3})\\(-1.-3_{4,3})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \succ (-0.-3_{2,3}) \begin{matrix}(-2.-2_{1,2,4})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \succ (-1.-3_{4,3}) \begin{matrix}(-2.-2_{4,2,1})\\(-1.-3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

Medial action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

Objectal action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

Interpretative action

$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

10. Pre-semiotic dual system

$$(\text{-}1.\text{-}3_{3,4}\ \text{-}2.\text{-}3_{2,4}\ \text{-}1.\text{-}3_{3,4}\ \text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}\ \text{-}1.\text{-}3_{4,3}\ \text{-}2.\text{-}3_{4,2}\ \text{-}1.\text{-}3_{4,3})$$

Qualitative action

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{\,1,\,2,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}1.\text{-}3_{\,3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}1.\text{-}3_{\,3,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}1.\text{-}3_{\,3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,\,3}) \\ (\text{-}2.\text{-}3_{4,\,2}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}3_{4,\,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \quad \times \quad (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \quad \times \quad (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \quad \times \quad (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \quad \times \quad (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \quad \times \quad (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

Interpretative action

$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$
$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}3_{3,4}) \quad\quad (\text{-}0.\text{-}3_{3,2})$$
$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{3,4}) \times (\text{-}1.\text{-}3_{4,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}0.\text{-}3_{2,3}) \quad\quad (\text{-}1.\text{-}3_{4,3})$$

11. Pre-semiotic dual system

$(\text{-}2.\text{-}3_{2,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}2_{1,4}\ \text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}\ \text{-}1.\text{-}2_{4,1}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}2.\text{-}3_{4,2})$

Qualitative action

$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$

$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}2.\text{-}3_{2,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \quad\quad (\text{-}2.\text{-}2_{4,2,1})$$
$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{1,2}) \times (\text{-}0.\text{-}2_{2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2})$$
$$(\text{-}2.\text{-}2_{1,2,4}) \quad\quad (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{\,1,\,2}) \quad \times \quad (\text{-}0.\text{-}2_{\,2,\,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}1.\text{-}2_{\,1,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

Medial action

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}2_{\,1,\,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{\,2,\,1})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}0.\text{-}2_{\,1,\,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

$$(\text{-}0.\text{-}2_{\,1,\,2}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}0.\text{-}2_{\,2,\,1})$$

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}0.\text{-}2_{\,2,\,1})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}2_{\,1,\,2}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}0.\text{-}2_{\,1,\,2}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}0.\text{-}2_{\,2,\,1})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}0.\text{-}2_{\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{\,1,4}) \quad \times \quad (\text{-}1.\text{-}2_{4,\,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}0.\text{-}2_{\,1,\,2}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

Objectal action

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}1.\text{-}2_{4,\,1})$$
$$(\text{-}0.\text{-}2_{\,1,\,2}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{\,1,\,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,\,2,\,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{\,2,\,1})$$
$$(\text{-}1.\text{-}2_{\,1,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{2,4}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}2_{1,2,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}2_{1,2})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}0.\text{-}2_{1,2}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \\ (\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}0.\text{-}2_{2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}2_{1,2}) \\ (\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{2,4}) \\ (\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1}) \\ (\text{-}0.\text{-}2_{2,1})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{1,2,4})\\(-2.-3_{2,4})\\(-0.-2_{1,2})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-1.-2_{4,1})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{1,2})\\(-2.-3_{2,4})\\(-1.-2_{1,4})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-0.-2_{2,1})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-2.-3_{2,4})\\(-0.-2_{1,2})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-2_{2,1})\\(-2.-2_{4,2,1})\\(-1.-2_{4,1})\end{matrix}$$

12. Pre-semiotic dual system

$$(-2.-3_{2,4}\ -2.-2_{1,2,4}\ -1.-2_{1,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-2_{4,1}\ -2.-2_{4,2,1}\ -2.-3_{4,2})$$

Qualitative action

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-2.-2_{1,2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{4,2,1})\\(-1.-2_{4,1})\\(-2.-3_{4,2})\end{matrix}$$

$$(-1.-2_{1,4}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{1,2,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-1.-2_{4,1})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-1.-2_{1,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{4,1})\\(-2.-3_{4,2})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-2.-2_{4,2,1})\\(-1.-2_{4,1})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-2_{1,4})\\(-0.-3_{2,3})\\(-2.-2_{1,2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{4,2,1})\\(-2.-3_{4,2})\\(-1.-2_{4,1})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{\,1,\,2,4}) \\ (\text{-}2.\text{-}3_{\,2,4}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}0.\text{-}3_{\,3,\,2}) \gg \curlyvee \succ (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1})\end{matrix}$$

Medial action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{\,1,\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}3_{\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}0.\text{-}3_{\,2,\,3}) \\ (\text{-}2.\text{-}3_{\,2,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}2.\text{-}2_{\,1,\,2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}2_{4,\,2,\,1}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}0.\text{-}3_{\,3,\,2})\end{matrix}$$

$$\begin{matrix}(\text{-}2.\text{-}2_{\,1,\,2,4}) \\ (\text{-}2.\text{-}3_{\,2,4}) \gg \curlyvee \succ (\text{-}1.\text{-}2_{\,1,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}1.\text{-}2_{4,\,1}) \gg \curlyvee \succ (\text{-}2.\text{-}3_{4,\,2}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\text{-}2.\text{-}3_{\,2,4}) \\ (\text{-}0.\text{-}3_{\,2,\,3}) \gg \curlyvee \succ (\text{-}2.\text{-}2_{\,1,\,2,4}) \\ (\text{-}1.\text{-}2_{\,1,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}2_{4,\,1}) \\ (\text{-}2.\text{-}2_{4,\,2,\,1}) \gg \curlyvee \succ (\text{-}0.\text{-}3_{\,3,\,2}) \\ (\text{-}2.\text{-}3_{4,\,2})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ (\text{-}1.\text{-}2_{4,1})$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}0.\text{-}3_{3,2})\end{matrix} \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}0.\text{-}3_{2,3})\end{matrix} \times \begin{matrix}(\text{-}0.\text{-}3_{3,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,2})$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4}) \\ (\text{-}1.\text{-}2_{1,4})\end{matrix} \times \begin{matrix}(\text{-}1.\text{-}2_{4,1}) \\ (\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}2.\text{-}3_{4,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3}) \\ (\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}2.\text{-}3_{4,2}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}2.\text{-}3_{3,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4}) \\ (\text{-}1.\text{-}2_{1,4}) \\ (\text{-}2.\text{-}3_{2,4})\end{matrix} \times \begin{matrix}(\text{-}2.\text{-}3_{4,2}) \\ (\text{-}2.\text{-}2_{4,2,1}) \\ (\text{-}1.\text{-}2_{4,1})\end{matrix} \gg \Upsilon \succ (\text{-}0.\text{-}3_{3,2})$$

$$(\text{-}1.\text{-}2_{1,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}2_{4,1})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}1.\text{-}2_{1,4})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{4,1})\\(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}2_{1,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}2_{4,1})\end{matrix}$$

13. Pre-semiotic system

$$(\text{-}2.\text{-}3_{2,4}\ \text{-}2.\text{-}2_{1,2,4}\ \text{-}1.\text{-}3_{3,4}\ \text{-}0.\text{-}3_{2,3}) \times (\text{-}0.\text{-}3_{3,2}\ \text{-}1.\text{-}3_{4,3}\ \text{-}2.\text{-}2_{4,2,1}\ \text{-}2.\text{-}3_{4,2})$$

Qualitative action

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}2.\text{-}2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix} \times (\text{-}0.\text{-}3_{3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,2,\,3}) \quad \times \quad (\text{-}0.\text{-}3_{\,3,\,2}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}1.\text{-}3_{\,3,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

Medial action

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

$$(\text{-}0.\text{-}3_{\,2,\,3}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}0.\text{-}3_{\,3,\,2})$$

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}0.\text{-}3_{\,2,\,3}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}0.\text{-}3_{\,3,\,2})$$

$$(\text{-}2.\text{-}2_{\,1,\,2,4}) \qquad\qquad (\text{-}0.\text{-}3_{\,3,\,2})$$
$$(\text{-}2.\text{-}3_{\,2,4}) \gg \Upsilon \succ (\text{-}1.\text{-}3_{\,3,4}) \quad \times \quad (\text{-}1.\text{-}3_{4,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}3_{4,\,2})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \qquad\qquad (\text{-}2.\text{-}2_{4,\,2,\,1})$$

Objectal action

$$(\text{-}2.\text{-}3_{\,2,4}) \qquad\qquad (\text{-}1.\text{-}3_{4,\,3})$$
$$(\text{-}0.\text{-}3_{\,2,\,3}) \gg \Upsilon \succ (\text{-}2.\text{-}2_{\,1,\,2,4}) \quad \times \quad (\text{-}2.\text{-}2_{4,\,2,\,1}) \gg \Upsilon \succ (\text{-}0.\text{-}3_{\,3,\,2})$$
$$(\text{-}1.\text{-}3_{\,3,4}) \qquad\qquad (\text{-}2.\text{-}3_{4,\,2})$$

$$(\text{-}0.\text{-}3_{2,3})\gg\Upsilon\succ\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix}\times(\text{-}2.\text{-}2_{4,2,1})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4})\gg\Upsilon\succ\begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix}\times(\text{-}2.\text{-}2_{4,2,1})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix}\times(\text{-}2.\text{-}2_{4,2,1})\gg\Upsilon\succ\begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4})\gg\Upsilon\succ\begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix}\times(\text{-}2.\text{-}2_{4,2,1})\gg\Upsilon\succ\begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4})\gg\Upsilon\succ\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix}\times(\text{-}2.\text{-}2_{4,2,1})\gg\Upsilon\succ\begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}2_{1,2,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix}\times(\text{-}2.\text{-}3_{4,2})\gg\Upsilon\succ\begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}2_{4,2,1})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3})\gg\Upsilon\succ\begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix}\times(\text{-}2.\text{-}3_{4,2})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4})\gg\Upsilon\succ\begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}2.\text{-}2_{1,2,4})\end{matrix}\times(\text{-}2.\text{-}3_{4,2})\gg\Upsilon\succ\begin{matrix}(\text{-}2.\text{-}2_{4,2,1})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-2.-2_{1,2,4})\\(-2.-3_{2,4})\\(-0.-3_{2,3})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{3,2})\\(-1.-3_{4,3})\\(-2.-2_{4,2,1})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{2,3})\\(-2.-3_{2,4})\\(-1.-3_{3,4})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-2.-2_{4,2,1})\\(-0.-3_{3,2})\end{matrix}$$

$$(-2.-2_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-2.-3_{2,4})\\(-0.-3_{2,3})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{3,2})\\(-2.-2_{4,2,1})\\(-1.-3_{4,3})\end{matrix}$$

14. Pre-semiotic dual system

$$(-2.-3_{2,4}\ -2.-3_{2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-3_{4,2}\ -2.-3_{4,2})$$

Qualitative action

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-1.-3_{4,3})\\(-2.-3_{4,2})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-1.-3_{4,3})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-2.-3_{4,2})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-2.-3_{4,2})\\(-1.-3_{4,3})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-3_{2,3})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-2.-3_{4,2})\\(-1.-3_{4,3})\end{matrix}$$

$$(-2.\text{-}3_{2,4}) \quad\quad (-1.\text{-}3_{4,3})$$
$$(-2.\text{-}3_{2,4}) \gg \curlyvee \succ (-0.\text{-}3_{2,3}) \quad \times \quad (-0.\text{-}3_{3,2}) \gg \curlyvee \succ (-2.\text{-}3_{4,2})$$
$$(-1.\text{-}3_{3,4}) \quad\quad (-2.\text{-}3_{4,2})$$

Medial action

$$(-2.\text{-}3_{2,4}) \quad\quad (-2.\text{-}3_{4,2})$$
$$(-0.\text{-}3_{2,3}) \gg \curlyvee \succ (-1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-0.\text{-}3_{3,2})$$
$$(-2.\text{-}3_{2,4}) \quad\quad (-2.\text{-}3_{4,2})$$

$$(-2.\text{-}3_{2,4}) \quad\quad (-2.\text{-}3_{4,2})$$
$$(-0.\text{-}3_{2,3}) \gg \curlyvee \succ (-1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-0.\text{-}3_{3,2})$$
$$(-2.\text{-}3_{2,4}) \quad\quad (-2.\text{-}3_{4,2})$$

$$(-0.\text{-}3_{2,3}) \quad\quad (-2.\text{-}3_{4,2})$$
$$(-2.\text{-}3_{2,4}) \gg \curlyvee \succ -1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-2.\text{-}3_{4,2})$$
$$(-2.\text{-}3_{2,4}) \quad\quad (-0.\text{-}3_{3,2})$$

$$(-2.\text{-}3_{2,4}) \quad\quad (-0.\text{-}3_{3,2})$$
$$(-2.\text{-}3_{2,4}) \gg \curlyvee \succ (-1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-2.\text{-}3_{4,2})$$
$$(-0.\text{-}3_{2,3}) \quad\quad (-2.\text{-}3_{4,2})$$

$$(-0.\text{-}3_{2,3}) \quad\quad (-2.\text{-}3_{4,2})$$
$$(-2.\text{-}3_{2,4}) \gg \quad \succ (-1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-2.\text{-}3_{4,2})$$
$$(-2.\text{-}3_{2,4}) \quad\quad (-0.\text{-}3_{3,2})$$

$$(-2.\text{-}3_{2,4}) \quad\quad (-0.\text{-}3_{3,2})$$
$$(-2.\text{-}3_{2,4}) \gg \curlyvee \succ (-1.\text{-}3_{3,4}) \quad \times \quad (-1.\text{-}3_{4,3}) \gg \curlyvee \succ (-2.\text{-}3_{4,2})$$
$$(-0.\text{-}3_{2,3}) \quad\quad (-2.\text{-}3_{4,2})$$

Objectal action

$$(-2.\text{-}3_{2,4}) \quad\quad (-1.\text{-}3_{4,3})$$
$$(-0.\text{-}3_{2,3}) \gg \curlyvee \succ (-2.\text{-}3_{2,4}) \quad \times \quad (-2.\text{-}3_{4,2}) \gg \curlyvee \succ (-0.\text{-}3_{3,2})$$
$$(-1.\text{-}3_{3,4}) \quad\quad (-2.\text{-}3_{4,2})$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \quad \times \quad \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{3,2})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{2,3})\\(-1.-3_{3,4})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-0.-3_{3,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-0.-3_{2,3})\end{matrix} \times (-2.-3_{4,2}) \gg \Upsilon \succ \begin{matrix}(-0.-3_{3,2})\\(-1.-3_{4,3})\end{matrix}$$

15. Pre-semiotic dual system

$(-3.-3_{2,3,4}\ -2.-3_{2,4}\ -1.-3_{3,4}\ -0.-3_{2,3}) \times (-0.-3_{3,2}\ -1.-3_{4,3}\ -2.-3_{4,2}\ -3.-3_{4,3,2})$

Qualitative action

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-3.-3_{2,3,4})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-3.-3_{4,3,2})\end{matrix}$$

$$(-1.-3_{3,4}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{2,4})\\(-3.-3_{2,3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-3.-3_{4,3,2})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-3.-3_{2,3,4})\\(-0.-3_{2,3})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{4,3})\\(-3.-3_{4,3,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-3.-3_{2,3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-3.-3_{4,3,2})\\(-1.-3_{4,3})\end{matrix}$$

$$(-3.-3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(-1.-3_{3,4})\\(-2.-3_{2,4})\end{matrix} \times (-0.-3_{3,2}) \gg \Upsilon \succ \begin{matrix}(-2.-3_{4,2})\\(-1.-3_{4,3})\end{matrix}$$

$$(-3.-3_{2,3,4}) \gg \gamma \succ \begin{matrix}(-2.-3_{2,4})\\(-0.-3_{2,3})\\(-1.-3_{3,4})\end{matrix} \times (-0.-3_{3,2}) \gg \gamma \succ \begin{matrix}(-1.-3_{4,3})\\(-3.-3_{4,3,2})\\(-2.-3_{4,2})\end{matrix}$$

Medial action

$$(-0.-3_{2,3}) \gg \gamma \succ \begin{matrix}(-3.-3_{2,3,4})\\(-1.-3_{3,4})\\(-2.-3_{2,4})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-2.-3_{4,2})\\(-0.-3_{3,2})\\(-3.-3_{4,3,2})\end{matrix}$$

$$(-0.-3_{2,3}) \gg \gamma \succ \begin{matrix}(-2.-3_{2,4})\\(-1.-3_{3,4})\\(-2.-3_{2,4})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-2.-3_{4,2})\\(-0.-3_{3,2})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \gamma \succ \begin{matrix}(-0.-3_{2,3})\\(-1.-3_{3,4})\\(-2.-3_{2,4})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-2.-3_{4,2})\\(-0.-3_{3,2})\\(-2.-3_{4,2})\end{matrix}$$

$$(-2.-3_{2,4}) \gg \gamma \succ \begin{matrix}(-3.-3_{2,3,4})\\(-1.-3_{3,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-0.-3_{3,2})\\(-2.-3_{4,2})\\(-3.-3_{4,3,2})\end{matrix}$$

$$(-3.-3_{2,3,4}) \gg \gamma \succ \begin{matrix}(-0.-3_{2,3})\\(-1.-3_{3,4})\\(-2.-3_{2,4})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-2.-3_{4,2})\\(-3.-3_{4,3,2})\\(-0.-3_{3,2})\end{matrix}$$

$$(-3.-3_{2,3,4}) \gg \gamma \succ \begin{matrix}(-2.-3_{2,4})\\(-1.-3_{3,4})\\(-0.-3_{2,3})\end{matrix} \times (-1.-3_{4,3}) \gg \gamma \succ \begin{matrix}(-0.-3_{3,2})\\(-2.-3_{4,2})\\(-3.-3_{4,3,2})\end{matrix}$$

Objectal action

$$(-0.-3_{2,3}) \gg \gamma \succ \begin{matrix}(-3.-3_{2,3,4})\\(-2.-3_{2,4})\\(-1.-3_{3,4})\end{matrix} \times (-2.-3_{4,2}) \gg \gamma \succ \begin{matrix}(-1.-3_{4,3})\\(-0.-3_{3,2})\\(-3.-3_{4,3,2})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}3.\text{-}3_{2,3,4})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}3.\text{-}3_{4,3,2})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}3.\text{-}3_{2,3,4})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}3.\text{-}3_{4,3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}3.\text{-}3_{2,3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\\(\text{-}3.\text{-}3_{4,3,2})\end{matrix}$$

$$(\text{-}3.\text{-}3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}3.\text{-}3_{2,3,4})\\(\text{-}0.\text{-}3_{3,2})\end{matrix}$$

$$(\text{-}3.\text{-}3_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} \times (\text{-}2.\text{-}3_{4,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}3.\text{-}3_{4,3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

Interpretative action

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}3.\text{-}3_{2,3,4})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} \times (\text{-}3.\text{-}3_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix}$$

$$(\text{-}0.\text{-}3_{2,3}) \gg \Upsilon \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}3.\text{-}3_{2,3,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \times (\text{-}3.\text{-}3_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \Upsilon \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}3.\text{-}3_{2,3,4})\\(\text{-}2.\text{-}3_{2,4})\end{matrix} \times (\text{-}3.\text{-}3_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(\text{-}2.\text{-}3_{4,2})\\(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix}$$

$$(\text{-}1.\text{-}3_{3,4}) \gg \curlyvee \succ \begin{matrix}(\text{-}2.\text{-}3_{2,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} (\text{-}3.\text{-}3_{2,3,4}) \quad \times \quad (\text{-}3.\text{-}3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}2.\text{-}3_{4,2})\end{matrix} (\text{-}1.\text{-}3_{4,3})$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \curlyvee \succ \begin{matrix}(\text{-}0.\text{-}3_{2,3})\\(\text{-}1.\text{-}3_{3,4})\end{matrix} (\text{-}3.\text{-}3_{2,3,4}) \quad \times \quad (\text{-}3.\text{-}3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(\text{-}1.\text{-}3_{4,3})\\(\text{-}0.\text{-}3_{3,2})\end{matrix} (\text{-}2.\text{-}3_{4,2})$$

$$(\text{-}2.\text{-}3_{2,4}) \gg \curlyvee \succ \begin{matrix}(\text{-}1.\text{-}3_{3,4})\\(\text{-}0.\text{-}3_{2,3})\end{matrix} (\text{-}3.\text{-}3_{2,3,4}) \quad \times \quad (\text{-}3.\text{-}3_{4,3,2}) \gg \curlyvee \succ \begin{matrix}(\text{-}0.\text{-}3_{3,2})\\(\text{-}1.\text{-}3_{4,3})\end{matrix} (\text{-}2.\text{-}3_{4,2})$$

Chapter Seven: The Relational Night

Notation:
0.1 = [0[1]] 1.0 = 1[0]
0.2 = [0[2]] 2.0 = 1[0]
0.3 = [0[2]] 3.0 = 1[0], ans., i.e. n = f(1) instead of $[1_n]$.

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[1]_{1,3,4}\ 0[1]_{1,3}) \times (1[0]_{3,1}\ 1[1]_{4,3,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$(2[1]_{1,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(1[1]_{1,3,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(1[1]_{1,3,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(2[1]_{1,4})$ $(1[1]_{4,3,1})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(3[1]_{3,4})$ $(1[1]_{4,3,1})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[1]_{1,3})$ $\times$ $\curlywedge \gg (1[0]_{3,1})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Medial action

$$(2[1]_{1,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(0[1]_{1,3}) \quad (1[2]_{4,1})$$

$$(3[1]_{3,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(0[1]_{1,3}) \quad (1[3]_{4,3})$$

$$(0[1]_{1,3}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(2[1]_{1,4}) \quad (1[0]_{3,1})$$

$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$

$$(0[1]_{1,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(3[1]_{3,4}) \quad (1[0]_{3,1})$$

$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$

Objectal action

$$(1[1]_{1,3,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[1]_{1,3}) \quad (1[1]_{4,3,1})$$

$$(3[1]_{3,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[1]_{1,3}) \quad (1[3]_{4,3})$$

$$(0[1]_{1,3}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (1[0]_{3,1})$$

$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (1[3]_{4,3})$$

$$(1[1]_{1,3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$

$$(0[1]_{1,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (1[0]_{3,1})$$

Interpretative action

$$(2[1]_{1,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[1]_{1,3}) \quad (1[2]_{4,1})$$

$$(1[1]_{1,3,4}) \quad (1[0]_{3,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[1]_{1,3}) \quad (1[1]_{4,3,1})$$

$$(2[1]_{1,4}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[1]_{1,3,4}) \quad (1[2]_{4,1})$$

$$(0[1]_{1,3}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[1]_{1,3,4}) \quad (1[0]_{3,1})$$

$$(1[1]_{1,3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(2[1]_{1,4}) \quad (1[1]_{4,3,1})$$

$$(0[1]_{1,3}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(2[1]_{1,4}) \quad (1[0]_{3,1})$$

2. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[1]_{1,3,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 1[1]_{4,3,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$(2[1]_{1,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(1[1]_{1,3,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(1[1]_{1,3,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(2[1]_{1,4})$ $(1[1]_{4,3,1})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(1[1]_{4,3,1})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Medial action

$(2[1]_{1,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$
$(0[2]_{1,2})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$
$(0[2]_{1,2})$ $(1[3]_{4,3})$

$$(0[2]_{1,2}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(2[1]_{1,4}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[1]_{1,3,4}) \times \curlywedge \gg (1[1]_{4,3,1})$$
$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$

Objectal action

$$(1[1]_{1,3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[1]_{4,3,1})$$

$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (1[3]_{4,3})$$

$$(1[1]_{1,3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

Interpretative action

$(2[1]_{1,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(0[2]_{1,2})$ $(1[2]_{4,1})$

$(1[1]_{1,3,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (3[1]_{4,3})$
$(0[2]_{1,2})$ $(0[2]_{1,2})$

$(2[1]_{1,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[1]_{1,3,4})$ $(1[2]_{4,1})$

$(0[2]_{1,2})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[1]_{1,3,4})$ $(2[0]_{2,1})$

$(1[1]_{1,3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(1[1]_{4,3,1})$

$(0[2]_{1,2})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(2[0]_{2,1})$

3. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[1]_{1,3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 1[1]_{4,3,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative Action

$(2[1]_{1,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[1]_{1,3,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[1]_{1,3,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[3]_{2,3}) \quad \times \quad \curlywedge \gg (3[0]_{3,2})$
$(2[1]_{1,4})$ $(1[1]_{4,3,1})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[3]_{2,3}) \quad \times \quad \curlywedge \gg (3[0]_{3,2})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(1[1]_{1,3,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \quad \times \quad \curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(1[1]_{4,3,1})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \quad \times \quad \curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Medial action

$(2[1]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(0[3]_{2,3})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(0[3]_{2,3})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$ $(1[2]_{4,1})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(2[1]_{1,4})$ $(3[0]_{3,2})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$ $(1[3]_{4,3})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(3[1]_{3,4})$ $(3[0]_{3,2})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (1[1]_{1,3,4}) \quad \times \quad \curlywedge \gg (1[1]_{4,3,1})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Objectal action

$$(1[1]_{1,3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[3]_{2,3}) \quad (1[1]_{4,3,1})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[1]_{1,3,4}) \quad (1[3]_{4,3})$$

$$(1[1]_{1,3,4}) \quad (1[3]_{3,4})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (1[1]_{4,3,1})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[1]_{1,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[2]_{4,1})$$

$$(1[1]_{1,3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[1]_{4,3,1})$$

$$(2[1]_{1,4}) \quad (1[1]_{4,3,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[1]_{1,3,4}) \quad (1[2]_{4,1})$$

$(0[3]_{2,3})$ $(1[1]_{4,3,1})$
$\curlywedge \gg (3[1]_{3,4})$ $\times$ $\curlywedge \gg (1[3]_{4,3})$
$(1[1]_{1,3,4})$ $(3[0]_{3,2})$

$(1[1]_{1,3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ $\times$ $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(1[1]_{4,3,1})$

$(0[3]_{2,3})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ $\times$ $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(3[0]_{3,2})$

4. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$(2[1]_{1,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(2[1]_{1,4})$ $(2[1]_{4,1})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(2[1]_{4,1})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2})$ $\times$ $\curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Medial action

$$(2[1]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[2]_{4,1})$$

$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[1]_{1,4}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$

Objectal action

$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$

$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[1]_{1,4}) \quad \times \quad \curlywedge \gg (1[2]_{4,1})$$
$$(1[2]_{1,4}) \quad (1[3]_{4,3})$$

$$(1[2]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \quad \times \quad \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[1]_{4,1})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \quad \times \quad \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

Interpretative action

$$(2[1]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(0[2]_{1,2}) \quad (1[2]_{4,1})$$

$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$

$$(2[1]_{1,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(1[2]_{1,4}) \quad (1[2]_{4,1})$$

$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$

$$(1[2]_{1,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(2[1]_{1,4}) \quad (2[1]_{4,1})$$

$$(0[2]_{1,2}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(2[1]_{1,4}) \quad (2[0]_{2,1})$$

5. Pre-Semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualtitative action

$(2[1]_{1,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[2]_{4,1})|$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(2[1]_{1,4})$ $(2[1]_{4,1})$

$(3[1]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(2[1]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(2[1]_{4,1})$

$(2[1]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(1[2]_{4,1})$

Medial action

$(2[1]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$
$\curlywedge \gg (1[2]_{1,4})$
$(2[1]_{1,4})$
$\times$
$(1[2]_{4,1})$
$\curlywedge \gg (2[1]_{4,1})$
$(3[0]_{3,2})$

$(3[1]_{3,4})$
$\curlywedge \gg (1[2]_{1,4})$
$(2[1]_{1,4})$
$\times$
$(1[2]_{4,1})$
$\curlywedge \gg (2[1]_{4,1})$
$(1[3]_{4,3})$

$(0[3]_{2,3})$
$\curlywedge \gg (1[2]_{1,4})$
$(3[1]_{3,4})$
$\times$
$(1[3]_{4,3})$
$\curlywedge \gg (2[1]_{4,1})$
$(3[0]_{3,2})$

$(2[1]_{1,4})$
$\curlywedge \gg (1[2]_{1,4})$
$(3[1]_{3,4})$
$\times$
$(1[3]_{4,3})$
$\curlywedge 2[1]_{4,1})$
$(1[2]_{4,1})$

Objectal action

$(1[2]_{1,4})$
$\curlywedge \gg (2[1]_{1,4})$
$(0[3]_{2,3})$
$\times$
$(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{4,1})$
$(2[1]_{4,1})$

$(3[1]_{3,4})$
$\curlywedge \gg (2[1]_{1,4})$
$(0[3]_{2,3})$
$\times$
$(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{4,1})$
$(1[3]_{4,3})$

$(0[3]_{2,3})$
$\curlywedge \gg (2[1]_{1,4})$
$(1[2]_{1,4})$
$\times$
$(2[1]_{4,1})$
$\curlywedge \gg (1[2]_{4,1})$
$(3[0]_{3,2})$

$(3[1]_{3,4})$
$\curlywedge \gg (2[1]_{1,4})$
$(1[2]_{1,4})$
$\times$
$(2[1]_{4,1})$
$\curlywedge \gg (1[2]_{4,1})$
$(1[3]_{4,3})$

$(1[2]_{1,4})$
$\curlywedge \gg (2[1]_{1,4})$
$(3[1]_{3,4})$
$\times$
$(1[3]_{4,3})$
$\curlywedge \gg (1[2]_{4,1})$
$(2[1]_{4,1})$

$(0[3]_{2,3})$
$\curlywedge \gg (2[1]_{1,4})$
$(3[1]_{3,4})$
$\times$
$(1[3]_{4,3})$
$\curlywedge \gg (1[2]_{4,1})$
$(3[0]_{3,2})$

Interpretative action

$(2[1]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(0[3]_{2,3})$ $(1[2]_{4,1})$

$(1[2]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(0[3]_{2,3})$ $(2[1]_{4,1})$

$(2[1]_{1,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[2]_{1,4})$ $(1[2]_{4,1})$

$(0[3]_{2,3})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[2]_{1,4})$ $(3[0]_{3,2})$

$(1[2]_{1,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(2[1]_{4,1})$

$(0[3]_{2,3})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(3[0]_{3,2})$

6. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$(2[1]_{1,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(1[2]_{4,1})$

$(3[1]_{3,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(1[3]_{4,3})$

$$(1[3]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(2[1]_{1,4}) \quad (3[1]_{4,3})$$

$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$

$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$

$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$

Medial action

$$(2[1]_{1,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[2]_{4,1})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[1]_{1,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

$$(2[1]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[1]_{3,4}) \quad (1[2]_{4,1})$$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$

$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[1]_{1,4}) \times \curlywedge \gg (1[2]_{4,1})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[1]_{1,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[2]_{4,1})$$

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(2[1]_{1,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[3]_{3,4}) \quad (1[2]_{4,1})$$

$(0[3]_{2,3})$ $(3[1]_{4,3})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[3]_{3,4})$ $(3[0]_{3,2})$

$(1[3]_{3,4})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(3[1]_{4,3})$

$(0[3]_{2,3})$ $(1[2]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[1]_{1,4})$ $(3[0]_{3,2})$

7. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(3[1]_{3,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(3[1]_{3,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(2[2]_{1,2,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[2]_{1,2})$ × $\curlywedge \gg (2[0]_{2,1})$
$(3[1]_{3,4})$ $(2[2]_{4,2,1})$

Medial action

$$(2[2]_{1,2,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(0[2]_{1,2}) \quad (2[2]_{4,2,1})$$

$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[2]_{1}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[2]_{1,2,4}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

$$(2[2]_{1,2,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[1]_{3,4}) \quad (2[2]_{4,2,1})$$

Objectal action

$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$

$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$

$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$

$$(3[1]_{3,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \quad \times \quad \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (1[3]_{4,3})$$

$$(1[2]_{1,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \quad \times \quad \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[1]_{3,4}) \quad (2[1]_{4,1})$$

$$(0[2]_{1,2}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \quad \times \quad \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[1]_{3,4}) \quad (2[0]_{2,1})$$

Interpretative action

$$(2[2]_{1,2,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(0[2]_{1,2}) \quad (2[2]_{4,2,1})$$

$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$

$$(2[2]_{1,2,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(1[2]_{1,4}) \quad (2[2]_{4,2,1})$$

$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$

$$(1[2]_{1,4}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(2[2]_{1,2,4}) \quad (2[1]_{4,1})$$

$$(0[2]_{1,2}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (3[1]_{3,4}) \quad \times \quad \curlywedge \gg (1[3]_{4,3})$$
$$(2[2]_{1,2,4}) \quad (2[0]_{2,1})$$

8. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(3[1]_{3,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(3[1]_{3,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{1,2,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(2[2]_{4,2,1})$

Medial action

$(2[2]_{1,2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(2[2]_{4,2,1})$

$(3[1]_{3,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(2[2]_{1,2,4})$ $(3[0]_{3,2})$

$(3[1]_{3,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(2[2]_{1,2,4})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$ $(1[3]_{4,3})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(3[1]_{3,4})$ $(3[0]_{3,2})$

$(2[2]_{1,2,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (1[2]_{1,4})$ $\times$ $\curlywedge \gg (2[1]_{4,1})$
$(3[1]_{3,4})$ $(2[2]_{4,2,1})$

Objectal action

$(1[2]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(0[3]_{2,3})$ $(2[1]_{4,1})$

$(3[1]_{3,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(0[3]_{2,3})$ $(1[3]_{4,3})$

$(0[3]_{2,3})$ $(2[1]_{4,1})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(1[2]_{1,4})$ $(3[0]_{3,2})$

$(3[1]_{3,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(1[2]_{1,4})$ $(1[3]_{4,3})$

$(1[2]_{1,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(3[1]_{3,4})$ $(2[1]_{4,1})$

$(0[3]_{2,3})$ $(1[3]_{4,3})$
$\curlywedge \gg (2[2]_{1,2,4})$ $\times$ $\curlywedge \gg (2[2]_{4,2,1})$
$(3[1]_{3,4})$ $(3[0]_{3,2})$

Interpretative action

$(2[2]_{1,2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(0[3]_{2,3})$ $(2[2]_{4,2,1})$

$(1[2]_{1,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(0[3]_{2,3})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(0[3]_{2,3})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[2]_{1,4})$ $(3[0]_{3,2})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(0[3]_{2,3})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[2]_{1,2,4})$ $(3[0]_{3,2})$

9. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[3]_{4,3}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$(2[2]_{1,2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(2[2]_{4,2,1})$

$(3[1]_{3,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(1[3]_{4,3})$

$(1[3]_{3,4})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $(2[2]_{4,2,1})$
$(2[2]_{1,2,4})$ $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{4,3})$

$(3[1]_{3,4})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $(2[2]_{4,2,1})$
$(2[2]_{1,2,4})$ $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{4,3})$

$(1[3]_{3,4})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $(1[3]_{4,3})$
$(3[1]_{3,4})$ $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{4,3})$

$(2[2]_{1,2,4})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $(1[3]_{4,3})$
$(3[1]_{3,4})$ $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{4,2,1})$

Medial action

$(2[2]_{1,2,4})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(3[0]_{3,2})$
$(0[3]_{2,3})$ $\curlywedge \gg (3[1]_{4,3})$
$(2[2]_{4,2,1})$

$(3[1]_{3,4})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(3[0]_{3,2})$
$(0[3]_{2,3})$ $\curlywedge \gg (3[1]_{4,3})$
$(1[3]_{4,3})$

$(0[3]_{2,3})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(2[2]_{4,2,1})$
$(2[2]_{1,2,4})$ $\curlywedge \gg (3[1]_{4,3})$
$(3[0]_{3,2})$

$(3[1]_{3,4})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(2[2]_{4,2,1})$
$(2[2]_{1,2,4})$ $\curlywedge \gg (3[1]_{4,3})$
$(1[3]_{4,3})$

$(0[3]_{2,3})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(1[3]_{4,3})$
$(3[1]_{3,4})$ $\curlywedge \gg (3[1]_{4,3})$
$(3[0]_{3,2})$

$(2[2]_{1,2,4})$
$\curlywedge \gg (1[3]_{3,4})$ $\times$ $(1[3]_{4,3})$
$(3[1]_{3,4})$ $\curlywedge \gg (3[1]_{4,3})$
$(2[2]_{4,2,1})$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$

$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(2[2]_{1,2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[3]_{3,4}) \quad (2[2]_{4,2,1})$$

$(0[3]_{2,3})$ $(3[1]_{4,3})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(1[3]_{3,4})$ $(3[0]_{3,2})$

$(1[3]_{3,4})$ $(2[2]_{1,2,4})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (3[1]_{4,3})$
$(2[2]_{4,2,1})$ $(0[3]_{2,3})$

$(0[3]_{2,3})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[1]_{3,4})$ × $\curlywedge \gg (1[3]_{4,3})$
$(2[2]_{1,2,4})$ $(3[0]_{3,2})$

10. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 1[3]_{4,3})$

Qualitative action

$(2[3]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(3[2]_{4,2})$

$(3[1]_{3,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(1[3]_{4,3})$

$(1[3]_{3,4})$ $(3[2]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(2[3]_{2,4})$ $(3[1]_{4,3})$

$(3[1]_{3,4})$ $(3[2]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(2[3]_{2,4})$ $(1[3]_{4,3})$

$(1[3]_{3,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(3[1]_{4,3})$

$(2[3]_{2,4})$ $(1[3]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(3[1]_{3,4})$ $(3[2]_{4,2})$

Medial action

$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

$$(2[3]_{2,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[1]_{3,4}) \quad (3[2]_{4,2})$$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$

$$(1[3]_{3,4}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[1]_{3,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (1[3]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[1]_{3,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(2[3]_{2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[3]_{3,4}) \quad (3[2]_{4,2})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(1[3]_{3,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (3[1]_{3,4}) \times \curlywedge \gg (1[3]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$

11. Pre-semiotic dual system
$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(3[2]_{2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(1[2]_{1,4})$ $(2[3]_{4,2})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(3[2]_{2,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(2[2]_{1,2,4})$ $(2[3]_{4,2})$

$(1[2]_{1,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(3[2]_{2,4})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[2]_{1,2}) \times \curlywedge \gg (2[0]_{2,1})$
$(3[2]_{2,4})$ $(2[2]_{4,2,1})$

Medial action

$(3[2]_{2,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$
$(0[2]_{1,2})$ $(2[3]_{4,2})$

$(3[2]_{2,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$
$(0[2]_{1,2})$ $(2[3]_{4,2})$

$$(0[2]_{1,2}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[2]_{1,2,4}) \quad (2[0]_{2,1})$$

$$(3[2]_{2,4}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(2[2]_{1,2,4}) \quad (2[3]_{4,2})$$

$$(0[2]_{1,2}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[2]_{2,4}) \quad (2[0]_{2,1})$$

$$(2[2]_{1,2,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[2]_{1,4}) \times \curlywedge \gg (2[1]_{4,1})$$
$$(3[2]_{2,4}) \quad (2[2]_{4,2,1})$$

Objectal action

$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$

$$(3[2]_{2,4}) \quad (2[0]_{2,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[2]_{1,2}) \quad (2[3]_{4,2})$$

$$(0[2]_{1,2}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (2[0]_{2,1})$$

$$(3[2]_{2,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (2[3]_{4,2})$$

$$(1[2]_{1,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (2[1]_{4,1})$$

$$(0[2]_{1,2}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (2[0]_{2,1})$$

Interpretative action

$(2[2]_{1,2,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(0[2]_{1,2})$ $(2[2]_{4,2,1})$

$(1[2]_{1,4})$ $(2[0]_{2,1})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(0[2]_{1,2})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(0[2]_{1,2})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(1[2]_{1,4})$ $(2[0]_{2,1})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(0[2]_{1,2})$ $(2[2]_{1,2,4})$
$\curlywedge \gg (3[2]_{2,4})$ × $\curlywedge \gg (2[3]_{4,2})$
$(2[2]_{1,2,4})$ $(2[0]_{2,1})$

12. Pre-semiotic dual system
$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$(2[2]_{1,2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(2[2]_{4,2,1})$

$(3[2]_{2,4})$ $(2[1]_{4,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(1[2]_{1,4})$ $(2[3]_{4,2})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(3[2]_{2,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(2[3]_{2,4})$ $(2[2]_{1,2,4})$

$(1[2]_{1,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(2[1]_{4,1})$

$(2[2]_{1,2,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ × $\curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(2[2]_{4,2,1})$

Medial action

$(2[2]_{1,2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(2[2]_{4,2,1})$

$(3[2]_{2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(0[3]_{2,3})$ $(2[3]_{4,2})$

$(0[3]_{2,3})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(2[2]_{1,2,4})$ $(3[0]_{3,2})$

$(3[2]_{2,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(2[2]_{1,2,4})$ $(2[3]_{4,2})$

$(0[3]_{2,3})$ $(2[3]_{4,2})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(3[2]_{2,4})$ $(3[0]_{3,2})$

$(2[2]_{1,2,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (1[2]_{1,4})$ × $\curlywedge \gg (2[1]_{4,1})$
$(3[2]_{2,4})$ $(2[2]_{4,2,1})$

Objectal action

$$(1[2]_{1,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (2[1]_{4,1})$$

$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (3[0]_{3,2})$$

$$(3[2]_{2,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[2]_{1,4}) \quad (2[3]_{4,2})$$

$$(1[2]_{1,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (2[1]_{4,1})$$

$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$

$$(1[2]_{1,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(0[3]_{2,3}) \quad (2[1]_{4,1})$$

$$(2[2]_{1,2,4}) \quad (2[1]_{4,1})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(1[2]_{1,4}) \quad (2[2]_{4,2,1})$$

$(0[3]_{2,3})$ $(2[1]_{4,1})$
$\curlywedge \gg (3[2]_{2,4})$ $\times$ $\curlywedge \gg (2[3]_{4,2})$
$(1[2]_{1,4})$ $(3[0]_{3,2})$

$(1[2]_{1,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[2]_{2,4})$ $\times$ $\curlywedge \gg (2[3]_{4,2})$
$(2[2]_{1,2,4})$ $(2[1]_{4,1})$

$(0[3]_{2,3})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (3[2]_{2,4})$ $\times$ $\curlywedge \gg (2[3]_{4,2})$
$(2[2]_{1,2,4})$ $(3[0]_{3,2})$

13. Pre-semiotic dual system
$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$(2[2]_{1,2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(2[2]_{4,2,1})$

$(3[2]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(2[3]_{4,2})$

$(1[3]_{3,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{1,2,4})$ $(3[1]_{4,3})$

$(3[2]_{2,4})$ $(2[2]_{4,2,1})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(2[2]_{1,2,4})$ $(2[3]_{4,2})$

$(1[3]_{3,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(3[1]_{4,3})$

$(2[2]_{1,2,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3})$ $\times$ $\curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(2[2]_{4,2,1})$

Medial action

$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$

$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$

$$(3[2]_{2,4}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[2]_{1,2,4}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$

$$(2[2]_{1,2,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[2]_{2,4}) \quad (2[2]_{4,2,1})$$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[2]_{2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(1[3]_{3,4}) \quad (2[3]_{4,2})$$

$$(1[3]_{3,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[2]_{1,2,4}) \times \curlywedge \gg (2[2]_{4,2,1})$$
$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(2[2]_{1,2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(1[3]_{3,4}) \quad (2[2]_{4,2,1})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(1[3]_{3,4}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(2[2]_{1,2,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (2[2]_{4,2,1})$$
$$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$$
$$(2[2]_{1,2,4}) \quad (3[0]_{3,2})$$

14. Pre-semiotic dual system
$(3[2]_{2,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 2[3]_{4,2})$

Qualitative action

$(2[3]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(3[2]_{4,2})$

$(3[2]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(2[3]_{4,2})$

$(1[3]_{3,4})$ $(3[2]_{4,2})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(2[3]_{2,4})$ $(3[1]_{4,3})$

$(3[2]_{2,4})$ $(3[2]_{4,2})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(2[3]_{2,4})$ $(2[3]_{4,2})$

$(1[3]_{3,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(3[1]_{4,3})$

$(2[3]_{2,4})$ $(2[3]_{4,2})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(3[2]_{2,4})$ $(3[2]_{4,2})$

Medial action

$(2[3]_{2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$
$(0[3]_{2,3})$ $(3[2]_{4,2})$

$(3[2]_{2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$
$(0[3]_{2,3})$ $(2[3]_{4,2})$

$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$

$$(3[2]_{2,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$

$$(2[3]_{2,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[2]_{2,4}) \quad (3[2]_{4,2})$$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[2]_{2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (2[3]_{4,2})$$

$$(1[3]_{3,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[2]_{2,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[2]_{2,4}) \quad (3[0]_{3,2})$$

Interpretative action

$(2[3]_{2,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(0[3]_{2,3})$ $(3[2]_{4,2})$

$(1[3]_{3,4})$ $(3[0]_{3,2})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(0[3]_{2,3})$ $(3[1]_{4,3})$

$(2[3]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(1[3]_{3,4})$ $(3[2]_{4,2})$

$(0[3]_{2,3})$ $(3[1]_{4,3})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(1[3]_{3,4})$ $(3[0]_{3,2})$

$(1[3]_{3,4})$ $(3[2]_{4,2})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(2[3]_{2,4})$ $(3[1]_{4,3})$

$(0[3]_{2,3})$ $(3[2]_{4,2})$
$\curlywedge \gg (3[2]_{2,4}) \times \curlywedge \gg (2[3]_{4,2})$
$(2[3]_{2,4})$ $(3[0]_{3,2})$

15. Pre-semiotic dual system
$(3[3]_{2,3,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 3[3]_{4,3,2})$

Qualitative action

$(2[3]_{2,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(3[2]_{4,2})$

$(3[3]_{2,3,4})$ $(3[1]_{4,3})$
$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$
$(1[3]_{3,4})$ $(3[3]_{4,3,2})$

$$(1[3]_{3,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(2[3]_{2,4}) \quad (3[1]_{4,3})$$

$$(3[2]_{2,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(2[3]_{2,4}) \quad (2[3]_{4,2})$$

$$(1[3]_{3,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(3[2]_{2,4}) \quad (3[1]_{4,3})$$

$$(2[3]_{2,4}) \quad (2[3]_{4,2})$$
$$\curlywedge \gg (0[3]_{2,3}) \times \curlywedge \gg (3[0]_{3,2})$$
$$(3[2]_{2,4}) \quad (3[2]_{4,2})$$

Medial action

$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$

$$(3[3]_{2,3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(0[3]_{2,3}) \quad (3[3]_{4,3,2})$$

$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$

$$(3[3]_{2,3,4}) \quad (3[2]_{4,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(2[3]_{2,4}) \quad (3[3]_{4,3,2})$$

$$(0[3]_{2,3}) \quad (3[3]_{4,3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[3]_{2,3,4}) \quad (3[0]_{3,2})$$

$$(2[3]_{2,4}) \quad (3[3]_{4,3,2})$$
$$\curlywedge \gg (1[3]_{3,4}) \times \curlywedge \gg (3[1]_{4,3})$$
$$(3[3]_{2,3,4}) \quad (3[2]_{4,2})$$

Objectal action

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(3[3]_{2,3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(0[3]_{2,3}) \quad (3[3]_{4,3,2})$$

$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$

$$(3[3]_{2,3,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(1[3]_{3,4}) \quad (3[3]_{4,3,2})$$

$$(1[3]_{3,4}) \quad (3[3]_{4,3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[3]_{2,3,4}) \quad (3[1]_{4,3})$$

$$(0[3]_{2,3}) \quad (3[3]_{4,3,2})$$
$$\curlywedge \gg (2[3]_{2,4}) \times \curlywedge \gg (3[2]_{4,2})$$
$$(3[3]_{2,3,4}) \quad (3[0]_{3,2})$$

Interpretative action

$$(2[3]_{2,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[3]_{2,3,4}) \times \curlywedge \gg (3[3]_{4,3,2})$$
$$(0[3]_{2,3}) \quad (3[2]_{4,2})$$

$$(1[3]_{3,4}) \quad (3[0]_{3,2})$$
$$\curlywedge \gg (3[3]_{2,3,4}) \times \curlywedge \gg (3[3]_{4,3,2})$$
$$(0[3]_{2,3}) \quad (3[1]_{4,3})$$

$$(2[3]_{2,4}) \quad (3[1]_{4,3})$$
$$\curlywedge \gg (3[3]_{2,3,4}) \times \curlywedge \gg (3[3]_{4,3,2})$$
$$(1[3]_{3,4}) \quad (3[2]_{4,2})$$

$$\begin{matrix}(0[3]_{2,3}) \\ \curlywedge \gg (3[3]_{2,3,4}) \\ (1[3]_{3,4})\end{matrix} \times \begin{matrix}(3[1]_{4,3}) \\ \curlywedge \gg (3[3]_{4,3,2}) \\ (3[0]_{3,2})\end{matrix}$$

$$\begin{matrix}(1[3]_{3,4}) \\ \curlywedge \gg (3[3]_{2,3,4}) \\ (2[3]_{2,4})\end{matrix} \times \begin{matrix}(3[2]_{4,2}) \\ \curlywedge \gg (3[3]_{4,3,2}) \\ (3[1]_{4,3})\end{matrix}$$

$$\begin{matrix}(0[3]_{2,3}) \\ \curlywedge \gg (3[3]_{2,3,4}) \\ (2[3]_{2,4})\end{matrix} \times \begin{matrix}(3[2]_{4,2}) \\ \curlywedge \gg (3[3]_{4,3,2}) \\ (3[0]_{3,2})\end{matrix}$$

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(3[1] 2[1] 1[1] 0[1]) × (1[0] 1[1] 1[2] 1[3])

Qualitative action

$$\begin{matrix}(1[1]_{1,3,4}) \gg \curlyvee \succ (0[1]_{1,3}) \\ \end{matrix} \begin{matrix}(3[1]_{3,4}) \\ (2[1]_{1,4})\end{matrix} \times \begin{matrix}(1[0]_{3,1}) \gg \curlyvee \succ (1[1]_{4,3,1}) \\ \end{matrix} \begin{matrix}(1[2]_{4,1}) \\ (1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,4,3}) \gg \curlyvee \succ (0[1]_{1,3}) \\ \end{matrix} \begin{matrix}(2[1]_{1,4}) \\ (3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[0]_{3,1}) \gg \curlyvee \succ (1[1]_{4,3,1}) \\ \end{matrix} \begin{matrix}(1[3]_{4,3}) \\ (1[2]_{4,1})\end{matrix}$$

$$\begin{matrix}(2[1]_{1,4}) \gg \curlyvee \succ (0[1]_{1,3}) \\ \end{matrix} \begin{matrix}(3[1]_{3,4}) \\ (1[1]_{1,3,4})\end{matrix} \times \begin{matrix}(1[0]_{3,1}) \gg \curlyvee \succ (1[2]_{4,1}) \\ \end{matrix} \begin{matrix}(1[1]_{4,3,1}) \\ (1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(2[1]_{1,4}) \gg \curlyvee \succ (0[1]_{1,3}) \\ \end{matrix} \begin{matrix}(1[1]_{1,3,4}) \\ (3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[0]_{3,1}) \gg \curlyvee \succ (1[2]_{4,1}) \\ \end{matrix} \begin{matrix}(1[3]_{4,3}) \\ (1[1]_{4,3,1})\end{matrix}$$

$$\begin{matrix}(3[1]_{3,4}) \gg \curlyvee \succ (0[1]_{1,3}) \\ \end{matrix} \begin{matrix}(1[1]_{1,3,4}) \\ (2[1]_{1,4})\end{matrix} \times \begin{matrix}(1[0]_{3,1}) \gg \curlyvee \succ (1[3]_{4,3}) \\ \end{matrix} \begin{matrix}(1[2]_{4,1}) \\ (1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(0[1]_{1,3})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[0]_{3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

Medial action

$$(0[1]_{1,3}) \gg^{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(1[0]_{3,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[1]_{1,3}) \gg^{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[3]_{4,3})\\(1[0]_{3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg^{\Upsilon} \succ \begin{matrix}(0[1]_{1,3})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(1[0]_{3,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg^{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[0]_{3,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(0[1]_{1,3})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(1[0]_{3,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg^{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[0]_{3,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Objectal action

$$(0[1]_{1,3}) \gg^{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg^{\Upsilon} \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(1[0]_{3,1})\end{matrix}$$

$$(0[1]_{1,3}) \gg^{\Upsilon} \succ \begin{matrix}(1[1]_{1,3,4})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg^{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(1[0]_{3,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(0[1]_{1,3})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(1[1]_{4,3,1})\\(1[0]_{3,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[0]_{3,1})\\(1[1]_{4,3,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[1]_{1,3})\\(2[1]_{1,4})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(1[0]_{3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[1]_{1,3,4})\\(2[1]_{1,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[0]_{3,1})\\(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

Interpretative action

$$(0[1]_{1,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[1]_{4,3,1})\\(1[0]_{3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(0[1]_{1,3}) \gg \Upsilon \succ \begin{matrix}(1[1]_{1,3,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(1[0]_{3,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(0[1]_{1,3})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(1[0]_{3,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[0]_{3,1})\\(1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[1]_{1,3})\\(3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \quad \Upsilon \quad \succ \begin{matrix}(1[1]_{4,3,1})\\(1[0]_{3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(1[1]_{1,3,4})\\(3[1]_{3,4})\\(0[1]_{1,3})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[0]_{3,1})\\(1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

2. Pre-semiotic dual system
$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[1]_{1,3,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 1[1]_{4,3,1}\ 1[2]_{1,4}\ 1[3]_{4,3})$

Qualitative action

$$(1[1]_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[2]_{1,2})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[1]_{4,3,1})\\(1[3]_{4,3})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(0[2]_{1,2})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[2]_{1,2})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(0[2]_{1,2})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(0[2]_{1,2})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(0[2]_{1,2})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Medial action

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(2[0]_{2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(0[2]_{1,2})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(2[0]_{2,1})\\(1[2]_{1,4})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[2]_{1,2})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Objectal action

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[1]_{4,3,1})\\(2[0]_{2,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(0[2]_{1,2})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[2]_{1,2})\\(2[1]_{1,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[2]_{1,2})\\(2[1]_{1,4})\\(1[1]_{1,3,4})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(2[1]_{1,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (1[2]_{4,1}) \gg \curlyvee \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(2[1]_{1,4})\\(0[2]_{1,2}) \gg \curlyvee \succ (3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix} \times \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (2[0]_{2,1})\\(1[2]_{4,1})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,3,4})\\(0[2]_{1,2}) \gg \curlyvee \succ (3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (2[0]_{2,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$\begin{matrix}(0[2]_{1,2})\\(1[1]_{1,3,4}) \gg \curlyvee \succ (3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (1[1]_{4,3,1})\\(2[0]_{2,1})\end{matrix}$$

$$\begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4}) \gg \curlyvee \succ (3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

$$\begin{matrix}(0[2]_{1,2})\\(2[1]_{1,4}) \gg \curlyvee \succ (3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix} \times \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (1[2]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,3,4})\\(2[1]_{1,4}) \gg \curlyvee \succ (3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3}) \gg \curlyvee \succ (1[2]_{4,1})\\(1[1]_{4,3,1})\end{matrix}$$

3. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[1]_{1,3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 1[1]_{4,3,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$$\begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4}) \gg \curlyvee \succ (0[3]_{2,3})\\(2[1]_{1,4})\end{matrix} \times \begin{matrix}(1[2]_{4,1})\\(3[0]_{3,2}) \gg \curlyvee \succ (1[1]_{4,3,1})\\(1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4}) \gg \curlyvee \succ (0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2}) \quad \curlyvee \quad \succ \quad (1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(1[1]_{1,3,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(1[1]_{1,3,4})\\(0[3]_{2,3})\\(2[1]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(0[3]_{2,3})\\(1[1]_{1,3,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(1[1]_{1,3,4})\\(3[1]_{3,4})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\\(0[3]_{2,3})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(1[1]_{1,3,4})\\(2[1]_{1,4})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(1[1]_{1,3,4})\\(0[3]_{2,3})\end{matrix} \times (1[1]_{4,3,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\ \gg\Upsilon\succ(2[1]_{1,4})\\(1[1]_{1,3,4})\end{matrix}\times\begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\ \gg\Upsilon\succ(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,3,4})\\(0[3]_{2,3})\ \gg\Upsilon\succ(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix}\times\begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\ \gg\Upsilon\succ(3[0]_{3,2})\\(1[1]_{4,3,1})\end{matrix}$$

$$\begin{matrix}(0[3]_{2,3})\\(1[1]_{1,3,4})\gg\Upsilon\succ(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix}\times\begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\ \gg\Upsilon\succ(1[1]_{4,3,1})\\(3[0]_{3,2})\end{matrix}$$

$$\begin{matrix}(3[1]_{3,4})\\(1[1]_{1,3,4})\gg\Upsilon\succ(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix}\times\begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\ \gg\Upsilon\succ(1[1]_{4,3,1})\\(1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\ \gg\Upsilon\succ(2[1]_{1,4})\\(1[1]_{1,3,4})\end{matrix}\times\begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\ \gg\Upsilon\succ(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,3,4})\\(3[1]_{3,4})\ \gg\Upsilon\succ(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix}\times\begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\ \gg\Upsilon\succ(1[3]_{4,3})\\(1[1]_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(2[1]_{1,4})\\(0[3]_{2,3})\ \gg\Upsilon\succ(3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix}\times\begin{matrix}(1[1]_{4,3,1})\\(1[3]_{4,3})\ \gg\Upsilon\succ(3[0]_{3,2})\\(1[2]_{4,1})\end{matrix}$$

$$\begin{matrix}(1[1]_{1,3,4})\\(0[3]_{2,3})\ \gg\Upsilon\succ(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix}\times\begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\ \gg\Upsilon\succ(3[0]_{3,2})\\(1[1]_{4,3,1})\end{matrix}$$

$$\begin{matrix}(0[3]_{2,3})\\(1[1]_{1,3,4})\gg\Upsilon\succ(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix}\times\begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\ \gg\Upsilon\succ(1[1]_{4,3,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[1]_{1,3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[1]_{4,3,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[1]_{1,3,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[1]_{4,3,1})\\(1[2]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(1[1]_{1,3,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\\(1[1]_{4,3,1})\end{matrix}$$

4. Pre-semiotic system

$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[1]_{4,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(2[1]_{4,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(1[2]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

Medial action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(2[0]_{2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Objectal action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[1]_{1,4})\\(1[2]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[1]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(2[1]_{4,1})\end{matrix}$$

Interpretative action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(1[2]_{4,1})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(2[1]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

5. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 1[2]_{4,1}\ 1[3]_{3,4})$

Qualitative action

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(2[1]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(1[2]_{4,1})\\(1[3]_{3,4})\end{matrix}$$

$$(2[1]_{1,4}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(2[1]_{4,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(0[3]_{2,3})\\(2[1]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(2[1]_{4,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[2]_{4,1})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(2[1]_{1,4})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(1[2]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\\(1[3]_{4})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(1[2]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(2[1]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[1]_{1,4})\\(1[2]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[2]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[2]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg_{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(2[1]_{4,1})\\(3[0]_{3,2})\\(1[2]_{4,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg_{\Upsilon} \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg_{\Upsilon} \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg_{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(2[1]_{4,1})\\(1[2]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(1[2]_{4,1})\end{matrix}$$

6. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[1]_{1,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 1[2]_{4,1}\ 1[3]_{4,3})$

Qualitative action

$$(1[3]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(2[1]_{1,4})\end{matrix} \times (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(1[2]_{4,1})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(2[1]_{1,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \begin{matrix}(3[1]_{3,4})\\ \succ\\ (1[3]_{3,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(3[1]_{4,3})\\ \succ\\ (1[3]_{4,3})\end{matrix} (1[2]_{4,1})$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \begin{matrix}(1[3]_{3,4})\\ \succ\\ (3[1]_{3,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(1[3]_{4,3})\\ \succ\\ (3[1]_{4,3})\end{matrix} (1[2]_{4,1})$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \begin{matrix}(1[3]_{3,4})\\ \succ\\ (2[1]_{1,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(1[2]_{4,1})\\ \succ\\ (3[1]_{4,3})\end{matrix} (1[3]_{4,3})$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \begin{matrix}(2[1]_{1,4})\\ \succ\\ (1[3]_{3,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(3[1]_{4,3})\\ \succ\\ (1[2]_{4,1})\end{matrix} (1[3]_{4,3})$$

Medial action

$$(0[3]_{2,3}) \gg_{\Upsilon} \begin{matrix}(3[1]_{3,4})\\ \succ\\ (2[1]_{1,4})\end{matrix} (1[3]_{3,4}) \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(1[2]_{4,1})\\ \succ\\ (1[3]_{4,3})\end{matrix} (3[0]_{3,2})$$

$$(0[3]_{2,3}) \gg_{\Upsilon} \begin{matrix}(2[1]_{1,4})\\ \succ\\ (3[1]_{3,4})\end{matrix} (1[3]_{3,4}) \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(1[3]_{4,3})\\ \succ\\ (1[2]_{4,1})\end{matrix} (3[0]_{3,2})$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \begin{matrix}(0[3]_{2,3})\\ \succ\\ (3[1]_{3,4})\end{matrix} (1[3]_{3,4}) \times (3[1]_{3,4}) \gg_{\Upsilon} \begin{matrix}(1[3]_{4,3})\\ \succ\\ (1[2]_{4,1})\end{matrix} (3[0]_{3,2})$$

$$(2[1]_{1,4}) \gg_{\Upsilon} \begin{matrix}(3[1]_{3,4})\\ \succ\\ (0[3]_{2,3})\end{matrix} (1[3]_{3,4}) \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ\\ (1[3]_{4,3})\end{matrix} (1[2]_{4,1})$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \begin{matrix}(0[3]_{2,3})\\ \succ\\ (2[1]_{1,4})\end{matrix} (1[3]_{3,4}) \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(1[2]_{4,1})\\ \succ\\ (1[3]_{4,3})\end{matrix} (3[0]_{3,2})$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \begin{matrix}(2[1]_{1,4})\\ \succ\\ (0[3]_{2,3})\end{matrix} (1[3]_{3,4}) \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ\\ (1[2]_{4,1})\end{matrix} (1[3]_{4,3})$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(1[3]_{3,4})\end{matrix} \times (1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[1]_{1,4})\\(3[1]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[1]_{1,4})\\(1[3]_{3,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[1]_{1,4})\\(0[3]_{2,3})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \times (1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(3[0]_{3,2})\\(1[2]_{4,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{4,1})\\(3[0]_{3,2})\\(3[1]_{3,4})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[1]_{1,4})\end{matrix} \times (1[2]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[1]_{1,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[2]_{1,4})\end{matrix}$$

$$(2[1]_{1,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[2]_{4,1})\end{matrix}$$

7. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(1[3]_{4,3})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \times (2[0]_{2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

Medial action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[0]_{2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

Objectal action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(2[1]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(2[0]_{2,1})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(1[3]_{4,3})\\(2[1]_{4,1})\end{matrix}$$

Interpretative action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[1]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(2[0]_{2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

8. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$$\begin{matrix}(3[1]_{3,4})\\ (1[2]_{1,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (2[2]_{1,2,4})\end{matrix} \times \begin{matrix}(2[2]_{4,2,1})\\ (3[0]_{3,2}) \gg \curlyvee \succ (2[1]_{4,1})\\ (1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(2[2]_{1,2,4})\\ (1[2]_{1,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[3]_{4,3})\\ (3[0]_{3,2}) \gg \curlyvee \succ (2[1]_{4,1})\\ (2[2]_{4,2,1})\end{matrix}$$

$$\begin{matrix}(3[1]_{3,4})\\ (2[2]_{1,2,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (1[2]_{1,4})\end{matrix} \times \begin{matrix}(2[1]_{4,1})\\ (3[0]_{3,2}) \gg \curlyvee \succ (2[2]_{4,2,1})\\ (1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(1[2]_{1,4})\\ (2[2]_{1,2,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[3]_{4,3})\\ (3[0]_{3,2}) \gg \curlyvee \succ (2[2]_{4,2,1})\\ (2[1]_{4,1})\end{matrix}$$

$$\begin{matrix}(1[2]_{1,4})\\ (3[1]_{3,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (2[2]_{1,2,4})\end{matrix} \times \begin{matrix}(2[2]_{4,2,1})\\ (3[0]_{3,2}) \gg \curlyvee \succ (1[3]_{4,3})\\ (2[1]_{4,1})\end{matrix}$$

$$\begin{matrix}(2[2]_{1,2,4})\\ (3[1]_{3,4}) \gg \curlyvee \succ (0[3]_{2,3})\\ (1[2]_{1,4})\end{matrix} \times \begin{matrix}(2[1]_{4,1})\\ (3[0]_{3,2}) \gg \curlyvee \succ (1[3]_{4,3})\\ (2[2]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}(3[1]_{3,4})\\ (0[3]_{2,3}) \gg \curlyvee \succ (1[2]_{1,4})\\ (2[2]_{1,2,4})\end{matrix} \times \begin{matrix}(2[2]_{4,2,1})\\ (2[1]_{4,1}) \gg \curlyvee \succ (3[0]_{3,2})\\ (1[3]_{4,3})\end{matrix}$$

$$\begin{matrix}(2[2]_{1,2,4})\\ (0[3]_{2,3}) \gg \curlyvee \succ (1[2]_{1,4})\\ (3[1]_{3,4})\end{matrix} \times \begin{matrix}(1[3]_{4,3})\\ (2[1]_{4,1}) \gg \curlyvee \succ (3[0]_{3,2})\\ (2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(1[2]_{1,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(1[2]_{1,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(1[2]_{1,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(2[2]_{4,2,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(1[3]_{4,3})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(1[3]_{4,3})\\(2[1]_{4,1})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[2]_{1,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(2[2]_{4,2,1})\end{matrix}$$

9. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[2]_{1,2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 2[2]_{4,2,1}\ 1[3]_{4,3})$

Qualitative action

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(2[2]_{1,2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[1]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{4,3})\\(2[2]_{4,2,1})\\(3[1]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{4,2,1})\\(1[3]_{4,3})\\(3[1]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{4,3})\\(1[3]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{1,2,4})\\(1[3]_{3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(1[3]_{4,3})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{4,2,1})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg_{\Upsilon} \succ \begin{matrix}(2[2]_{1,2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (3[1]_{4,3}) \gg_{\Upsilon} \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

Objective action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(3[1]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(3[1]_{4,3})\end{matrix}$$

10. Pre-semiotic dual system

$(3[1]_{3,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 1[3]_{4,3})$

Qualitative action

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(1[3]_{4,3})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[2]_{4,2})\\(1[3]_{4,3})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[2]_{4,2,1})\\(1[3]_{4,3})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(1[3]_{3,4})\\(3[1]_{3,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(3[1]_{3,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[2]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[2]_{4,2})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

:

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[2]_{4,2})\\(1[3]_{4,3})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(1[3]_{4,3})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(1[3]_{4,3})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[1]_{3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(1[3]_{4,3})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[3]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(1[3]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(3[1]_{3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(1[3]_{3,4})\\(3[1]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(3[2]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[1]_{3,4})\\(1[3]_{3,4})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(1[3]_{4,3})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[1]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (1[3]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(3[2]_{4,2})\end{matrix}$$

11. Pre-semiotic dual system

$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[2]_{1,2}) \times (2[0]_{2,1}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(3[2]_{2,4})\\(0[2]_{1,2})\\(2[2]_{1,2,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[2]_{4,2,1})\\(2[1]_{4,1})\\(2[3]_{4,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \curlyvee \succ \begin{matrix}(2[2]_{1,2,4})\\(0[2]_{1,2})\\(3[2]_{2,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[3]_{4,2})\\(2[1]_{4,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(3[2]_{2,4})\\(0[2]_{1,2})\\(1[2]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(0[2]_{1,2})\\(3[2]_{2,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \curlyvee \succ \begin{matrix}(1[2]_{1,4})\\(0[2]_{1,2})\\(2[2]_{1,2,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(2[1]_{4,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \curlyvee \succ \begin{matrix}(2[2]_{1,2,4})\\(0[2]_{1,2})\\(1[2]_{1,4})\end{matrix} \times (2[0]_{2,1}) \gg \curlyvee \succ \begin{matrix}(2[1]_{4,1})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

Medial action

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(3[2]_{2,4})\\(1[2]_{1,4})\\(2[2]_{1,2,4})\end{matrix} \times (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(2[2]_{4,2,1})\\(2[0]_{2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(0[2]_{1,2}) \gg \curlyvee \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(3[2]_{2,4})\end{matrix} \times (2[1]_{4,1}) \gg \curlyvee \succ \begin{matrix}(2[3]_{4,2})\\(2[0]_{2,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(2[0]_{2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[2]_{4,2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(1[2]_{1,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(2[0]_{2,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[2]_{1,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

Objectal action

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(0[2]_{1,2}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[0]_{2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[1]_{4,1})\\(2[0]_{2,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[1]_{4,1})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[2]_{1,2})\\(2[2]_{1,2,4})\\(1[2]_{1,2,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[0]_{2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(0[2]_{1,2})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[0]_{2,1})\\(2[3]_{4,2})\\(2[1]_{4,1})\end{matrix}$$

Interpretative action

$$(0[2]_{1,2}) \gg_{\Upsilon} \begin{matrix}(2[2]_{1,2,4})\\ \succ\\ (1[2]_{1,4})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[1]_{4,1})\\ \succ\\ (2[2]_{4,2,1})\end{matrix} (2[0]_{2,1})$$

$$(0[2]_{1,2}) \gg_{\Upsilon} \begin{matrix}(1[2]_{1,4})\\ \succ\\ (2[2]_{1,2,4})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[2]_{4,2,1})\\ \succ\\ (2[1]_{4,1})\end{matrix} (2[0]_{2,1})$$

$$(1[2]_{1,4}) \gg_{\Upsilon} \begin{matrix}(0[2]_{1,2})\\ \succ\\ (2[2]_{1,2,4})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[2]_{4,2,1})\\ \succ\\ (2[0]_{2,1})\end{matrix} (2[1]_{4,1})$$

$$(1[2]_{1,4}) \gg_{\Upsilon} \begin{matrix}(2[2]_{1,2,4})\\ \succ\\ (0[2]_{1,2})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[0]_{2,1})\\ \succ\\ (2[2]_{4,2,1})\end{matrix} (2[1]_{4,1})$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \begin{matrix}(0[2]_{1,2})\\ \succ\\ (1[2]_{1,4})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[1]_{4,1})\\ \succ\\ (2[0]_{2,1})\end{matrix} (2[2]_{4,2,1})$$

$$(2[2]_{1,2,4}) \gg_{\Upsilon} \begin{matrix}(1[2]_{1,4})\\ \succ\\ (0[2]_{1,2})\end{matrix} (3[2]_{2,4}) \times (2[3]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[0]_{2,1})\\ \succ\\ (2[1]_{4,1})\end{matrix} (2[2]_{4,2,1})$$

12. Pre-semiotic dual system

$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[2]_{1,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 2[1]_{4,1}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$$(1[2]_{1,4}) \gg_{\Upsilon} \begin{matrix}(3[2]_{2,4})\\ \succ\\ (2[2]_{1,2,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(2[2]_{4,2,1})\\ \succ\\ (2[3]_{4,2})\end{matrix} (2[1]_{4,1})$$

$$(1[2]_{1,4}) \gg_{\Upsilon} \begin{matrix}(2[2]_{1,2,4})\\ \succ\\ (3[2]_{2,4})\end{matrix} (0[3]_{2,3}) \times (3[0]_{3,2}) \gg_{\Upsilon} \begin{matrix}(2[3]_{4,2})\\ \succ\\ (2[2]_{4,2,1})\end{matrix} (2[1]_{4,1})$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(0[3]_{2,3})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(0[3]_{2,3})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(2[1]_{4,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(2[3]_{4,2})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[2]_{2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[1]_{4,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(3[0]_{3,2})\\(2[3]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[3]_{4,2})\\(2[1]_{4,1})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[2]_{2,4})\\(1[2]_{1,4})\end{matrix} \quad \times \quad (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[2]_{2,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(2[1]_{4,1})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(2[2]_{1,2,4})\end{matrix} \quad \times \quad (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[1]_{4,1})\\(3[0]_{3,2})\end{matrix}$$

$$(1[2]_{1,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[1]_{4,1})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(1[2]_{1,4})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[1]_{4,1})\\(2[2]_{4,2,1})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[2]_{1,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[2]_{4,2,1})\\(2[1]_{4,1})\end{matrix}$$

13. Pre-semiotic system

$(3[2]_{2,4}\ 2[2]_{1,2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 2[2]_{4,2,1}\ 2[3]_{4,2})$

Qualitative action

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(0[3]_{2,3})\\(2[2]_{1,2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[1]_{4,3})\\(2[3]_{4,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(3[2]_{2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[1]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[2]_{4,2,1})\\(3[2]_{4,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(3[2]_{2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(2[2]_{4,2,1})\\(3[1]_{4,3})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(2[2]_{1,2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(1[3]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(2[3]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[3]_{3,4})\\(3[2]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(3[2]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(2[2]_{1,2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[3]_{4,2})\\(2[2]_{4,2,1})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(1[3]_{3,4})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(2[3]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(3[2]_{2,4})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[2]_{1,2,4})\\(1[3]_{3,4})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[2]_{1,2,4})\\(0[3]_{2,3})\end{matrix} \times (2[2]_{4,2,1}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(2[3]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[2]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(2[2]_{4,2,1})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[2]_{2,4})\\(2[2]_{1,2,4})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(2[2]_{1,2,4})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(2[2]_{4,2,1})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[2]_{1,2,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[3]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(2[2]_{1,2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(2[2]_{4,2,1})\end{matrix}$$

14. Pre-semiotic dual system
$(3[2]_{2,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 2[3]_{4,2})$

Qualitative action

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[3]_{2,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(2[3]_{4,2})\end{matrix} (3[1]_{4,3})$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[2]_{2,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[2]_{4,2})\end{matrix} (3[1]_{4,3})$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(1[3]_{3,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(2[3]_{4,2})\end{matrix} (3[2]_{4,2})$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[2]_{2,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[1]_{4,3})\end{matrix} (3[2]_{4,2})$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix} (2[3]_{4,2})$$

$$(3[2]_{2,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(1[3]_{3,4})\end{matrix} (0[3]_{2,3}) \quad \times \quad (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[2]_{4,2})\end{matrix} (2[3]_{4,2})$$

Medial action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{2,4})\\(2[3]_{2,4})\end{matrix} (1[3]_{3,4}) \quad \times \quad (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(2[3]_{4,2})\end{matrix} (3[0]_{3,2})$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[2]_{2,4})\end{matrix} (1[3]_{3,4}) \quad \times \quad (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[2]_{4,2})\end{matrix} (3[0]_{3,2})$$

$$(2[3]_{2,4}) \gg_{\Upsilon} \begin{matrix}(0[3]_{2,3})\\ \succ 1[3]_{3,4})\\ (3[2]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(2[3]_{4,2})\\ \succ (3[2]_{4,2})\\ (3[0]_{3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg_{\Upsilon} \begin{matrix}(3[2]_{2,4})\\ \succ (1[3]_{3,4})\\ (0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ (3[2]_{4,2})\\ (2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg \begin{matrix}(0[3]_{2,3})\\ \succ (1[3]_{3,4})\\ (2[3]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(3[2]_{4,2})\\ \succ (2[3]_{4,2})\\ (3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg_{\Upsilon} \begin{matrix}(2[3]_{2,4})\\ \succ (1[3]_{3,4})\\ (0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ (2[3]_{4,2})\\ (3[2]_{4,2})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg_{\Upsilon} \begin{matrix}(3[2]_{2,4})\\ \succ (2[3]_{2,4})\\ (1[3]_{3,4})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(3[1]_{4,3})\\ \succ (3[0]_{3,2})\\ (2[3]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg_{\Upsilon} \begin{matrix}(1[3]_{3,4})\\ \succ (2[3]_{2,4})\\ (3[2]_{2,4})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[3]_{4,2})\\ \succ (3[0]_{3,2})\\ (3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg_{\Upsilon} \begin{matrix}(0[3]_{2,3})\\ \succ (2[3]_{2,4})\\ (3[2]_{2,4})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(2[3]_{4,2})\\ \succ (3[1]_{4,3})\\ (3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg_{\Upsilon} \begin{matrix}(3[2]_{2,4})\\ \succ (2[3]_{2,4})\\ (0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ (3[1]_{4,3})\\ (2[3]_{4,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg_{\Upsilon} \begin{matrix}(0[3]_{2,3})\\ \succ (2[3]_{2,4})\\ (1[3]_{3,4})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(3[1]_{4,3})\\ \succ (2[3]_{4,2})\\ (3[0]_{3,2})\end{matrix}$$

$$(3[2]_{2,4}) \gg_{\Upsilon} \begin{matrix}(1[3]_{3,4})\\ \succ (2[3]_{2,4})\\ (0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg_{\Upsilon} \begin{matrix}(3[0]_{3,2})\\ \succ (2[3]_{4,2})\\ (3[1]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(2[3]_{2,4})\\(3[2]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(3[2]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \curlyvee \succ \begin{matrix}(1[3]_{3,4})\\(3[2]_{2,4})\\(2[3]_{2,4})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(2[3]_{2,4})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[2]_{4,2})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[3]_{2,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \curlyvee \succ \begin{matrix}(0[3]_{2,3})\\(3[2]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[1]_{4,3})\\(3[2]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \curlyvee \succ \begin{matrix}(1[3]_{3,4})\\(3[2]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (2[3]_{4,2}) \gg \curlyvee \succ \begin{matrix}(3[0]_{3,2})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

15. Pre-semiotic dual system

$(3[3]_{2,3,4}\ 2[3]_{2,4}\ 1[3]_{3,4}\ 0[3]_{2,3}) \times (3[0]_{3,2}\ 3[1]_{4,3}\ 3[2]_{4,2}\ 3[3]_{4,3,2})$

Qualitative action

$$(1[3]_{3,4}) \gg \curlyvee \succ \begin{matrix}(3[3]_{2,3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(3[2]_{4,2})\\(3[3]_{4,3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \curlyvee \succ \begin{matrix}(2[3]_{2,4})\\(3[3]_{2,3,4})\\(0[3]_{2,3})\end{matrix} \times (3[0]_{3,2}) \gg \curlyvee \succ \begin{matrix}(3[3]_{4,3,2})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(3[3]_{2,3,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[2]_{4,2})\\(3[3]_{4,3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(3[3]_{2,3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[3]_{4,3,2})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(0[3]_{2,3})\\(2[3]_{2,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[3]_{4,3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(0[3]_{2,3})\\(1[3]_{3,4})\end{matrix} \times (3[0]_{3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[3]_{4,3,2})\\(3[2]_{4,2})\end{matrix}$$

Medial action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[3]_{2,3,4})\\(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(3[3]_{4,3,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(1[3]_{3,4})\\(3[2]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[0]_{3,2})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(3[2]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{4,2})\\(3[2]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(3[3]_{2,3,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[2]_{4,2})\\(3[3]_{4,3,2})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(1[3]_{3,4})\\(2[3]_{2,4})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[3]_{4,3,2})\\(3[0]_{3,2})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(1[3]_{3,4})\\(0[3]_{2,3})\end{matrix} \times (3[1]_{4,3}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[3]_{4,3,2})\\(3[2]_{4,2})\end{matrix}$$

Objectal action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(3[3]_{2,3,4})\\(2[3]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(3[3]_{4,3,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[3]_{2,4})\\(3[3]_{2,3,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[3]_{4,3,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[3]_{2,4})\\(3[3]_{2,3,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[3]_{4,3,2})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(3[3]_{2,3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{3,4})\\(3[3]_{4,3,2})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(2[3]_{2,4})\\(1[3]_{3,4})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[3]_{2,3,4})\\(3[0]_{3,2})\end{matrix}$$

$$(3[3]_{2,3,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(2[3]_{2,4})\\(0[3]_{2,3})\end{matrix} \times (3[2]_{4,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[3]_{4,3,2})\\(3[1]_{4,3})\end{matrix}$$

Interpretative action

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[3]_{2,3,4})\\(1[3]_{3,4})\end{matrix} \times (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[0]_{3,2})\\(3[2]_{4,2})\end{matrix}$$

$$(0[3]_{2,3}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[3]_{2,3,4})\\(2[3]_{2,4})\end{matrix} \times (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[0]_{3,2})\\(3[1]_{4,3})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[3]_{2,3,4})\\(2[3]_{2,4})\end{matrix} \times (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[2]_{4,2})\\(3[1]_{4,3})\\(3[0]_{3,2})\end{matrix}$$

$$(1[3]_{3,4}) \gg \Upsilon \succ \begin{matrix}(2[3]_{2,4})\\(3[3]_{2,3,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[1]_{4,3})\\(3[2]_{4,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(0[3]_{2,3})\\(3[3]_{2,3,4})\\(1[3]_{3,4})\end{matrix} \quad \times \quad (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[1]_{4,3})\\(3[2]_{4,2})\\(3[0]_{3,2})\end{matrix}$$

$$(2[3]_{2,4}) \gg \Upsilon \succ \begin{matrix}(1[3]_{3,4})\\(3[3]_{2,3,4})\\(0[3]_{2,3})\end{matrix} \quad \times \quad (3[3]_{4,3,2}) \gg \Upsilon \succ \begin{matrix}(3[0]_{3,2})\\(3[2]_{4,2})\\(3[1]_{4,3})\end{matrix}$$

Chapter Eight: The Qualitative Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
$([110001]_{3,4}\ [110010]_{1,4}\ [110110]_{1,3,4}\ [101110]_{1,3}) \times$
$([101110]_{3,1}\ [110110]_{4,3,1}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$([110010]_{1,4})$ $([110110]_{4,3,1})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110110]_{1,3,4})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([110110]_{4,3,1})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110110]_{1,3,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110001]_{4,3})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110001]_{3,4})$ $([110110]_{4,3,1})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\quad \curlywedge \gg ([101110]_{1,3}) \quad \times \quad \curlywedge \gg ([101110]_{3,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

Medial action

$$([110010]_{1,4}) \curlywedge\!\gg ([110110]_{1,3,4}) ([101110]_{1,3}) \times ([101110]_{3,1}) \curlywedge\!\gg ([110110]_{4,3,1}) ([110010]_{4,1})$$

$$([110001]_{3,4}) \curlywedge\!\gg ([110110]_{1,3,4}) ([101110]_{1,3}) \times ([101110]_{3,1}) \curlywedge\!\gg ([110110]_{4,3,1}) ([110001]_{4,3})$$

$$([101110]_{1,3}) \curlywedge\!\gg ([110110]_{1,3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge\!\gg ([110110]_{4,3,1}) ([101110]_{3,1})$$

$$([110001]_{3,4}) \curlywedge\!\gg ([110110]_{1,3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge\!\gg ([110110]_{4,3,1}) ([110001]_{4,3})$$

$$([101110]_{1,3}) \curlywedge\!\gg ([110110]_{1,3,4}) ([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge\!\gg ([110110]_{4,3,1}) ([101110]_{3,1})$$

$$([110010]_{1,4}) \curlywedge\!\gg ([110110]_{1,3,4}) ([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge\!\gg ([110110]_{4,3,1}) ([110010]_{4,1})$$

Objectal action

$$([110110]_{1,3,4}) \curlywedge\!\gg ([110010]_{1,4}) ([101110]_{1,3}) \times ([101110]_{3,1}) \curlywedge\!\gg ([110010]_{4,1}) ([110110]_{4,3,1})$$

$$([110001]_{3,4}) \curlywedge\!\gg ([110010]_{1,4}) ([101110]_{1,3}) \times ([101110]_{3,1}) \curlywedge\!\gg ([110010]_{4,1}) ([110001]_{4,3})$$

$([101110]_{1,3})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110110]_{1,3,4})$ $([101110]_{3,1})$

$([110001]_{3,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110110]_{1,3,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([110110]_{4,3,1})$

$([101110]_{1,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([101110]_{3,1})$

Interpretative action

$([110010]_{1,4})$ $([101110]_{3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101110]_{1,3})$ $([110010]_{4,1})$

$([110110]_{1,3,4})$ $([101110]_{3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101110]_{1,3})$ $([110110]_{4,3,1})$

$([110010]_{1,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110110]_{1,3,4})$ $([110010]_{4,1})$

$([101110]_{1,3})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110110]_{1,3,4})$ $([101110]_{3,1})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([101110]_{1,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101110]_{3,1})$

2. Pre-semiotic dual system
$([110001]_{3,4}\ [110010]_{1,4}\ [110110]_{1,3,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110110]_{4,3,1}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$([110010]_{1,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110110]_{1,3,4})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110110]_{1,3,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110001]_{3,4})$ $([110110]_{4,3,1})$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Medial action

$$([110010]_{1,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([101010]_{1,2}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([101010]_{1,2}) \quad ([110001]_{4,3})$$

$$([101010]_{1,2}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([110010]_{1,4}) \quad ([101010]_{2,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([101010]_{1,2}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([110001]_{3,4}) \quad ([101010]_{2,1})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110110]_{1,3,4}) \times \curlywedge \gg ([110110]_{4,3,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Objectal action

$$([110110]_{1,3,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110110]_{4,3,1})$$

$$([110001]_{3,4}) \curlywedge\gg ([110010]_{1,4})([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\gg ([110010]_{4,1})([110001]_{4,3})$$

$$([101010]_{1,2}) \curlywedge\gg ([110010]_{1,4})([110110]_{1,3,4}) \times ([110110]_{4,3,1}) \curlywedge\gg ([110010]_{4,1})([101010]_{2,1})$$

$$([110001]_{3,4}) \curlywedge\gg ([110010]_{1,4})([110110]_{1,3,4}) \times ([110110]_{4,3,1}) \curlywedge\gg ([110010]_{4,1})([110001]_{4,3})$$

$$([110110]_{1,3,4}) \curlywedge\gg ([110010]_{1,4})([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge\gg ([110010]_{4,1})([110110]_{4,3,1})$$

$$([101010]_{1,2}) \curlywedge\gg ([110010]_{1,4})([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge\gg ([110010]_{4,1})([101010]_{2,1})$$

Interpretative action

$$([110010]_{1,4}) \curlywedge\gg ([110001]_{3,4})([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\gg ([110001]_{4,3})([110010]_{4,1})$$

$$([110110]_{1,3,4}) \curlywedge\gg ([110001]_{3,4})([101010]_{1,2}) \times ([110110]_{4,3,1}) \curlywedge\gg ([110001]_{4,3})([101010]_{1,2})$$

$$([110010]_{1,4}) \curlywedge\gg ([110001]_{3,4})([110110]_{1,3,4}) \times ([110110]_{4,3,1}) \curlywedge\gg ([110001]_{4,3})([110010]_{4,1})$$

$([101010]_{1,2})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110110]_{1,3,4})$ $([101010]_{2,1})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([101010]_{1,2})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101010]_{2,1})$

3. Pre-semiotic dual system
$([110001]_{3,4}\ [110010]_{1,4}\ [110110]_{1,3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110110]_{4,3,1}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$([110010]_{1,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110110]_{1,3,4})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110110]_{1,3,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110110]_{1,3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110110]_{4,3,1})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110010]_{4,1})$

Medial action

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([110010]_{1,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110110]_{1,3,4})$ × $\curlywedge \gg ([110110]_{4,3,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

Objectal action

$$([110110]_{1,3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101001]_{2,3}) \quad ([110110]_{4,3,1})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([110110]_{4,3,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110110]_{1,3,4}) \quad ([101001]_{3,2})$$

$$([110001]_{3,4}) \quad ([110110]_{4,3,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110110]_{1,3,4}) \quad ([110001]_{4,3})$$

$$([110110]_{1,3,4}) \quad ([110001]_{3,4})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([110110]_{4,3,1})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

Interpretative action

$$([110010]_{1,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101001]_{2,3}) \quad ([110010]_{4,1})$$

$$([110110]_{1,3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101001]_{2,3}) \quad ([110110]_{4,3,1})$$

$([110010]_{1,4})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110110]_{1,3,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([110110]_{4,3,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110110]_{1,3,4})$ $([101001]_{3,2})$

$([110110]_{1,3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([110110]_{4,3,1})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101001]_{3,2})$

4. Pre-semiotic dual system

$([110001]_{3,4}\ [110010]_{1,4}\ [110010]_{1,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110010]_{4,1}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$([110010]_{1,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([110010]_{4,1})$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Medial action

$$([110010]_{1,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110001]_{4,3})$$

$$([101010]_{1,2}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([101010]_{2,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([101010]_{1,2}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([101010]_{2,1})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Objectal action

$$([110010]_{1,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110001]_{4,3})$$

$$([101010]_{1,2}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([101010]_{2,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

$$([101010]_{1,2}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([101010]_{2,1})$$

Interpretative action

$$([110010]_{1,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101010]_{1,2}) \quad ([110010]_{4,1})$$

$$([110010]_{1,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101010]_{1,2}) \quad ([110010]_{4,1})$$

$$([110010]_{1,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([110010]_{1,4}) \quad ([110010]_{4,1})$$

$$([101010]_{1,2}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([110010]_{1,4}) \quad ([101010]_{2,1})$$

$$([110010]_{1,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([110010]_{1,4}) \quad ([110010]_{4,1})$$

$$([101010]_{1,2}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([110010]_{1,4}) \quad ([101010]_{2,1})$$

5. Pre-semiotic dual system

$$([110001]_{3,4}\ [110010]_{1,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$$
$$([101001]_{3,2}\ [110010]_{4,1}\ [110010]_{4,1}\ [110001]_{4,3})$$

Qualitative action

$$([110010]_{1,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Medial action

$$([110010]_{1,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101001]_{2,3}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([101001]_{3,2})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge [110010]_{4,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

Objectal action

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110010]_{1,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

Interpretative action

$$([110010]_{1,4}) \curlywedge \gg ([110001]_{3,4}) ([101001]_{2,3}) \times ([101001]_{3,2}) \curlywedge \gg ([110001]_{4,3}) ([110010]_{4,1})$$

$$([110010]_{1,4}) \curlywedge \gg ([110001]_{3,4}) ([101001]_{2,3}) \times ([101001]_{3,2}) \curlywedge \gg ([110001]_{4,3}) ([110010]_{4,1})$$

$$([110010]_{1,4}) \curlywedge \gg ([110001]_{3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge \gg ([110001]_{4,3}) ([110010]_{4,1})$$

$$([101001]_{2,3}) \curlywedge \gg ([110001]_{3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge \gg ([110001]_{4,3}) ([101001]_{3,2})$$

$$([110010]_{1,4}) \curlywedge \gg ([110001]_{3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge \gg ([110001]_{4,3}) ([110010]_{4,1})$$

$$([101001]_{2,3}) \curlywedge \gg ([110001]_{3,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge \gg ([110001]_{4,3}) ([101001]_{3,2})$$

6. Pre-semiotic dual system

$$([110001]_{3,4}\,[110010]_{1,4}\,[110001]_{3,4}\,[101001]_{2,3}) \times ([101001]_{3,2}\,[110001]_{4,3}\,[110010]_{4,1}\,[110001]_{4,3})$$

Qualitative action

$$([110010]_{1,4}) \curlywedge \gg ([101001]_{2,3}) ([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge \gg ([101001]_{3,2}) ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([110001]_{4,3})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110001]_{3,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

Medial action

$$([110010]_{1,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101001]_{2,3}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([110010]_{1,4}) \quad ([101001]_{3,2})$$

$([110001]_{3,4})$
$\curlywedge \gg ([110001]_{3,4})$
$([110010]_{1,4})$
$\times$
$([110010]_{4,1})$
$\curlywedge \gg ([110001]_{4,3})$
$([110001]_{4,3})$

$([101001]_{2,3})$
$\curlywedge \gg ([110001]_{3,4})$
$([110001]_{3,4})$
$\times$
$([110001]_{4,3})$
$\curlywedge \gg ([110001]_{4,3})$
$([101001]_{3,2})$

$([110010]_{1,4})$
$\curlywedge \gg ([110001]_{3,4})$
$([110001]_{3,4})$
$\times$
$([110001]_{4,3})$
$\curlywedge \gg ([110001]_{4,3})$
$([110010]_{4,1})$

Objectal action

$([110001]_{3,4})$
$\curlywedge \gg ([110010]_{1,4})$
$([101001]_{2,3})$
$\times$
$([101001]_{3,2})$
$\curlywedge \gg ([110010]_{4,1})$
$([110001]_{4,3})$

$([110001]_{3,4})$
$\curlywedge \gg ([110010]_{1,4})$
$([101001]_{2,3})$
$\times$
$([101001]_{3,2})$
$\curlywedge \gg ([110010]_{4,1})$
$([110001]_{4,3})$

$([101001]_{2,3})$
$\curlywedge \gg ([110010]_{1,4})$
$([110001]_{3,4})$
$\times$
$([110001]_{4,3})$
$\curlywedge \gg ([110010]_{4,1})$
$([101001]_{3,2})$

$([110001]_{3,4})$
$\curlywedge \gg ([110010]_{1,4})$
$([110001]_{3,4})$
$\times$
$([110001]_{4,3})$
$\curlywedge \gg ([110010]_{4,1})$
$([110001]_{4,3})$

$([110001]_{3,4})$
$\curlywedge \gg ([110010]_{1,4})$
$([110001]_{3,4})$
$\times$
$([110001]_{4,3})$
$\curlywedge \gg ([110010]_{4,1})$
$([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

Interpretative action

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101001]_{3,2})$

7. Pre-semiotic dual system
$([110001]_{3,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [110001]_{4,3})$

Qualitative action

$$([010010]_{1,2,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110010]_{1,4}) \quad ([010010]_{4,2,1})$$

$$([110001]_{3,4}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110010]_{1,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([010010]_{1,2,4}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$

$$([110010]_{1,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110001]_{3,4}) \quad ([110010]_{4,1})$$

$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101010]_{1,2}) \times \curlywedge \gg ([101010]_{2,1})$$
$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$

Medial action

$$([010010]_{1,2,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([010010]_{4,2,1})$$

$$([110001]_{3,4}) \quad ([101010]_{2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101010]_{1,2}) \quad ([110001]_{4,3})$$

$([101010]_{1,2})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $\curlywedge \gg ([110010]_{4,1})$
$([010010]_{1,2,4})$ $([101010]_{2,1})$

$([110001]_{3,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $\curlywedge \gg ([110010]_{4,1})$
$([010010]_{1,2,4})$ $([110001]_{4,3})$

$([101010]_{1,2})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([101010]_{2,1})$

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $\curlywedge \gg ([110010]_{4,1})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

Objectal action

$([110010]_{1,4})$ $([101010]_{2,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ $\times$ $\curlywedge \gg ([010010]_{4,2,1})$
$([101010]_{1,2})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([101010]_{2,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ $\times$ $\curlywedge \gg ([010010]_{4,2,1})$
$([101010]_{1,2})$ $([110001]_{4,3})$

$([101010]_{1,2})$ $([110010]_{4,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ $\times$ $\curlywedge \gg ([010010]_{4,2,1})$
$([110010]_{1,4})$ $([101010]_{2,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ $\times$ $\curlywedge \gg ([010010]_{4,2,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

$([101010]_{1,2})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([101010]_{2,1})$

Interpretative action

$([010010]_{1,2,4})$ $([101010]_{2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101010]_{1,2})$ $([010010]_{4,2,1})$

$([110010]_{1,4})$ $([101010]_{2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101010]_{1,2})$ $([110010]_{4,1})$

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([101010]_{1,2})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101010]_{2,1})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([101010]_{1,2})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([101010]_{2,1})$

8. Pre-semiotic dual system

$([110001]_{3,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [110001]_{4,3})$

Qualitative action

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([110001]_{3,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110010]_{4,1})$

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

Medial action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([010010]_{1,2,4}) \quad ([101001]_{3,2})$$

$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([110010]_{1,4}) \times \curlywedge \gg ([110010]_{4,1})$$
$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$

Objectal action

$$([110010]_{1,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \quad ([110010]_{4,1})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([110010]_{4,1})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([110010]_{1,4}) \quad ([101001]_{3,2})$$

$([110001]_{3,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110010]_{1,4})$ $([110001]_{4,3})$

$([110010]_{1,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

Interpretative action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110010]_{1,4})$ $([101001]_{3,2})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([101001]_{3,2})$

9. Pre-semiotic dual system
$([110001]_{3,4}\ [010010]_{1,2,4}\ [110001]_{4,3}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010010]_{4,2,1}\ [110001]_{4,3})$

Qualitative action

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

Medial action

$$([010010]_{1,2,4}) \; \curlywedge \gg ([110001]_{3,4}) \; ([101001]_{2,3}) \times ([101001]_{3,2}) \; \curlywedge \gg ([110001]_{4,3}) \; ([010010]_{4,2,1})$$

$$([110001]_{3,4}) \; \curlywedge \gg ([110001]_{3,4}) \; ([101001]_{2,3}) \times ([101001]_{3,2}) \; \curlywedge \gg ([110001]_{4,3}) \; ([110001]_{4,3})$$

$$([101001]_{2,3}) \; \curlywedge \gg ([110001]_{3,4}) \; ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \; \curlywedge \gg ([110001]_{4,3}) \; ([101001]_{3,2})$$

$$([110001]_{3,4}) \; \curlywedge \gg ([110001]_{3,4}) \; ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \; \curlywedge \gg ([110001]_{4,3}) \; ([110001]_{4,3})$$

$$([101001]_{2,3}) \; \curlywedge \gg ([110001]_{3,4}) \; ([110001]_{3,4}) \times ([110001]_{4,3}) \; \curlywedge \gg ([110001]_{4,3}) \; ([101001]_{3,2})$$

$$([010010]_{1,2,4}) \; \curlywedge \gg ([110001]_{3,4}) \; ([110001]_{3,4}) \times ([110001]_{4,3}) \; \curlywedge \gg ([110001]_{4,3}) \; ([010010]_{4,2,1})$$

Objectal action

$$([110001]_{3,4}) \; \curlywedge \gg ([010010]_{1,2,4}) \; ([101001]_{2,3}) \times ([101001]_{3,2}) \; \curlywedge \gg ([010010]_{4,2,1}) \; ([110001]_{4,3})$$

$$([110001]_{3,4}) \; \curlywedge \gg ([010010]_{1,2,4}) \; ([101001]_{2,3}) \times ([101001]_{3,2}) \; \curlywedge \gg ([010010]_{4,2,1}) \; ([110001]_{4,3})$$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110001]_{3,4})$ $([101001]_{3,2})$

Interpretative action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([010010]_{1,2,4})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{4,2,1})$ $([101001]_{2,3})$

$([101001]_{2,3})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([101001]_{3,2})$

10. Pre-semiotic dual system

$([110001]_{3,4}\ [010001]_{2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010001]_{4,2}\ [110001]_{4,3})$

Qualitative action

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010001]_{4,2})$

Medial action

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([010001]_{4,2})$

Objectal action

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([110001]_{3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([101001]_{3,2})$

Interpretative action

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([101001]_{3,2})$

11. Pre-semiotic dual system

$([010001]_{2,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [010001]_{4,2})$

Qualitative action

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([010001]_{2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{1,4})$ $([010001]_{4,2})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([010001]_{2,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101010]_{1,2})$ × $\curlywedge \gg ([101010]_{2,1})$
$([010010]_{1,2,4})$ $([010001]_{4,2})$

$([110010]_{1,4})$
$\curlywedge \gg ([101010]_{1,2})$ $\times$ $([010001]_{4,2})$
$([010001]_{2,4})$ $\curlywedge \gg ([101010]_{2,1})$
$([110010]_{4,1})$

$([010010]_{1,2,4})$
$\curlywedge \gg ([101010]_{1,2})$ $\times$ $([010001]_{4,2})$
$([010001]_{2,4})$ $\curlywedge \gg ([101010]_{2,1})$
$([010010]_{4,2,1})$

Medial action

$([010001]_{2,4})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([101010]_{2,1})$
$([101010]_{1,2})$ $\curlywedge \gg ([110010]_{4,1})$
$([010001]_{4,2})$

$([010001]_{2,4})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([101010]_{2,1})$
$([101010]_{1,2})$ $\curlywedge \gg ([110010]_{4,1})$
$([010001]_{4,2})$

$([101010]_{1,2})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([010010]_{4,2,1})$
$([010010]_{1,2,4})$ $\curlywedge \gg ([110010]_{4,1})$
$([101010]_{2,1})$

$([010001]_{2,4})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([010010]_{4,2,1})$
$([010010]_{1,2,4})$ $\curlywedge \gg ([110010]_{4,1})$
$([010001]_{4,2})$

$([101010]_{1,2})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([010001]_{4,2})$
$([010001]_{2,4})$ $\curlywedge \gg ([110010]_{4,1})$
$([101010]_{2,1})$

$([010010]_{1,2,4})$
$\curlywedge \gg ([110010]_{1,4})$ $\times$ $([010001]_{4,2})$
$([010001]_{2,4})$ $\curlywedge \gg ([110010]_{4,1})$
$([010010]_{4,2,1})$

Objectal action

$$([110010]_{1,4}) \curlywedge\!\gg ([010010]_{1,2,4}) ([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\!\gg ([010010]_{4,2,1}) ([110010]_{4,1})$$

$$([010001]_{2,4}) \curlywedge\!\gg ([010010]_{1,2,4}) ([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\!\gg ([010010]_{4,2,1}) ([010001]_{4,2})$$

$$([101010]_{1,2}) \curlywedge\!\gg ([010010]_{1,2,4}) ([110010]_{1,4}) \times ([110010]_{1,4}) \curlywedge\!\gg ([010010]_{4,2,1}) ([101010]_{2,1})$$

$$([010001]_{2,4}) \curlywedge\!\gg ([010010]_{1,2,4}) ([110010]_{1,4}) \times ([110010]_{4,1}) \curlywedge\!\gg ([010010]_{4,2,1}) ([010001]_{4,2})$$

$$([110010]_{1,4}) \curlywedge\!\gg ([010010]_{1,2,4}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge\!\gg ([010010]_{4,2,1}) ([110010]_{4,1})$$

$$([101010]_{1,2}) \curlywedge\!\gg ([010010]_{1,2,4}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge\!\gg ([010010]_{4,2,1}) ([101010]_{2,1})$$

Interpretative action

$$([010010]_{1,2,4}) \curlywedge\!\gg ([010001]_{2,4}) ([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\!\gg ([010001]_{4,2}) ([010010]_{4,2,1})$$

$$([110010]_{1,4}) \curlywedge\!\gg ([010001]_{2,4}) ([101010]_{1,2}) \times ([101010]_{2,1}) \curlywedge\!\gg ([010001]_{4,2}) ([110010]_{4,1})$$

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([101010]_{1,2})$ $([110010]_{4,1})$
$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$
$([110010]_{1,4})$ $([101010]_{2,1})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([101010]_{1,2})$ $([010010]_{1,2,4})$
$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$
$([010010]_{1,2,4})$ $([101010]_{2,1})$

12. Pre-semiotic dual system
$([010001]_{2,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [010001]_{4,2})$

Qualitative action

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([010001]_{2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([110010]_{1,4})$ $([010001]_{4,2})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([010001]_{2,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([010010]_{1,2,})$

$([110010]_{1,4})$ $([010001]_{4,2}$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110010]_{4,1})$

$([010010]_{1,2,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([010010]_{4,2,1})$

Medial action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([010010]_{1,2,4})$ $([101001]_{3,2})$

$([010001]_{2,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([010010]_{1,2,4})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([010001]_{2,4})$ $([101001]_{3,2})$

$([010010]_{1,2,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([110010]_{1,4})$ × $\curlywedge \gg ([110010]_{4,1})$
$([010001]_{2,4})$ $([010010]_{4,2,1})$

Objectal action

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110010]_{1,4})$ $([101001]_{3,2})$

$([010001]_{2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([110010]_{1,4})$ $([010001]_{4,2})$

$([110010]_{1,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([010001]_{2,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([010010]_{1,2,4})$ × $\curlywedge \gg ([010010]_{4,2,1})$
$([010001]_{2,4})$ $([101001]_{3,2})$

Interpretative action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$([110010]_{1,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([110010]_{4,1})$

$([010010]_{1,2,4})$ $([110010]_{4,1})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110010]_{1,4})$ $([010010]_{4,2,1})$

$([101001]_{2,3})$ $([110010]_{4,1})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110010]_{1,4})$ $([101001]_{3,2})$

$([110010]_{1,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([010010]_{1,2,4})$ $([110010]_{4,1})$

$([101001]_{2,3})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([010010]_{1,2,4})$ $([101001]_{3,2})$

13. Pre-semiotic dual system
$([010001]_{2,4}\ [010010]_{1,2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010010]_{4,2,1}\ [010001]_{4,2})$

Qualitative action

$([010010]_{1,2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010010]_{4,2,1})$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010010]_{1,2,4})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([010010]_{1,2,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([010010]_{4,2,1})$

Medial action

$([010010]_{1,2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010010]_{4,2,1})$

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([101001]_{3,2})$

$([010001]_{2,4})$ $([010010]_{4,2,1})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010010]_{1,2,4})$ $([010001]_{4,2})$

$$([101001]_{2,3}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([010001]_{2,4}) \quad ([101001]_{3,2})$$

$$([010010]_{1,2,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([010001]_{2,4}) \quad ([010010]_{4,2,1})$$

Objectal action

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([010001]_{2,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \quad ([010001]_{4,2})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

$$([010001]_{2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \quad ([010001]_{4,2})$$

$$([110001]_{3,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([010001]_{2,4}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([010010]_{1,2,4}) \times \curlywedge \gg ([010010]_{4,2,1})$$
$$([010001]_{2,4}) \quad ([101001]_{3,2})$$

Interpretative action

$$([010010]_{1,2,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([101001]_{2,3}) \quad ([010010]_{4,2,1})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

$$([110001]_{3,4}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([010010]_{1,2,4}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([010010]_{4,2,1})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([010010]_{1,2,4}) \quad ([101001]_{3,2})$$

14. Pre-semiotic dual system

$$([010001]_{2,4}\ [010001]_{2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$$
$$([101001]_{3,2}\ [110001]_{4,3}\ [010001]_{4,2}\ [010001]_{4,2})$$

Qualitative action

$$([010001]_{2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([101001]_{2,3}) \times \curlywedge \gg ([101001]_{3,2})$$
$$([110001]_{3,4}) \quad ([010001]_{4,2})$$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([110001]_{3,4})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([101001]_{2,3})$ × $\curlywedge \gg ([101001]_{3,2})$
$([010001]_{2,4})$ $([010001]_{4,2})$

Medial action

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([101001]_{3,2})$

$$([010001]_{2,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([010001]_{2,4}) \quad ([010001]_{4,2})$$

$$([101001]_{2,3}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([010001]_{2,4}) \quad ([101001]_{3,2})$$

$$([010001]_{2,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([110001]_{3,4}) \times \curlywedge \gg ([110001]_{4,3})$$
$$([010001]_{2,4}) \quad ([010001]_{4,2})$$

Objectal action

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([010001]_{2,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([101001]_{2,3}) \quad ([010001]_{4,2})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

$$([010001]_{2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([110001]_{3,4}) \quad ([010001]_{4,2})$$

$$([110001]_{3,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([010001]_{2,4}) \quad ([110001]_{4,3})$$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([010001]_{2,4})$ $([101001]_{3,2})$

Interpretative action

$([010001]_{2,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([010001]_{4,2})$

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([010001]_{2,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([010001]_{4,2})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([110001]_{3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([010001]_{2,4})$ $([110001]_{4,3})$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([010001]_{2,4})$ $([101001]_{3,2})$

15. Pre-semiotic dual system
$([001001]_{2,3,4}\ [010001]_{2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010001]_{4,2}\ [001001]_{4,3,2})$

Qualitative action

$$([010001]_{2,4}) \curlywedge \gg ([101001]_{2,3}) ([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge \gg ([101001]_{3,2}) ([010001]_{4,2})$$

$$([001001]_{2,3,4}) \curlywedge \gg ([101001]_{2,3}) ([110001]_{3,4}) \times ([110001]_{4,3}) \curlywedge \gg ([101001]_{3,2}) ([001001]_{4,3,2})$$

$$([110001]_{3,4}) \curlywedge \gg ([101001]_{2,3}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge \gg ([101001]_{3,2}) ([110001]_{4,3})$$

$$([010001]_{2,4}) \curlywedge \gg ([101001]_{2,3}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge \gg ([101001]_{3,2}) ([010001]_{4,2})$$

$$([110001]_{3,4}) \curlywedge \gg ([101001]_{2,3}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge \gg ([101001]_{3,2}) ([110001]_{4,3})$$

$$([010001]_{2,4}) \curlywedge \gg ([101001]_{2,3}) ([010001]_{2,4}) \times ([010001]_{4,2}) \curlywedge \gg ([101001]_{3,2}) ([010001]_{4,2})$$

Medial action

$$([010001]_{2,4}) \curlywedge \gg ([110001]_{3,4}) ([101001]_{2,3}) \times ([101001]_{3,2}) \curlywedge \gg ([110001]_{4,3}) ([010001]_{4,2})$$

$$([001001]_{2,3,4}) \curlywedge \gg ([110001]_{3,4}) ([101001]_{2,3}) \times ([101001]_{3,2}) \curlywedge \gg ([110001]_{4,3}) ([001001]_{4,3,2})$$

$([101001]_{2,3})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([101001]_{3,2})$

$([001001]_{2,3,4})$ $([010001]_{4,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([010001]_{2,4})$ $([001001]_{4,3,2})$

$([101001]_{2,3})$ $([001001]_{4,3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([001001]_{2,3,4})$ $([101001]_{3,2})$

$([010001]_{2,4})$ $([001001]_{4,3,2})$
$\curlywedge \gg ([110001]_{3,4})$ × $\curlywedge \gg ([110001]_{4,3})$
$([001001]_{2,3,4})$ $([010001]_{4,2})$

Objectal action

$([110001]_{3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([110001]_{4,3})$

$([001001]_{2,3,4})$ $([101001]_{3,2})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([101001]_{2,3})$ $([001001]_{4,3,2})$

$([101001]_{2,3})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([101001]_{3,2})$

$([001001]_{2,3,4})$ $([110001]_{4,3})$
$\curlywedge \gg ([010001]_{2,4})$ × $\curlywedge \gg ([010001]_{4,2})$
$([110001]_{3,4})$ $([001001]_{4,3,2})$

$$([110001]_{3,4}) \quad ([001001]_{4,3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([001001]_{2,3,4}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([001001]_{4,3,2})$$
$$\curlywedge \gg ([010001]_{2,4}) \times \curlywedge \gg ([010001]_{4,2})$$
$$([001001]_{2,3,4}) \quad ([101001]_{3,2})$$

Interpretative action

$$([010001]_{2,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([101001]_{2,3}) \quad ([010001]_{4,2})$$

$$([110001]_{3,4}) \quad ([101001]_{3,2})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([101001]_{2,3}) \quad ([110001]_{4,3})$$

$$([010001]_{2,4}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([110001]_{3,4}) \quad ([010001]_{4,2})$$

$$([101001]_{2,3}) \quad ([110001]_{4,3})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([110001]_{3,4}) \quad ([101001]_{3,2})$$

$$([110001]_{3,4}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([010001]_{2,4}) \quad ([110001]_{4,3})$$

$$([101001]_{2,3}) \quad ([010001]_{4,2})$$
$$\curlywedge \gg ([001001]_{2,3,4}) \times \curlywedge \gg ([001001]_{4,3,2})$$
$$([010001]_{2,4}) \quad ([101001]_{3,2})$$

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
([110001] [110010] [110110] [101110]) ×
([101110] [110110] [110010] [110001])

Qualitative action

$$\begin{matrix} ([110001]_{3,4}) \\ ([110110]_{1,3,4}) \gg \succ ([101110]_{1,3}) \\ ([110010]_{1,4}) \end{matrix} \times \begin{matrix} ([110010]_{4,1}) \\ ([101110]_{3,1}) \gg \succ ([110110]_{4,3,1}) \\ ([110001]_{4,3}) \end{matrix}$$

$$\begin{matrix} ([110010]_{1,4}) \\ ([110110]_{1,4,3}) \gg \succ ([101110]_{1,3}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([101110]_{3,1}) \gg \succ ([110110]_{4,3,1}) \\ ([110010]_{4,1}) \end{matrix}$$

$$\begin{matrix} ([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \succ ([101110]_{1,3}) \\ ([110110]_{1,3,4}) \end{matrix} \times \begin{matrix} ([110110]_{4,3,1}) \\ ([101110]_{3,1}) \gg \succ ([110010]_{4,1}) \\ ([110001]_{4,3}) \end{matrix}$$

$$\begin{matrix} ([110110]_{1,3,4}) \\ ([110010]_{1,4}) \gg \succ ([101110]_{1,3}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([101110]_{3,1}) \gg \succ ([110010]_{4,1}) \\ ([110110]_{4,3,1}) \end{matrix}$$

$$\begin{matrix} ([110110]_{1,3,4}) \\ ([110001]_{3,4}) \gg \succ ([101110]_{1,3}) \\ ([110010]_{1,4}) \end{matrix} \times \begin{matrix} ([110010]_{4,1}) \\ ([101110]_{3,1}) \gg \succ ([110001]_{4,3}) \\ ([110110]_{4,3,1}) \end{matrix}$$

$$\begin{matrix} ([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([101110]_{1,3}) \\ ([110110]_{1,3,4}) \end{matrix} \times \begin{matrix} ([110110]_{4,3,1}) \\ ([101110]_{3,1}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1}) \end{matrix}$$

Medial action

$$([110001]_{3,4})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110001]_{4,3})$$

$$([110010]_{1,4})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110010]_{4,1})$$

$$([101110]_{1,3})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101110]_{3,1})$$

$$([110001]_{3,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([101110]_{3,1})$$
$$([101110]_{1,3}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110001]_{4,3})$$

$$([101110]_{1,3})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([101110]_{3,1})$$

$$([110010]_{1,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([101110]_{3,1})$$
$$([101110]_{1,3}) \qquad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110010]_{4,1})$$

Objectal action

$$([110001]_{3,4})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110010]_{1,4}) \quad \times \quad ([110110]_{4,3,1})$$
$$([110110]_{1,3,4}) \qquad ([110010]_{4,1}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110001]_{4,3})$$

$$([110110]_{1,3,4})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110010]_{1,4}) \quad \times \quad ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([110010]_{4,1}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110110]_{4,3,1})$$

$$([101110]_{1,3})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110001]_{3,4}) \qquad ([101110]_{3,1})$$

$$([110001]_{3,4}) \qquad ([101110]_{3,1})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([101110]_{1,3}) \qquad ([110001]_{4,3})$$

$$([101110]_{1,3}) \qquad ([110110]_{4,3,1})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110110]_{1,3,4}) \qquad ([101110]_{3,1})$$

$$([110110]_{1,3,4}) \qquad ([101110]_{3,1})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([101110]_{1,3}) \qquad ([110110]_{4,3,1})$$

Interpretative action

$$([110010]_{1,4}) \qquad ([110110]_{4,3,1})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110110]_{1,3,4}) \qquad ([110010]_{4,1})$$

$$([110110]_{1,3,4}) \qquad ([110010]_{4,1})$$
$$([101110]_{1,3}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([101110]_{3,1})$$
$$([110010]_{1,4}) \qquad ([110110]_{4,3,1})$$

$$([101110]_{1,3}) \qquad ([110010]_{4,1})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110010]_{1,4}) \qquad ([101110]_{3,1})$$

$$([110010]_{1,4}) \qquad ([101110]_{3,1})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([101110]_{1,3}) \qquad ([110010]_{4,1})$$

$$\begin{matrix} ([101110]_{1,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110110]_{1,3,4}) \end{matrix} \times \begin{matrix} ([110110]_{4,3,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101110]_{3,1}) \end{matrix}$$

$$\begin{matrix} ([110110]_{1,3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101110]_{1,3}) \end{matrix} \times \begin{matrix} ([101110]_{3,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110110]_{4,3,1}) \end{matrix}$$

2. Pre-semiotic dual system

$([110001]_{3,4}\,[110010]_{1,4}\,[110110]_{1,3,4}\,[101010]_{1,2}) \times$
$([101010]_{2,1}\,[110110]_{4,3,1}\,[110010]_{1,4}\,[110001]_{4,3})$

Qualitative action

$$\begin{matrix} ([110001]_{3,4}) \\ ([110110]_{1,3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4}) \end{matrix} \times \begin{matrix} ([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110110]_{4,3,1}) \\ ([110001]_{4,3}) \end{matrix}$$

$$\begin{matrix} ([110010]_{1,4}) \\ ([110110]_{1,3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110110]_{4,3,1}) \\ ([110010]_{4,1}) \end{matrix}$$

$$\begin{matrix} ([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110110]_{1,3,4}) \end{matrix} \times \begin{matrix} ([110110]_{4,3,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3}) \end{matrix}$$

$$\begin{matrix} ([110110]_{1,3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110110]_{4,3,1}) \end{matrix}$$

$$\begin{matrix} ([110110]_{1,3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4}) \end{matrix} \times \begin{matrix} ([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110110]_{4,3,1}) \end{matrix}$$

$$([110010]_{1,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110110]_{1,3,4}) \qquad ([110010]_{4,1})$$

Medial action

$$([110001]_{3,4}) \qquad ([110010]_{4,1})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4}) \qquad ([110001]_{4,3})$$

$$([110010]_{1,4}) \qquad ([110001]_{4,3})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110001]_{3,4}) \qquad ([110010]_{4,1})$$

$$([101010]_{1,2}) \qquad ([110001]_{4,3})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110001]_{3,4}) \qquad ([101010]_{2,1})$$

$$([110001]_{3,4}) \qquad ([101010]_{2,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{1,4})$$
$$([101010]_{1,2}) \qquad ([110001]_{4,3})$$

$$([101010]_{1,2}) \qquad ([110010]_{4,1})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110010]_{1,4}) \qquad ([101010]_{2,1})$$

$$([110010]_{1,4}) \qquad ([101010]_{2,1})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \quad \times \quad ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([101010]_{1,2}) \qquad ([110010]_{4,1})$$

Objectal action

$$([110001]_{3,4}) \qquad ([110110]_{4,3,1})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \quad \times \quad ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110110]_{1,3,4}) \qquad ([110001]_{4,3})$$

$$([110110]_{1,3,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110001]_{3,4})$$
$$([110001]_{4,3})$$
$$([110001]_{4,3})$$

$$([101010]_{1,2})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110001]_{3,4})$$
$$([101010]_{2,1})$$

$$([110001]_{3,4})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([101010]_{1,2})$$
$$([110001]_{4,3})$$

$$([101010]_{1,2})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110110]_{1,3,4})$$
$$([110110]_{4,3,1})$$
$$([101010]_{2,1})$$

$$([110110]_{1,3,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([101010]_{1,2})$$
$$([110110]_{4,3,1})$$

Interpretative action

$$([110010]_{1,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110110]_{4,3,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110110]_{1,3,4})$$
$$([110001]_{4,3})$$
$$([110010]_{4,1})$$

$$([110110]_{1,3,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4})$$
$$([110001]_{4,3})$$
$$([110110]_{4,3,1})$$

$$([101010]_{1,2})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110010]_{1,4})$$
$$([110001]_{4,3})$$
$$([101010]_{2,1})$$

$$([110010]_{1,4})\quad\quad([101010]_{2,1})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([101010]_{1,2})\quad\quad([110010]_{4,1})$$

$$([101010]_{1,2})\quad\quad([110110]_{4,3,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110110]_{1,3,4})\quad\quad([101010]_{2,1})$$

$$([110110]_{1,3,4})\quad\quad([101010]_{2,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2})\quad\quad([110110]_{4,3,1})$$

3. Pre-semiotic dual system

$([110001]_{3,4}\,[110010]_{1,4}\,[110110]_{1,3,4}\,[101001]_{2,3}) \times$
$([101001]_{3,2}\,[110110]_{4,3,1}\,[110010]_{4,1}\,[110001]_{4,3})$

Qualitative action

$$([110001]_{3,4})\quad\quad([110010]_{4,1})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110010]_{1,4})\quad\quad([110001]_{4,3})$$

$$([110010]_{1,4})\quad\quad([110001]_{4,3})$$
$$([110110]_{1,3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110110]_{4,3,1})$$
$$([110001]_{3,4})\quad\quad([110010]_{4,1})$$

$$([110001]_{3,4})\quad\quad([110110]_{4,3,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110110]_{1,3,4})\quad\quad([110001]_{4,3})$$

$$([110110]_{1,3,4})\quad\quad([110001]_{4,3})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110001]_{3,4})\quad\quad([110110]_{4,3,1})$$

$$\begin{matrix}([110110]_{1,3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110110]_{4,3,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110110]_{1,3,4})\end{matrix} \times \begin{matrix}([110110]_{4,3,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110110]_{1,3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110110]_{4,3,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Objectal action

$$([110001]_{3,4})$$
$$([101001]_{2,3}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([101001]_{3,2})$$
$$([110110]_{1,3,4}) \qquad ([110001]_{4,3})$$

$$([110110]_{1,3,4})$$
$$([101001]_{2,3}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([101001]_{3,2})$$
$$([110001]_{3,4}) \qquad ([110110]_{4,3,1})$$

$$([101001]_{2,3})$$
$$([110110]_{1,3,4}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([110110]_{4,3,1})$$
$$([110001]_{3,4}) \qquad ([101001]_{3,2})$$

$$([110001]_{3,4})$$
$$([110110]_{1,3,4}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([110110]_{4,3,1})$$
$$([101001]_{2,3}) \qquad ([110001]_{4,3})$$

$$([101001]_{2,3})$$
$$([110001]_{3,4}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([110001]_{4,3})$$
$$([110110]_{1,3,4}) \qquad ([101001]_{3,2})$$

$$([110110]_{1,3,4})$$
$$([110001]_{3,4}) \gg \Upsilon \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \Upsilon \succ ([110001]_{4,3})$$
$$([101001]_{2,3}) \qquad ([110110]_{4,3,1})$$

Interpretative action

$$([110010]_{1,4})$$
$$([101001]_{2,3}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([101001]_{3,2})$$
$$([110110]_{1,3,4}) \qquad ([110010]_{4,1})$$

$$([110110]_{1,3,4})$$
$$([101001]_{2,3}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([101001]_{3,2})$$
$$([110010]_{1,4}) \qquad ([110110]_{4,3,1})$$

$$([101001]_{2,3})$$
$$([110110]_{1,3,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([110110]_{4,3,1})$$
$$([110010]_{1,4})$$
$$([110010]_{4,1})$$
$$([101001]_{3,2})$$

$$([110010]_{1,4})$$
$$([110110]_{1,3,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([110110]_{4,3,1})$$
$$([101001]_{2,3})$$
$$([101001]_{3,2})$$
$$([110010]_{4,1})$$

$$([101001]_{2,3})$$
$$([110010]_{1,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([110010]_{4,1})$$
$$([110110]_{1,3,4})$$
$$([110110]_{4,3,1})$$
$$([101001]_{3,2})$$

$$([110110]_{1,3,4})$$
$$([110010]_{1,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([110010]_{4,1})$$
$$([101001]_{2,3})$$
$$([101001]_{3,2})$$
$$([110110]_{4,3,1})$$

4. Pre-semiotic dual system

$([110001]_{3,4}\ [110010]_{1,4}\ [110010]_{1,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110010]_{4,1}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$$([110001]_{3,4})$$
$$([110010]_{1,4}) \gg \Upsilon \succ ([101010]_{1,2}) \times ([101010]_{2,1}) \gg \Upsilon \succ ([110010]_{4,1})$$
$$([110010]_{1,4})$$
$$([110010]_{4,1})$$
$$([110001]_{4,3})$$

$$([110010]_{1,4})$$
$$([110010]_{1,4}) \gg \Upsilon \succ ([101010]_{1,2}) \times ([101010]_{2,1}) \gg \Upsilon \succ ([110010]_{4,1})$$
$$([110001]_{3,4})$$
$$([110001]_{4,3})$$
$$([110010]_{4,1})$$

$$([110001]_{3,4})$$
$$([110010]_{1,4}) \gg \Upsilon \succ ([101010]_{1,2}) \times ([101010]_{2,1}) \gg \Upsilon \succ ([110010]_{4,1})$$
$$([110010]_{1,4})$$
$$([110010]_{4,1})$$
$$([110001]_{4,3})$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{3,4}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}([110010]_{1,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$([110010]_{1,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \quad \times \quad ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4}) \qquad\qquad ([110010]_{4,1})$$

$$([101010]_{1,2}) \qquad\qquad ([110010]_{4,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad\qquad ([101010]_{2,1})$$

$$([110010]_{1,4}) \qquad\qquad ([101010]_{2,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2}) \qquad\qquad ([110010]_{4,1})$$

$$([101010]_{1,2}) \qquad\qquad ([110010]_{4,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad\qquad ([101010]_{2,1})$$

$$([110010]_{1,4}) \qquad\qquad ([101010]_{2,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2}) \qquad\qquad ([110010]_{4,1})$$

5. Pre-semiotic dual system

$([110001]_{3,4}\ [110010]_{1,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110010]_{4,1}\ [110010]_{4,1}\ [110001]_{3,4})$

Qualitative action

$$([110001]_{3,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \quad \times \quad ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad\qquad ([110001]_{4,3})$$

$$([110010]_{1,4}) \qquad\qquad ([110001]_{4,3})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \quad \times \quad ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110001]_{3,4}) \qquad\qquad ([110010]_{4,1})$$

$$\begin{array}{c}([110001]_{3,4})\\([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110010]_{1,4})\end{array} \times \begin{array}{c}([110010]_{4,1})\\([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})\\([110001]_{3,4})\end{array}$$

$$\begin{array}{c}([110010]_{1,4})\\([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3})\\([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})\\([110010]_{4,1})\end{array}$$

$$\begin{array}{c}([110010]_{1,4})\\([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110010]_{1,4})\end{array} \times \begin{array}{c}([110010]_{4,1})\\([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})\\([110010]_{4,1})\end{array}$$

$$\begin{array}{c}([110010]_{1,4})\\([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110010]_{1,4})\end{array} \times \begin{array}{c}([110010]_{4,1})\\([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})\\([110010]_{4,1})\end{array}$$

Medial action

$$\begin{array}{c}([110001]_{3,4})\\([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4})\\([110010]_{1,4})\end{array} \times \begin{array}{c}([110010]_{4,1})\\([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2})\\([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([110010]_{1,4})\\([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4})\\([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3})\\([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2})\\([110010]_{4,1})\end{array}$$

$$\begin{array}{c}([101001]_{2,3})\\([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4})\\([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3})\\([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1})\\([101001]_{3,2})\end{array}$$

$$\begin{array}{c}([110001]_{3,4})\\([110010]_{1,4}) \gg \curlyvee \succ ([110010]_{1,4})\\([101001]_{2,3})\end{array} \times \begin{array}{c}([101001]_{3,2})\\([110010]_{4,1}) \gg \curlyvee \succ ([110010]_{4,1})\\([110001]_{4})\end{array}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{1,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110010]_{4,1}) \gg \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110010]_{4,1})\end{matrix}$$

6. Pre-semiotic dual system

$([110001]_{3,4}\ [110010]_{1,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [110010]_{4,1}\ [110001]_{4,3})$

Qualitative action

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{3,4}) \\ ([101001]_{3,2}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix}$$

Interpretative action

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{3,4})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \succ ([110010]_{1,4}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

7. Pre-semiotic dual system

$([110001]_{3,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101010]_{1,2}) \times$
$([101010]_{2,1}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [110001]_{4,3})$

Qualitative action

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$([101010]_{1,2})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \qquad ([101010]_{2,1})$$

$$([110001]_{3,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([101010]_{1,2}) \qquad ([110001]_{4,3})$$

$$([101010]_{1,2})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([010010]_{1,2,4}) \qquad ([101010]_{2,1})$$

$$([010010]_{1,2,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([101010]_{1,2}) \qquad ([010010]_{4,2,1})$$

Objectal action

$$([110001]_{3,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4}) \qquad ([110001]_{4,3})$$

$$([110010]_{1,4})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110001]_{3,4}) \qquad ([110010]_{4,1})$$

$$([101010]_{1,2})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([110001]_{3,4}) \qquad ([101010]_{2,1})$$

$$([110001]_{3,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([101010]_{2,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2}) \qquad ([110001]_{4,3})$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110010]_{4,1})\end{matrix}$$

8. Pre-semiotic dual system

$([110001]_{3,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [110001]_{4,3})$

Qualitative action

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([110010]_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$([110010]_{1,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \qquad ([110010]_{4,1})$$

9. Pre-semiotic dual system

$([110001]_{3,4}\,[010010]_{1,2,4}\,[110001]_{3,4}\,[101001]_{2,3}) \times$
$([101001]_{3,2}\,[110001]_{4,3}\,[010010]_{4,2,1}\,[110001]_{4,3})$

Qualitative action

$$([110001]_{3,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([010010]_{1,2,4}) \qquad ([110001]_{4,3})$$

$$([010010]_{1,2,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([010010]_{4,2,1})$$

$$([110001]_{3,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$

$$([110001]_{3,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$

$$([110001]_{3,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([010010]_{1,2,4}) \qquad ([110001]_{4,3})$$

$$([010010]_{1,2,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([010010]_{4,2,1})$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{matrix}$$

Interpretative action

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$([101001]_{2,3})$$
$$([010010]_{1,2,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([010010]_{4,2,1})$$
$$([110001]_{3,4}) \qquad ([101001]_{3,2})$$

$$([110001]_{3,4}) \qquad ([101001]_{3,2})$$
$$([010010]_{1,2,4}) \gg \Upsilon \succ ([110001]_{3,4}) \times ([110001]_{4,3}) \gg \Upsilon \succ ([010010]_{4,2,1})$$
$$([101001]_{2,3}) \qquad ([110001]_{4,3})$$

10. Pre-semiotic dual system

$([110001]_{3,4}\,[010001]_{2,4}\,[110001]_{3,4}\,[101001]_{2,3}) \times$
$([101001]_{3,2}\,[110001]_{4,3}\,[010001]_{4,2}\,[110001]_{4,3})$

Qualitative action

$$([110001]_{3,4})$$
$$([110001]_{3,4}) \gg \Upsilon \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \Upsilon \succ ([110001]_{4,3})$$
$$([010001]_{2,4}) \qquad ([110001]_{4,3})$$

$$([010001]_{2,4}) \qquad ([110001]_{4,3})$$
$$([110001]_{3,4}) \gg \Upsilon \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \Upsilon \succ ([110001]_{4,3})$$
$$([110001]_{3,4}) \qquad ([010001]_{4,2})$$

$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$
$$([010001]_{2,4}) \gg \Upsilon \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \Upsilon \succ ([010001]_{4,2})$$
$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$

$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$
$$([010001]_{2,4}) \gg \Upsilon \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \Upsilon \succ ([010001]_{4,2})$$
$$([110001]_{3,4}) \qquad ([110001]_{4,3})$$

$$([110001]_{3,4}) \qquad ([010001]_{4,2})$$
$$([110001]_{3,4}) \gg \Upsilon \succ ([101001]_{2,3}) \times ([101001]_{3,2}) \gg \Upsilon \succ ([110001]_{4,3})$$
$$([010001]_{2,4}) \qquad ([110001]_{4,3})$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010001]_{4,2})\end{matrix}$$

Objectal action

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{array}{c}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{array}$$

$$\begin{array}{c}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{array} \times \begin{array}{c}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \succ ([110001]_{4,3}) \\ ([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{array}$$

$$\begin{array}{c}([110001]_{3,4}) \\ ([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{array} \times \begin{array}{c}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{4,3})\end{array}$$

Interpretative action

$$\begin{array}{c}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{array}$$

$$\begin{array}{c}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{array}$$

$$([010001]_{2,4}) \qquad\qquad ([101001]_{3,2})$$
$$([110001]_{3,4}) \gg \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \succ ([110001]_{4,3})$$
$$([101001]_{2,3}) \qquad\qquad ([010001]_{4,2})$$

$$([101001]_{2,3}) \qquad\qquad ([110001]_{4,3})$$
$$([010001]_{2,4}) \gg \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \succ ([010001]_{4,2})$$
$$([110001]_{3,4}) \qquad\qquad ([101001]_{3,2})$$

$$([110001]_{3,4}) \qquad\qquad ([101001]_{3,2})$$
$$([010001]_{2,4}) \gg \succ ([110001]_{3,4}) \quad \times \quad ([110001]_{4,3}) \gg \succ ([010001]_{4,2})$$
$$([101001]_{2,3}) \qquad\qquad ([110001]_{4,3})$$

11. Pre-semiotic dual system

$([010001]_{2,4}\,[010010]_{1,2,4}\,[110010]_{1,4}\,[101010]_{1,2}) \times$
$([101010]_{2,1}\,[110010]_{4,1}\,[010010]_{4,2,1}\,[010001]_{4,2})$

Qualitative action

$$([010001]_{2,4}) \qquad\qquad ([010010]_{4,2,1})$$
$$([110010]_{1,4}) \gg \succ ([101010]_{1,2}) \quad \times \quad ([101010]_{2,1}) \gg \succ ([110010]_{4,1})$$
$$([010010]_{1,2,4}) \qquad\qquad ([010001]_{4,2})$$

$$([010010]_{1,2,4}) \qquad\qquad ([010001]_{4,2})$$
$$([110010]_{1,4}) \gg \succ ([101010]_{1,2}) \quad \times \quad ([101010]_{2,1}) \gg \succ ([110010]_{4,1})$$
$$([010001]_{2,4}) \qquad\qquad ([010010]_{4,2,1})$$

$$([010001]_{2,4}) \qquad\qquad ([110010]_{4,1})$$
$$([010010]_{1,2,4}) \gg \succ ([101010]_{1,2}) \quad \times \quad ([101010]_{2,1}) \gg \succ ([010010]_{4,2,1})$$
$$([110010]_{1,4}) \qquad\qquad ([010001]_{4,2})$$

$$([110010]_{1,4}) \qquad\qquad ([010001]_{4,2})$$
$$([010010]_{1,2,4}) \gg \succ ([101010]_{1,2}) \quad \times \quad ([101010]_{2,1}) \gg \succ ([010010]_{4,2,1})$$
$$([010001]_{2,4}) \qquad\qquad ([110010]_{4,1})$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101010]_{1,2}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101010]_{2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([010001]_{2,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101010]_{1,2}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101010]_{2,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101010]_{1,2}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101010]_{2,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101010]_{1,2})\end{matrix} \times \begin{matrix}([101010]_{2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

Objectal action

$$([010001]_{2,4})\quad\quad([110010]_{4,1})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4})\quad\quad([010001]_{4,2})$$

$$([110010]_{1,4})\quad\quad([010001]_{4,2})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([010001]_{2,4})\quad\quad([110010]_{4,1})$$

$$([101010]_{1,2})\quad\quad([010001]_{4,2})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([010001]_{2,4})\quad\quad([101010]_{2,1})$$

$$([010001]_{2,4})\quad\quad([101010]_{2,1})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2})\quad\quad([010001]_{4,2})$$

$$([101010]_{1,2})\quad\quad([110010]_{4,1})$$
$$([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2})$$
$$([110010]_{1,2,4})\quad\quad([101010]_{2,1})$$

$$([110010]_{1,4})\quad\quad([101010]_{2,1})$$
$$([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \times ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2})$$
$$([101010]_{1,2})\quad\quad([110010]_{4,1})$$

Interpretative action

$$([010010]_{1,2,4})\quad\quad([110010]_{4,1})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010001]_{2,4}) \times ([010001]_{4,2}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([110010]_{1,4})\quad\quad([010010]_{4,2,1})$$

$$([110010]_{1,4})\quad\quad([010010]_{4,2,1})$$
$$([101010]_{1,2}) \gg \curlyvee \succ ([010001]_{2,4}) \times ([010001]_{4,2}) \gg \curlyvee \succ ([101010]_{2,1})$$
$$([010010]_{1,2,4})\quad\quad([110010]_{4,1})$$

$$([101010]_{1,2})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([010010]_{1,2,4}) \qquad\qquad ([101010]_{2,1})$$

$$([010010]_{1,2,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([101010]_{1,2}) \qquad\qquad ([010010]_{4,2,1})$$

$$([101010]_{1,2})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([110010]_{1,4}) \qquad\qquad ([101010]_{2,1})$$

$$([110010]_{1,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([101010]_{1,2}) \qquad\qquad ([110010]_{4,1})$$

12. Pre-semiotic dual system

$([010001]_{2,4}\ [010010]_{1,2,4}\ [110010]_{1,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110010]_{4,1}\ [010010]_{4,2,1}\ [010001]_{4,2})$

Qualitative action

$$([010001]_{2,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \quad \times \quad ([010010]_{4,2,1})$$
$$([010010]_{1,2,4}) \qquad\qquad ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([010001]_{4,2})$$

$$([010010]_{1,2,4})$$
$$([110010]_{1,4}) \gg \curlyvee \succ ([101001]_{2,3}) \quad \times \quad ([010001]_{4,2})$$
$$([010001]_{2,4}) \qquad\qquad ([101001]_{3,2}) \gg \curlyvee \succ ([110010]_{4,1})$$
$$([010010]_{4,2,1})$$

$$([010001]_{2,4})$$
$$([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \quad \times \quad ([110010]_{4,1})$$
$$([110010]_{1,4}) \qquad\qquad ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1})$$
$$([010001]_{4,2})$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110010]_{1,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110010]_{4,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

Objectal action

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([110010]_{1,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110010]_{4,1}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110010]_{4,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([101001]_{2,3}) \gg \succ ([010001]_{2,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([010001]_{4,2}) \gg \succ ([101001]_{3,2}) \\ ([110010]_{4,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110010]_{1,4}) \gg \succ ([010001]_{2,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([010001]_{4,2}) \gg \succ ([110010]_{4,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110010]_{1,4}) \gg \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \succ ([110010]_{4,1}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \succ ([010001]_{2,4}) \\ ([110010]_{1,4})\end{matrix} \times \begin{matrix}([110010]_{4,1}) \\ ([010001]_{4,2}) \gg \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([110010]_{1,4}) \\ ([010010]_{1,2,4}) \gg \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \succ ([010010]_{4,2,1}) \\ ([110010]_{4,1})\end{matrix}$$

13. Pre-semiotic dual system

$([010001]_{2,4}\ [010010]_{1,2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010010]_{4,2,1}\ [010001]_{4,2})$

Qualitative action

$$\begin{matrix}([010001]_{2,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{2,3}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \gg \succ ([110001]_{4,3}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([110001]_{3,4}) \gg \succ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \gg \succ ([110001]_{4,3}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

Medial action

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4})\end{matrix} \times \begin{matrix}([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([010010]_{1,2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010010]_{1,2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010010]_{4,2,1}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix} ([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010010]_{1,2,4}) \end{matrix} \times \begin{matrix} ([010010]_{4,2,1}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2}) \end{matrix}$$

$$\begin{matrix} ([010010]_{1,2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3}) \end{matrix} \times \begin{matrix} ([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010010]_{4,2,1}) \end{matrix}$$

Objectal action

$$\begin{matrix} ([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2}) \end{matrix}$$

$$\begin{matrix} ([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([010001]_{2,4}) \end{matrix} \times \begin{matrix} ([010001]_{4,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3}) \end{matrix}$$

$$\begin{matrix} ([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([010001]_{2,4}) \end{matrix} \times \begin{matrix} ([010001]_{4,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2}) \end{matrix}$$

$$\begin{matrix} ([010001]_{2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3}) \end{matrix} \times \begin{matrix} ([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010001]_{4,2}) \end{matrix}$$

$$\begin{matrix} ([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([110001]_{3,4}) \end{matrix} \times \begin{matrix} ([110001]_{4,3}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2}) \end{matrix}$$

$$\begin{matrix} ([110001]_{3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([010010]_{1,2,4}) \\ ([101001]_{2,3}) \end{matrix} \times \begin{matrix} ([101001]_{3,2}) \\ ([010010]_{4,2,1}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110001]_{4,3}) \end{matrix}$$

Interpretative action

$$([101001]_{2,3}) \gg \curlyvee \succ \begin{pmatrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{pmatrix}$$

$$([101001]_{2,3}) \gg \curlyvee \succ \begin{pmatrix}([110001]_{3,4}) \\ ([010001]_{2,4}) \\ ([010010]_{1,2,4})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{pmatrix}$$

$$([110001]_{3,4}) \gg \curlyvee \succ \begin{pmatrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \\ ([010010]_{1,2,4})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([010010]_{4,2,1}) \\ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{pmatrix}$$

$$([110001]_{3,4}) \gg \curlyvee \succ \begin{pmatrix}([010010]_{1,2,4}) \\ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \\ ([010010]_{4,2,1})\end{pmatrix}$$

$$([010010]_{1,2,4}) \gg \curlyvee \succ \begin{pmatrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \\ ([010010]_{4,2,1})\end{pmatrix}$$

$$([010010]_{1,2,4}) \gg \curlyvee \succ \begin{pmatrix}([110001]_{3,4}) \\ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \\ ([110001]_{4,3})\end{pmatrix}$$

14. Pre-semiotic dual system

$([010001]_{2,4}\ [010001]_{2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010001]_{4,2}\ [010001]_{4,2})$

Qualitative action

$$([110001]_{3,4}) \gg \curlyvee \succ \begin{pmatrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{pmatrix} \times ([010001]_{4,2}) \gg \curlyvee \succ \begin{pmatrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{pmatrix}$$

$$\begin{array}{c}([010001]_{2,4})\\([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3})\\([010001]_{4,2})\end{array}$$

$$\begin{array}{c}([010001]_{2,4})\\([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3})\\([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2})\\([010001]_{4,2})\end{array}$$

$$\begin{array}{c}([110001]_{3,4})\\([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2})\\([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([110001]_{3,4})\\([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2})\\([110001]_{4,3})\end{array}$$

$$\begin{array}{c}([010001]_{2,4})\\([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3})\\([110001]_{3,4})\end{array} \times \begin{array}{c}([110001]_{4,3})\\([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2})\\([010001]_{4,2})\end{array}$$

Medial action

$$\begin{array}{c}([010001]_{2,4})\\([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2})\\([010001]_{4,2})\end{array}$$

$$\begin{array}{c}([010001]_{2,4})\\([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2})\\([010001]_{4,2})\end{array}$$

$$\begin{array}{c}([101001]_{2,3})\\([010001]_{2,4}) \gg \curlyvee \succ [110001]_{3,4})\\([010001]_{2,4})\end{array} \times \begin{array}{c}([010001]_{4,2})\\([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2})\\([101001]_{3,2})\end{array}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([010001]_{4,2})\end{matrix}$$

Objectal action

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$([110001]_{3,4})$$
$$([010001]_{2,4}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([010001]_{4,2})$$
$$([101001]_{2,3}) \qquad\qquad ([110001]_{4,3})$$

Interpretative action

$$([010001]_{2,4}) \qquad\qquad ([110001]_{4,3})$$
$$([101001]_{2,3}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([101001]_{3,2})$$
$$([110001]_{3,4}) \qquad\qquad ([010001]_{4,2})$$

$$([110001]_{3,4}) \qquad\qquad ([010001]_{4,2})$$
$$([101001]_{2,3}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([101001]_{3,2})$$
$$([010001]_{2,4}) \qquad\qquad ([110001]_{4,3})$$

$$([101001]_{2,3}) \qquad\qquad ([010001]_{4,2})$$
$$([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([110001]_{4,3})$$
$$([010001]_{2,4}) \qquad\qquad ([101001]_{3,2})$$

$$([010001]_{2,4}) \qquad\qquad ([101001]_{3,2})$$
$$([110001]_{3,4}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([110001]_{4,3})$$
$$([101001]_{2,3}) \qquad\qquad ([010001]_{4,2})$$

$$([101001]_{2,3}) \qquad\qquad ([110001]_{4,3})$$
$$([010001]_{2,4}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([010001]_{4,2})$$
$$([110001]_{3,4}) \qquad\qquad ([101001]_{3,2})$$

$$([110001]_{3,4}) \qquad\qquad ([101001]_{3,2})$$
$$([010001]_{2,4}) \gg \succ ([010001]_{2,4}) \quad \times \quad ([010001]_{4,2}) \gg \succ ([010001]_{4,2})$$
$$([101001]_{2,3}) \qquad\qquad ([110001]_{4,3})$$

15. Pre-semiotic dual system

$([001001]_{2,3,4}\ [010001]_{2,4}\ [110001]_{3,4}\ [101001]_{2,3}) \times$
$([101001]_{3,2}\ [110001]_{4,3}\ [010001]_{4,2}\ [001001]_{4,3,2})$

Qualitative action

$$\begin{matrix}([001001]_{2,3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([001001]_{2,3,4})\end{matrix} \times \begin{matrix}([001001]_{4,3,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([001001]_{2,3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([001001]_{2,3,4})\end{matrix} \times \begin{matrix}([001001]_{4,3,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([001001]_{2,3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([001001]_{4,3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([001001]_{2,3,4}) \gg \curlyvee \succ ([101001]_{2,3}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([101001]_{3,2}) \gg \curlyvee \succ ([001001]_{4,3,2}) \\ ([010001]_{4,2})\end{matrix}$$

Medial action

$$\begin{matrix}([001001]_{2,3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([010001]_{4,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([001001]_{2,3,4}) \\ ([010001]_{2,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([010001]_{4,2}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([001001]_{2,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([010001]_{2,4})\end{matrix} \times \begin{matrix}([010001]_{4,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([001001]_{4,3,2}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([010001]_{2,4}) \\ ([001001]_{2,3,4}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([110001]_{4,3}) \gg \curlyvee \succ ([001001]_{4,3,2}) \\ ([010001]_{4,2})\end{matrix}$$

Objectal action

$$\begin{matrix}([001001]_{2,3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([110001]_{3,4})\end{matrix} \times \begin{matrix}([110001]_{4,3}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$\begin{matrix}([110001]_{3,4}) \\ ([101001]_{2,3}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([001001]_{2,3,4})\end{matrix} \times \begin{matrix}([001001]_{4,3,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([101001]_{3,2}) \\ ([110001]_{4,3})\end{matrix}$$

$$\begin{matrix}([101001]_{2,3}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([001001]_{2,3,4})\end{matrix} \times \begin{matrix}([001001]_{4,3,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([110001]_{4,3}) \\ ([101001]_{3,2})\end{matrix}$$

$$\begin{matrix}([001001]_{2,3,4}) \\ ([110001]_{3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \\ ([101001]_{2,3})\end{matrix} \times \begin{matrix}([101001]_{3,2}) \\ ([010001]_{4,2}) \gg \curlyvee \succ ([110001]_{3,4}) \\ ([001001]_{4,3,2})\end{matrix}$$

$$([101001]_{2,3})$$
$$([001001]_{2,3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \times ([010001]_{4,2}) \gg \curlyvee \succ ([001001]_{2,3,4})$$
$$([110001]_{3,4})$$

$$([110001]_{4,3})$$
$$([101001]_{3,2})$$

$$([110001]_{3,4})$$
$$([001001]_{2,3,4}) \gg \curlyvee \succ ([010001]_{2,4}) \times ([010001]_{4,2}) \gg \curlyvee \succ ([001001]_{4,3,2})$$
$$([101001]_{2,3})$$

$$([101001]_{3,2})$$
$$([110001]_{4,3})$$

Interpretative action

$$([010001]_{2,4})$$
$$([101001]_{2,3}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([101001]_{3,2})$$
$$([110001]_{3,4})$$

$$([110001]_{4,3})$$
$$([010001]_{4,2})$$

$$([110001]_{3,4})$$
$$([101001]_{2,3}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([101001]_{3,2})$$
$$([010001]_{2,4})$$

$$([010001]_{4,2})$$
$$([110001]_{4,3})$$

$$([101001]_{2,3})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([010001]_{2,4})$$

$$([010001]_{4,2})$$
$$([101001]_{3,2})$$

$$([010001]_{2,4})$$
$$([110001]_{3,4}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([110001]_{4,3})$$
$$([101001]_{2,3})$$

$$([101001]_{3,2})$$
$$([010001]_{4,2})$$

$$([101001]_{2,3})$$
$$([010001]_{2,4}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([010001]_{4,2})$$
$$([110001]_{3,4})$$

$$([110001]_{4,3})$$
$$([101001]_{3,2})$$

$$([110001]_{3,4})$$
$$([010001]_{2,4}) \gg \curlyvee \succ ([001001]_{2,3,4}) \times ([001001]_{4,3,2}) \gg \curlyvee \succ ([010001]_{4,2})$$
$$([101001]_{2,3})$$

$$([101001]_{3,2})$$
$$([110001]_{4,3})$$

Chapter Nine: The Qualitative Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
(Ø ◻ ⊏ —) × (— ⊏ ◻ Ø)

Qualitative action

(◻) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (◻)

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(⊏) (◻)
ʌ ≫ (—) × ʌ ≫ (—)
(◻) (⊏)

(Ø) (◻)
ʌ ≫ (—) × ʌ ≫ (—)
(◻) (Ø)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

(◻) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (◻)

Medial action

(◻) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (◻)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Objectal action

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

Interpretative action

(□) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (□)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(—) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (—)

2. Pre-semiotic dual system

(Ø □ ⊏ ⊔) × (⊔ ⊏ □ Ø)

Qualitative action

(□) (⊏)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(⊏) (Ø)

(⊏) (◻)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(◻) (⊏)

(Ø) (◻)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(◻) (Ø)

(⊏) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (⊏)

(◻) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (◻)

Medial action

(◻) (⊔)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊔) (◻)

(Ø) (⊔)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊔) (Ø)

(⊔) (◻)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(◻) (⊔)

(Ø) (◻)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(◻) (Ø)

(⊔) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (⊔)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Objectal action

(⊏) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (⊏)

(Ø) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (Ø)

(⊔) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (⊔)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(⊔) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊔)

Interpretative action

(□) (⊔)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (□)

(⊏) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (⊔)

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(⊔) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (⊔)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(⊔) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊔)

3. Pre-semiotic dual system
(Ø □ ⊏ ⊏) × (⊏ ⊏ □ Ø)

Qualitative action

(□) (⊏)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (⊏)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(⊏) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Medial action

(□) (⊏)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (⊏)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(⊏) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Objectal action

(⊏) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (⊏)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏)
ʌ ≫ (□)
(⊏)

×

(⊏)
ʌ ≫ (□)
(⊏)

(Ø)
ʌ ≫ (□)
(⊏)

×

(⊏)
ʌ ≫ (□)
(Ø)

(⊏)
ʌ ≫ (□)
(Ø)

×

(Ø)
ʌ ≫ (□)
(⊏)

(⊏)
ʌ ≫ (□)
(Ø)

×

(Ø)
ʌ ≫ (□)
(⊏)

Interpretative action

(□)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(□)

(⊏)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(⊏)

(□)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(□)

(⊏)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(⊏)

(⊏)
ʌ ≫ (Ø)
(□)

×

(□)
ʌ ≫ (Ø)
(⊏)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

4. Pre-semiotic dual system
(Ø □ □ ⊔) × (⊔ □ □ Ø)

Qualitative action

(□) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (□)

(Ø) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (Ø)

(□) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (□)

(Ø) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (Ø)

(□) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (□)

(□) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (□)

Medial action

(□) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (□)

(Ø) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (Ø)

(⊔) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊔)

(Ø) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (Ø)

(⊔) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊔)

(□) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (□)

Objectal action

(□) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (□)

(Ø) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (Ø)

(⊔) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊔)

(Ø) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (Ø)

(□) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (□)

(⊔) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊔)

Interpretative action

(□) (⊔)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (□)

(□) (⊔)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (□)

(□) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (□)

(⊔) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊔)

(□) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (□)

(⊔) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊔)

5. Pre-semiotic dual system
(Ø □ □ ⊏) × (⊏ □ □ Ø)

Qualitative action

(□) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (□)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(□) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (□)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Medial action

(□) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊏)

(Ø) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (Ø)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (□)

Objectal action

(□) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊏)

(Ø) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (Ø)

(□) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (□)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

Interpretative action

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(□) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (□)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(□) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (□)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

6. Pre-semiotic dual system
(Ø □ Ø ⊏) × (⊏ Ø □ Ø)

Qualitative action

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

Medial action

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(Ø) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (Ø)

(⊏) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (□)

Objectal action

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏)　　(Ø)
ʌ ≫ (□)　×　ʌ ≫ (□)
(Ø)　　(⊏)

(Ø)　　(Ø)
ʌ ≫ (□)　×　ʌ ≫ (□)
(Ø)　　(Ø)

(Ø)　　(Ø)
ʌ ≫ (□)　×　ʌ ≫ (□)
(Ø)　　(Ø)

(⊏)　　(Ø)
ʌ ≫ (□)　×　ʌ ≫ (□)
(Ø)　　(⊏)

Interpretative action

(□)　　(⊏)
ʌ ≫ (Ø)　×　ʌ ≫ (Ø)
(⊏)　　(□)

(Ø)　　(⊏)
ʌ ≫ (Ø)　×　ʌ ≫ (Ø)
(⊏)　　(Ø)

(□)　　(Ø)
ʌ ≫ (Ø)　×　ʌ ≫ (Ø)
(Ø)　　(□)

(⊏)　　(Ø)
ʌ ≫ (Ø)　×　ʌ ≫ (Ø)
(Ø)　　(⊏)

(Ø)　　(□)
ʌ ≫ (Ø)　×　ʌ ≫ (Ø)
(□)　　(Ø)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

7. Pre-semiotic dual system
(Ø — □ ⊔) × (⊔ □ — Ø)

Qualitative action

(—) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (—)

(Ø) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (Ø)

(□) (—)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(—) (□)

(Ø) (—)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(—) (Ø)

(□) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (□)

(—) (Ø)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(Ø) (—)

Medial action

(—) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (—)

(Ø) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (Ø)

(⊔) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊔)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(⊔) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊔)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

Objectal action

(□) (⊔)
ʌ ≫ (—) × ʌ ≫ (—)
(⊔) (□)

(Ø) (⊔)
ʌ ≫ (—) × ʌ ≫ (—)
(⊔) (Ø)

(⊔) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊔)

(Ø) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (Ø)

(□) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (□)

(⊔) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊔)

Interpretative action

(—) (⊔)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (—)

(□) (⊔)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊔) (□)

(—) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (—)

(⊔) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊔)

(□) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (□)

(⊔) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊔)

8. Pre-semiotic dual system
(Ø — □ ⊏) × (⊏ □ — Ø)

Qualitative action

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(□) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (□)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

Medial action

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

Objectal action

(□) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (□)

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(⊏) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊏)

(Ø) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (Ø)

(□) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (□)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

Interpretative action

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(—) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (—)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(□) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (□)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

9. Pre-semiotic dual system
(Ø — Ø ⊏) × (⊏ Ø — Ø)

Qualitative action

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

Medial action

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (Ø)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

(Ø) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (Ø)

(⊏) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (⊏)

(—) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (—)

Objectal action

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(⊏)　　(Ø)
ʌ ≫ (—)　　×　　ʌ ≫ (—)
(Ø)　　(⊏)

(Ø)　　(Ø)
ʌ ≫ (—)　　×　　ʌ ≫ (—)
(Ø)　　(Ø)

(Ø)　　(Ø)
ʌ ≫ (—)　　×　　ʌ ≫ (—)
(Ø)　　(Ø)

(⊏)　　(Ø)
ʌ ≫ (—)　　×　　ʌ ≫ (—)
(Ø)　　(⊏)

Interpretative action

(—)　　(⊏)
ʌ ≫ (Ø)　　×　　ʌ ≫ (Ø)
(⊏)　　(—)

(Ø)　　(⊏)
ʌ ≫ (Ø)　　×　　ʌ ≫ (Ø)
(⊏)　　(Ø)

(—)　　(Ø)
ʌ ≫ (Ø)　　×　　ʌ ≫ (Ø)
(Ø)　　(—)

(⊏)　　(Ø)
ʌ ≫ (Ø)　　×　　ʌ ≫ (Ø)
(Ø)　　(⊏)

(Ø)　　(—)
ʌ ≫ (Ø)　　×　　ʌ ≫ (Ø)
(—)　　(⊏)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

10. Pre-semiotic dual system
(Ø — Ø ⊏) × (⊏ Ø — Ø)

Qualitative action

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(Ø) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (Ø)

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

Medial action

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (Ø)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

(Ø) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (Ø)

(⊏) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (⊏)

(—) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (—)

Objectal action

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

(Ø) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (Ø)

(Ø) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (Ø)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

Interpretative action

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (Ø)

(—) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (—)

(⊏) (Ø)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(Ø) (⊏)

(Ø) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (Ø)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

11. Pre-semiotic dual system
(□ — □ ⊔) × (⊔ □ — □)

Qualitative action

(—) (□)
ʌ ≫ (⊔) × ʌ ≫ (⊔)
(□) (—)

(□)　　(□)
ㅅ ≫ (⊔)　×　ㅅ ≫ (⊔)
(□)　　(□)

(□)　　(—)
ㅅ ≫ (⊔)　×　ㅅ ≫ (⊔)
(—)　　(□)

(□)　　(□)
ㅅ ≫ (⊔)　×　ㅅ ≫ (⊔)
(—)　　(—)

(□)　　(□)
ㅅ ≫ (⊔)　×　ㅅ ≫ (⊔)
(□)　　(□)

(—)　　(□)
ㅅ ≫ (⊔)　×　ㅅ ≫ (⊔)
(□)　　(—)

Medial action

(□)　　(⊔)
ㅅ ≫ (□)　×　ㅅ ≫ (□)
(⊔)　　(□)

(□)　　(⊔)
ㅅ ≫ (□)　×　ㅅ ≫ (□)
(⊔)　　(□)

(⊔)　　(—)
ㅅ ≫ (□)　×　ㅅ ≫ (□)
(—)　　(⊔)

(□)　　(□)
ㅅ ≫ (□)　×　ㅅ ≫ (□)
(—)　　(—)

(⊔)　　(□)
ㅅ ≫ (□)　×　ㅅ ≫ (□)
(□)　　(⊔)

(—) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (—)

Objectal action

(□) (⊔)
ʌ ≫ (—) × ʌ ≫ (—)
(⊔) (□)

(□) (⊔)
ʌ ≫ (—) × ʌ ≫ (—)
(⊔) (□)

(⊔) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊔)

(□) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (□)

(□) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (□)

(⊔) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊔)

Interpretative action

(—) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (—)

(□) (⊔)
ʌ ≫ (□) × ʌ ≫ (□)
(⊔) (□)

(—) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (—)

(⊔) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊔)

(□) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (□)

(⊔) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊔)

12. Pre-semiotic dual system
(□ — □ ⊏) × (⊏ □ — □)

Qualitative action

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

(□) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (□)

(□) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (□)

(□) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (□)

(□) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (□)

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

Medial action

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(□) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (□)

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

(□) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (—)

(⊏) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (⊏)

(—) (□)
ʌ ≫ (□) × ʌ ≫ (□)
(□) (—)

Objectal action

(□) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (□)

(□) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (—)

(⊏)　　(□)
ʌ ≫ (—)　×　ʌ ≫ (—)
(□)　　(⊏)

(□)　　(□)
ʌ ≫ (—)　×　ʌ ≫ (—)
(□)　　(□)

(□)　　(□)
ʌ ≫ (—)　×　ʌ ≫ (—)
(□)　　(□)

(⊏)　　(□)
ʌ ≫ (—)　×　ʌ ≫ (—)
(□)　　(⊏)

Interpretative action

(—)　　(⊏)
ʌ ≫ (□)　×　ʌ ≫ (□)
(⊏)　　(—)

(□)　　(⊏)
ʌ ≫ (□)　×　ʌ ≫ (□)
(⊏)　　(□)

(—)　　(□)
ʌ ≫ (□)　×　ʌ ≫ (□)
(□)　　(—)

(⊏)　　(□)
ʌ ≫ (□)　×　ʌ ≫ (□)
(□)　　(⊏)

(□)　　(—)
ʌ ≫ (□)　×　ʌ ≫ (□)
(—)　　(□)

(⊏)　　(—)
ʌ ≫ (□)　×　ʌ ≫ (□)
(—)　　(⊏)

13. Pre-semiotic dual system
(□ — Ø ⊏) × (⊏ Ø — □)

Qualitative action

(—)
ʌ ≫ (⊏)
(Ø)

×

(Ø)
ʌ ≫ (⊏)
(—)

(□)
ʌ ≫ (⊏)
(Ø)

×

(Ø)
ʌ ≫ (⊏)
(□)

(Ø)
ʌ ≫ (⊏)
(—)

×

(—)
ʌ ≫ (⊏)
(Ø)

(□)
ʌ ≫ (⊏)
(—)

×

(—)
ʌ ≫ (⊏)
(□)

(Ø)
ʌ ≫ (⊏)
(□)

×

(□)
ʌ ≫ (⊏)
(Ø)

(—)
ʌ ≫ (⊏)
(□)

×

(□)
ʌ ≫ (⊏)
(—)

Medial action

(—)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(—)

(□)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(□)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

(□) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (□)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(—) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (—)

Objectal action

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(□) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (□)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (□)

(Ø) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (Ø)

(⊏) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊏)

Interpretative action

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

14. Pre-semiotic dual system
(□ — Ø ⊏) × (⊏ Ø — □)

Qualitative action

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (□)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(□) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (□)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

Medial action

(—) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (—)

(□) (⊏)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(⊏) (□)

(⊏) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (⊏)

(□) (—)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(—) (□)

(⊏) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (⊏)

(—) (□)
ʌ ≫ (Ø) × ʌ ≫ (Ø)
(□) (—)

Objectal action

(Ø) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (Ø)

(□) (⊏)
ʌ ≫ (—) × ʌ ≫ (—)
(⊏) (□)

(⊏) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (⊏)

(□) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (□)

(Ø) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (Ø)

(⊏) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊏)

Interpretative action

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

15. Pre-semiotical dual system
(□ — Ø ⊏) × (⊏ Ø — □)

Qualitative action

(—) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(□) (Ø)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(Ø) (—)

(Ø) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (Ø)

(□) (—)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(—) (□)

(Ø) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (Ø)

(—) (□)
ʌ ≫ (⊏) × ʌ ≫ (⊏)
(□) (—)

Medial action

(—)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(—)

(□)
ʌ ≫ (Ø)
(⊏)

×

(⊏)
ʌ ≫ (Ø)
(□)

(⊏)
ʌ ≫ (Ø)
(—)

×

(—)
ʌ ≫ (Ø)
(⊏)

(□)
ʌ ≫ (Ø)
(—)

×

(—)
ʌ ≫ (Ø)
(□)

(⊏)
ʌ ≫ (Ø)
(□)

×

(□)
ʌ ≫ (Ø)
(⊏)

(—)
ʌ ≫ (Ø)
(□)

×

(□)
ʌ ≫ (Ø)
(—)

Objectal action

(Ø)
ʌ ≫ (—)
(⊏)

×

(⊏)
ʌ ≫ (—)
(Ø)

(□)
ʌ ≫ (—)
(⊏)

×

(⊏)
ʌ ≫ (—)
(□)

(⊏)
ʌ ≫ (—)
(Ø)

×

(Ø)
ʌ ≫ (—)
(⊏)

(□) (Ø)
ʌ ≫ (—) × ʌ ≫ (—)
(Ø) (□)

(Ø) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (Ø)

(⊏) (□)
ʌ ≫ (—) × ʌ ≫ (—)
(□) (⊏)

Interpretative action

(—) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (—)

(Ø) (⊏)
ʌ ≫ (□) × ʌ ≫ (□)
(⊏) (Ø)

(—) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (—)

(⊏) (Ø)
ʌ ≫ (□) × ʌ ≫ (□)
(Ø) (⊏)

(Ø) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (Ø)

(⊏) (—)
ʌ ≫ (□) × ʌ ≫ (□)
(—) (⊏)

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(Ø ◻ ⊏ —) × (— ⊏ ◻ Ø)

Qualitative action

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset)$$

Medial action

$$(—) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\varnothing)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\varnothing)\\ (—)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\varnothing)\\ (\square)\end{matrix}$$

Objectal action

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (—)\\ (\varnothing)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix} \times (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (—)\\ (\sqsubset)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix} \times (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\varnothing)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\varnothing)\\ (—)\end{matrix}$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\emptyset)\\ (\sqsubset)\end{matrix}$$

Interpretative action

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\emptyset)\\ (\sqsubset)\end{matrix} \times (\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\emptyset)\\ (\square)\end{matrix} \times (\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\sqsubset)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\emptyset)\\ (\square)\end{matrix} \times (\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\emptyset)\\ (—)\end{matrix} \times (\emptyset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix}$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\emptyset)\\ (\sqsubset)\end{matrix} \times (\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\emptyset)\\ (—)\end{matrix} \times (\emptyset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix}$$

2. Pre-semiotic dual system
$(\emptyset \square \sqsubset \sqcup) \times (\sqcup \sqsubset \square \emptyset)$

Qualitative action

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (\sqcup)\\ (\square)\end{matrix} \times (\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (\emptyset)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqcup) \quad \times \quad (\sqcup) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqcup) \quad \times \quad (\sqcup) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqcup) \quad \times \quad (\sqcup) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqcup) \quad \times \quad (\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqcup) \quad \times \quad (\sqcup) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing)$$

Medial action

$$(\sqcup) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqcup)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqcup)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqcup)\end{matrix} \succ (\varnothing)$$

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset)$$

Objectal action

$$(\sqcup) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\sqcup)$$

$$(\sqsubset) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\sqsubset)$$

$$(\emptyset) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset)$$

Interpretative action

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\sqcup)$$

$$(\sqsubset) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

3. Pre-semiotic dual system
$(\varnothing \square \sqsubset \sqsubset) \times (\sqsubset \sqsubset \square \varnothing)$

Qualitative action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\emptyset)$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\square)$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\emptyset)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\emptyset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

4. Pre-semiotic dual system
(Ø □ □ ⊔) × (⊔ □ □ Ø)

Qualitative action

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (□)$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee \\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee \\ (□)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee \\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee \\ (□)\end{matrix} \succ (Ø)$$

Medial action

$$(⊔) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊔)$$

$$(⊔) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (⊔)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Objectal action

$$(\sqcup) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Interpretative action

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

5. Pre-semiotic dual system
$(\varnothing \square \square \sqsubset) \times (\sqsubset \square \square \varnothing)$

Qualitative action

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\square)$$

6. Pre-semiotic dual system
$(\varnothing \square \varnothing \sqsubset) \times (\sqsubset \varnothing \square \varnothing)$

Qualitative action

$$(\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing)$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\emptyset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(sS)\\ \curlyvee\\ (oO)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\emptyset)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\sqsubset)$$

$$(\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset)$$

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\emptyset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\emptyset) \quad \times \quad (\emptyset) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\emptyset)\end{matrix} \succ (\square)$$

7. Pre-semiotic dual system
(Ø — □ ⊔) × (⊔ □ — Ø)

Qualitative action

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (□)$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee\\ (Ø)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(□)\\ \curlyvee\\ (Ø)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (□)\end{matrix} \succ (—)$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee\\ (—)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(—)\\ \curlyvee\\ (□)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee\\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø)$$

Medial action

$$(⊔) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (⊔)$$

$$(⊔) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (⊔)$$

$$(—) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (Ø)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (⊔)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (⊔)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (Ø)\end{matrix} \succ (—)$$

$$(Ø) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (—)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(—)\\ \curlyvee\\ (⊔)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee\\ (⊔)\end{matrix} \succ (□) \quad \times \quad (□) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø)$$

Objectal action

$$(⊔) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (□)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(□)\\ \curlyvee\\ (Ø)\end{matrix} \succ (⊔)$$

$$(⊔) \gg \begin{matrix}(□)\\ \curlyvee\\ (Ø)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (□)\end{matrix} \succ (⊔)$$

$$(□) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (Ø)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (⊔)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (⊔)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (Ø)\end{matrix} \succ (□)$$

$$(Ø) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (□)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(□)\\ \curlyvee\\ (⊔)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee\\ (⊔)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(⊔)\\ \curlyvee\\ (□)\end{matrix} \succ (Ø)$$

Interpretative action

$$(\sqcup) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (—)\end{matrix} \succ (\square)$$

$$(—) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (Ø) \quad \times \quad (oS) \gg \begin{matrix}(oO)\\ \curlyvee\\ (sS)\end{matrix} \succ (sO)$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (—)$$

8. Pre-semiotic dual system
$(Ø — \square \sqsubset) \times (\sqsubset \square — Ø)$

Qualitative action

$$(\square) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (\square)$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (⊏)\\ (□)\end{matrix} \quad \times \quad (⊏) \gg \begin{matrix}(□)\\ \curlyvee \succ (—)\\ (Ø)\end{matrix}$$

$$(—) \gg \begin{matrix}(□)\\ \curlyvee \succ (⊏)\\ (Ø)\end{matrix} \quad \times \quad (⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (—)\\ (□)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee \succ (⊏)\\ (—)\end{matrix} \quad \times \quad (⊏) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (□)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (⊏)\\ (□)\end{matrix} \quad \times \quad (⊏) \gg \begin{matrix}(□)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix}$$

Medial action

$$(⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (□)\\ (—)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(—)\\ \curlyvee \succ (⊏)\\ (Ø)\end{matrix}$$

$$(⊏) \gg \begin{matrix}(—)\\ \curlyvee \succ (□)\\ (Ø)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (⊏)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(⊏)\\ \curlyvee \succ (□)\\ (Ø)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (—)\\ (⊏)\end{matrix}$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (□)\\ (⊏)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(⊏)\\ \curlyvee \succ (—)\\ (Ø)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \succ (□)\\ (—)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (⊏)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (□)\\ (⊏)\end{matrix} \quad \times \quad (□) \gg \begin{matrix}(⊏)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix}$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (\sqsubset)\end{matrix} \times (Ø) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (Ø)\\ (\square)\end{matrix} \times (Ø) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\sqsubset)\end{matrix}$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (Ø)\\ (\sqsubset)\end{matrix} \times (Ø) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

9. Pre-semiotic dual system
$(Ø — Ø \sqsubset) \times (\sqsubset Ø — Ø)$

Qualitative action

$$(Ø) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (Ø)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (Ø)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (\sqsubset)\\ (Ø)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (—)\\ (Ø)\end{matrix}$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (\sqsubset)\\ (Ø)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (—)\\ (Ø)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (Ø)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (Ø)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix}$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing S)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (—)$$

10. Pre-semiotic dual system
(Ø — Ø ⊏) × (⊏ Ø — Ø)

Qualitative action

$$(Ø) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (⊏) \\ (—) \end{matrix} \times (⊏) \gg \begin{matrix} (—) \\ \curlyvee \succ (Ø) \\ (Ø) \end{matrix}$$

$$(Ø) \gg \begin{matrix} (—) \\ \curlyvee \succ (⊏) \\ (Ø) \end{matrix} \times (⊏) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (Ø) \\ (—) \end{matrix}$$

$$(—) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (⊏) \\ (Ø) \end{matrix} \times (⊏) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (—) \\ (Ø) \end{matrix}$$

$$(—) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (⊏) \\ (Ø) \end{matrix} \times (⊏) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (—) \\ (Ø) \end{matrix}$$

$$(Ø) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (⊏) \\ (—) \end{matrix} \times (⊏) \gg \begin{matrix} (—) \\ \curlyvee \succ (Ø) \\ (Ø) \end{matrix}$$

$$(Ø) \gg \begin{matrix} (—) \\ \curlyvee \succ (⊏) \\ (Ø) \end{matrix} \times (⊏) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (Ø) \\ (—) \end{matrix}$$

Medial action

$$(⊏) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (Ø) \\ (—) \end{matrix} \times (Ø) \gg \begin{matrix} (□) \\ \curlyvee \succ (⊏) \\ (Ø) \end{matrix}$$

$$(⊏) \gg \begin{matrix} (—) \\ \curlyvee \succ (Ø) \\ (Ø) \end{matrix} \times (Ø) \gg \begin{matrix} (Ø) \\ \curlyvee \succ (⊏) \\ (□) \end{matrix}$$

$$(—) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (□)$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (□)$$

$$(Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(□)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (□)\end{matrix} \succ (Ø)$$

Objectal action

$$(⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊏)$$

$$(⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊏)$$

$$(Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (—) \quad \times \quad (□) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (Ø)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (Ø)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (□)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(□)\\ \curlyvee\\ (Ø)\end{matrix} \succ (\sqsubset)$$

$$(Ø) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(□)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (□)\end{matrix} \succ (Ø)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (Ø)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (□)$$

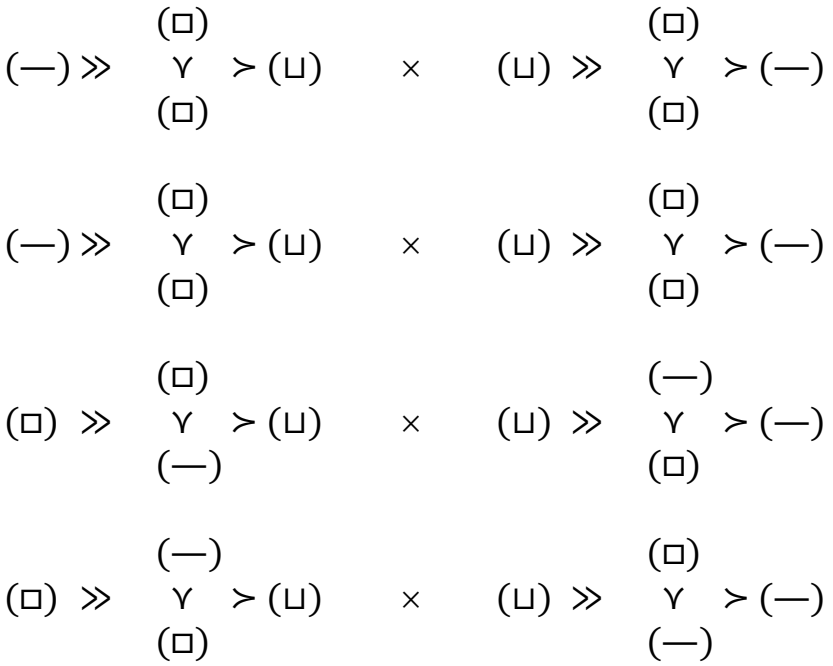
$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (Ø)\end{matrix} \succ (□)$$

11. Pre-semiotic dual system
$(□ — □ ⊔) \times (⊔ □ — □)$

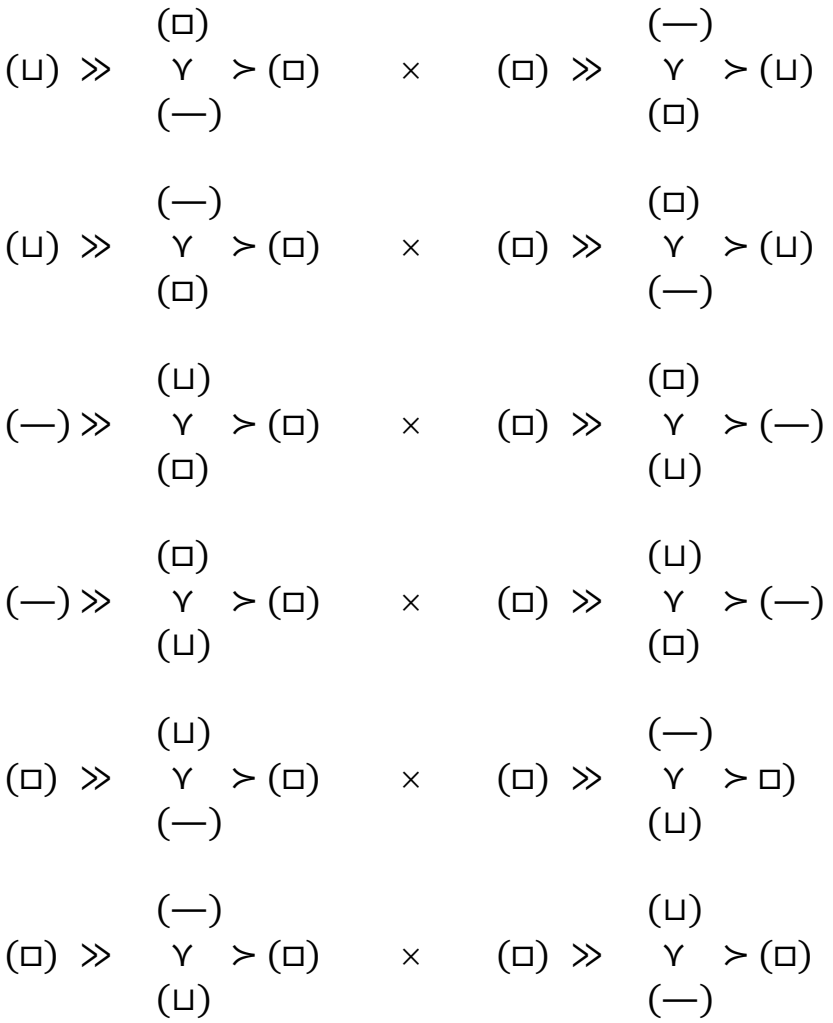
Qualitative action

$$(□) \gg \begin{matrix}(□)\\ \curlyvee\\ (—)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(—)\\ \curlyvee\\ (□)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(—)\\ \curlyvee\\ (□)\end{matrix} \succ (⊔) \quad \times \quad (⊔) \gg \begin{matrix}(□)\\ \curlyvee\\ (—)\end{matrix} \succ (□)$$



Medial action



Objectal action

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square)$$

Interpretative action

$$(\sqcup) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqcup)$$

$$(\sqcup) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqcup)$$

$$(\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee\\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqcup)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\sqcup)\end{matrix} \times (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqcup)\\ \curlyvee \succ (\square)\\ (\square)\end{matrix} \times (\square) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\sqcup)\end{matrix}$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\square)\\ (\sqcup)\end{matrix} \times (\square) \gg \begin{matrix}(\sqcup)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

12. Pre-semiotic dual system
$(\square — \square \sqsubset) \times (\sqsubset \square — \square)$

Qualitative action

$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\square)\end{matrix}$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

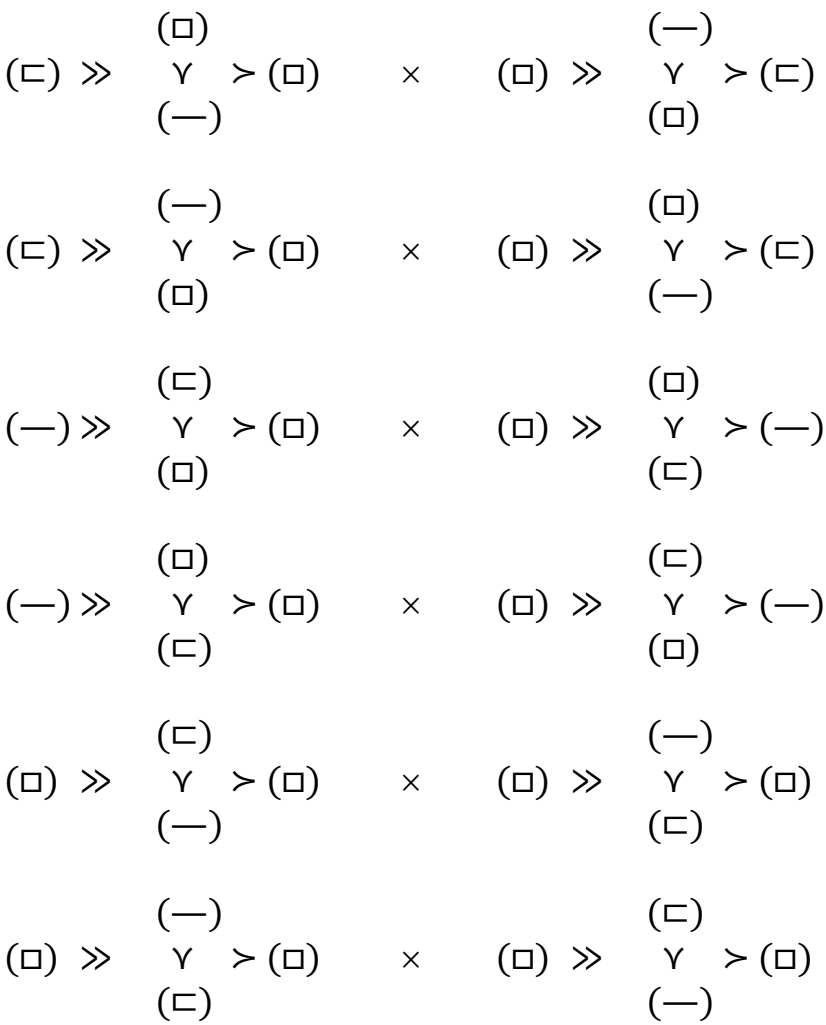
$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

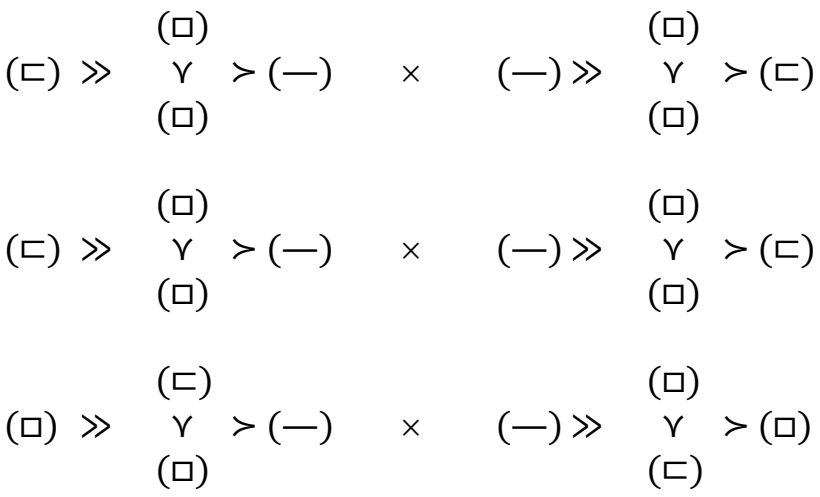
$$(\square) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\square)\end{matrix}$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

Medial action



Objectal action



(□) (□)
(□) ≫ ϒ ≻ (—) × (—) ≫ ϒ ≻ (□)
(⊏) (□)

(□) (⊏)
(□) ≫ ϒ ≻ (—) × (—) ≫ ϒ ≻ (□)
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(□) (⊏)
(□) ≫ ϒ ≻ (—) × (—) ≫ ϒ ≻ (□)
(⊏) (□)

Interpretative action

(—) (□)
(⊏) ≫ ϒ ≻ (□) × (□) ≫ ϒ ≻ (⊏)
(□) (—)

(□) (—)
(⊏) ≫ ϒ ≻ (□) × (□) ≫ ϒ ≻ (⊏)
(—) (□)

(⊏) (—)
(□) ≫ ϒ ≻ (□) × (□) ≫ ϒ ≻ (□)
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(⊏) (□)
(—) ≫ ϒ ≻ (□) × (□) ≫ ϒ ≻ (—)
(□) (⊏)

(□) (⊏)
(—) ≫ ϒ ≻ (□) × (□) ≫ ϒ ≻ (—)
(⊏) (□)

13. Pre-semiotic dual system
(□ — Ø ⊏) × (⊏ Ø — □)

Qualitative action

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee \succ (⊏)\\ (—)\end{matrix} \times (⊏) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (□)\end{matrix}$$

$$(Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (⊏)\\ (□)\end{matrix} \times (⊏) \gg \begin{matrix}(□)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(□)\\ \curlyvee \succ (⊏)\\ (Ø)\end{matrix} \times (⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (—)\\ (□)\end{matrix}$$

$$(—) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (⊏)\\ (□)\end{matrix} \times (⊏) \gg \begin{matrix}(□)\\ \curlyvee \succ (—)\\ (Ø)\end{matrix}$$

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (⊏)\\ (—)\end{matrix} \times (⊏) \gg \begin{matrix}(—)\\ \curlyvee \succ (□)\\ (Ø)\end{matrix}$$

$$(□) \gg \begin{matrix}(—)\\ \curlyvee \succ (⊏)\\ (Ø)\end{matrix} \times (⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \succ (□)\\ (—)\end{matrix}$$

Medial action

$$(⊏) \gg \begin{matrix}(□)\\ \curlyvee \succ (Ø)\\ (—)\end{matrix} \times (Ø) \gg \begin{matrix}(—)\\ \curlyvee \succ (⊏)\\ (□)\end{matrix}$$

$$(⊏) \gg \begin{matrix}(—)\\ \curlyvee \succ (Ø)\\ (□)\end{matrix} \times (Ø) \gg \begin{matrix}(□)\\ \curlyvee \succ (⊏)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (□)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(□)\\ \curlyvee \\ (⊏)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(□)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (□)\end{matrix} \succ (—)$$

$$(□) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (—)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(—)\\ \curlyvee \\ (⊏)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(—)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø) \quad \times \quad (Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (—)\end{matrix} \succ (□)$$

Objectal action

$$(⊏) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (⊏)$$

$$(⊏) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (□)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(□)\\ \curlyvee \\ (Ø)\end{matrix} \succ (⊏)$$

$$(Ø) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (□)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(□)\\ \curlyvee \\ (⊏)\end{matrix} \succ (Ø)$$

$$(Ø) \gg \begin{matrix}(□)\\ \curlyvee \\ (⊏)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (□)\end{matrix} \succ (Ø)$$

$$(□) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (□)$$

$$(□) \gg \begin{matrix}(Ø)\\ \curlyvee \\ (⊏)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(⊏)\\ \curlyvee \\ (Ø)\end{matrix} \succ (□)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—)$$

14. Pre-semiotic dual system
$(\square — \varnothing \sqsubset) \times (\sqsubset \varnothing — \square)$

Qualitative action

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\square)$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (—)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset) \quad \times \quad (\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\square)$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (—)\end{matrix} \succ (\sqsubset)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\square)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix} \times (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\varnothing)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\varnothing)\\ (\sqsubset)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\varnothing)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix} \times (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (—)\\ (\sqsubset)\end{matrix}$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (—)\\ (\varnothing)\end{matrix}$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\varnothing)\end{matrix} \times (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix}$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\varnothing)\end{matrix}$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix} \times (\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\varnothing)\\ (\sqsubset)\end{matrix}$$

$$(\emptyset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (oS)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (\square)\\ (\emptyset)\end{matrix} \times (\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (—)\\ (\sqsubset)\end{matrix}$$

$$(—) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (\square)\\ (\sqsubset)\end{matrix} \times (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \succ (—)\\ (\emptyset)\end{matrix}$$

15. Pre-semiotic dual system
$(\square — \emptyset \sqsubset) \times (\sqsubset \emptyset — \square)$

Qualitative action

$$(\emptyset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\emptyset)\\ (\square)\end{matrix}$$

$$(\emptyset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\emptyset)\\ (—)\end{matrix}$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee \succ (\sqsubset)\\ (\emptyset)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (—)\\ (\square)\end{matrix}$$

$$(—) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (\sqsubset)\\ (\square)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee \succ (—)\\ (\emptyset)\end{matrix}$$

$$(\square) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (\sqsubset)\\ (—)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \succ (\square)\\ (\emptyset)\end{matrix}$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee \succ (\sqsubset)\\ (\emptyset)\end{matrix} \times (\sqsubset) \gg \begin{matrix}(\emptyset)\\ \curlyvee \succ (\square)\\ (—)\end{matrix}$$

Medial action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (—)\end{matrix} \succ (\sqsubset)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(—)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing) \quad \times \quad (\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (—)\end{matrix} \succ (\square)$$

Objectal action

$$(\sqsubset) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee\\ (\square)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\square)\\ \curlyvee\\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(\square)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\square)\end{matrix} \succ (\varnothing)$$

$$(\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square)$$

$$(\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—) \quad \times \quad (—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square)$$

Interpretative action

$$(\sqsubset) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\sqsubset)$$

$$(\sqsubset) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\sqsubset)$$

$$(\varnothing) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\varnothing)$$

$$(\varnothing) \gg \begin{matrix}(—)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (—)\end{matrix} \succ (\varnothing)$$

$$(—) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (—)$$

$$(—) \gg \begin{matrix}(\varnothing)\\ \curlyvee \\ (\sqsubset)\end{matrix} \succ (\square) \quad \times \quad (\square) \gg \begin{matrix}(\sqsubset)\\ \curlyvee \\ (\varnothing)\end{matrix} \succ (—)$$

Chapter Ten: The Poly-Contextural Night

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system
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Qualitative action

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Medial action

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Objectal action

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Interpretative action

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3. Pre-semiotic dual system
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4. Pre-semiotic dual system
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5. Pre-semiotic dual system
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6. Pre-semiotic dual system
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7. Pre-semiotic dual system
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8. Pre-semiotic dual system
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Interpretative action

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9. Pre-semiotic dual system
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10. Pre-semiotic dual system
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11. Pre-semiotic dual system
(00 0000 00 000) × (000 00 0000 00)

Qualitative action

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Medial action

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Objectal action

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Interpretative action

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12. Pre-semiotic dual system
(00 0000 00 000) × (000 00 0000 00)

Qualitative action

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Medial action

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Objectal action

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Interpretative action

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13. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

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Medial action

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Objectal action

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Interpretative action

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ʌ ≫ (00) × ʌ ≫ (00)
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14. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

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Medial action

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Objectal action

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Interpretative action

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15. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

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Medial action

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Objectal action

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Interpretative action

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ʌ ≫ (00) × ʌ ≫ (00)
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II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system
(0 00 000 0000) × (0000 000 00 0)

Qualitative action

(000) ≫ (0) ϒ ≻ (0000) × (0000) ≫ (00) ϒ ≻ (000) (00) (0)

(000) ≫ (00) ϒ ≻ (0000) × (0000) ≫ (0) ϒ ≻ (000) (0) (00)

(00) ≫ (0) ϒ ≻ (0000) × (0000) ≫ (000) ϒ ≻ (00) (000) (0)

(00) ≫ (000) ϒ ≻ (0000) × (0000) ≫ (0) ϒ ≻ (00) (0) (000)

(0) ≫ (000) ϒ ≻ (0000) × (0000) ≫ (00) ϒ ≻ (0) (00) (000)

(0) ≫ (00) ϒ ≻ (0000) × (0000) ≫ (000) ϒ ≻ (0) (000) (00)

Medial action

(0000) ≫ (0) ϒ ≻ (000) × (000) ≫ (00) ϒ ≻ (0000) (00) (0)

$$(0000) \gg^{(00)}_{(0)} \curlyvee \succ (000) \times (000) \gg^{(0)}_{(00)} \curlyvee \succ (0000)$$

$$(00) \gg^{(0000)}_{(0)} \curlyvee \succ (000) \times (000) \gg^{(0)}_{(0000)} \curlyvee \succ (00)$$

$$(00) \gg^{(0)}_{(0000)} \curlyvee \succ (000) \times (000) \gg^{(0000)}_{(0)} \curlyvee \succ (00)$$

$$(0) \gg^{(0000)}_{(00)} \curlyvee \succ (000) \times (000) \gg^{(00)}_{(0000)} \curlyvee \succ (0)$$

$$(0) \gg^{(00)}_{(0000)} \curlyvee \succ (000) \times (000) \gg^{(0000)}_{(00)} \curlyvee \succ (0)$$

Objectal action

$$(0000) \gg^{(0)}_{(000)} \curlyvee \succ (00) \times (00) \gg^{(000)}_{(0)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(000)}_{(0)} \curlyvee \succ (00) \times (00) \gg^{(0)}_{(000)} \curlyvee \succ (0000)$$

$$(000) \gg^{(0000)}_{(0)} \curlyvee \succ (00) \times (00) \gg^{(0)}_{(0000)} \curlyvee \succ (000)$$

$$(000) \gg^{(0)}_{(0000)} \curlyvee \succ (00) \times (00) \gg^{(0000)}_{(0)} \curlyvee \succ (000)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee \succ (00)\\ (000)\end{matrix} \times (00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (0000)\end{matrix}$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (0000)\end{matrix} \times (00) \gg \begin{matrix}(0000)\\ \curlyvee \succ (0)\\ (000)\end{matrix}$$

Interpretative action

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (0000)\\ (00)\end{matrix}$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (00)\end{matrix} \times (0) \gg \begin{matrix}(00)\\ \curlyvee \succ (0000)\\ (000)\end{matrix}$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \succ (0)\\ (00)\end{matrix} \times (0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0000)\end{matrix}$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (0000)\end{matrix} \times (0) \gg \begin{matrix}(0000)\\ \curlyvee \succ (000)\\ (00)\end{matrix}$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (0000)\end{matrix}$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (0000)\end{matrix} \times (0) \gg \begin{matrix}(0000)\\ \curlyvee \succ (00)\\ (000)\end{matrix}$$

2. Pre-semiotic dual system
(0 00 000 000) × (000 000 00 0)

Qualitative action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix} (000) \\ \curlyvee \\ (00) \end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix} (00) \\ \curlyvee \\ (000) \end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix} (00) \\ \curlyvee \\ (000) \end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix} (000) \\ \curlyvee \\ (00) \end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix} (000) \\ \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (000) \\ \curlyvee \\ (000) \end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix} (000) \\ \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (000) \\ \curlyvee \\ (000) \end{matrix} \succ (0)$$

Interpretative action

$$000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (000)\\ (00)\end{matrix}$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (00)\end{matrix} \times (0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (000)\end{matrix}$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (00)\end{matrix} \times (0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (000)\end{matrix}$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (000)\\ (00)\end{matrix}$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (000)\end{matrix}$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (000)\end{matrix}$$

3. Pre-semiotic dual system
(0 00 000 000) × (000 000 00 0)

Qualitative action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0)\end{matrix}$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0)\end{matrix} \times (000) \gg \begin{matrix}(0)\\ \curlyvee \succ (000)\\ (00)\end{matrix}$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (000 \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (000)\\ (00)\end{matrix}$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (000)\end{matrix}$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0)\\ (000)\end{matrix} \times (0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (000)\end{matrix}$$

4. Pre-semiotic dual system
(0 00 00 000) × (000 00 00 0)

Qualitative action

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (00)\\ (0)\end{matrix}$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0)\end{matrix} \times (000) \gg \begin{matrix}(0)\\ \curlyvee \succ (00)\\ (00)\end{matrix}$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (00)\\ (0)\end{matrix}$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0)\end{matrix} \times (000) \gg \begin{matrix}(0)\\ \curlyvee \succ (00)\\ (00)\end{matrix}$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (00)\end{matrix}$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (00)\end{matrix}$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00)$$

5. Pre-semiotic dual system
(0 00 00 000) × (000 00 00 0)

Qualitative action

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \Upsilon\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \Upsilon\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon\\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \Upsilon\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \Upsilon\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \Upsilon\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon\\ (00)\end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \Upsilon\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \Upsilon\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \Upsilon\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \Upsilon\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \Upsilon\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \Upsilon\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon\\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \Upsilon\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \Upsilon\\ (000)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(00)\\ \Upsilon\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon\\ (00)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00)$$

6. Pre-semiotic dual system
(0 00 0 000) × (000 0 00 0)

Qualitative action

$$(0) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

$$(00)\gg_{\substack{(0)\\ \curlyvee\\ (0)}}(000)\quad\times\quad(000)\gg_{\substack{(0)\\ \curlyvee\\ (0)}}(00)$$

$$(00)\gg_{\substack{(0)\\ \curlyvee\\ (0)}}(000)\quad\times\quad(000)\gg_{\substack{(0)\\ \curlyvee\\ (0)}}(00)$$

$$(0)\gg_{\substack{(0)\\ \curlyvee\\ (00)}}(000)\quad\times\quad(000)\gg_{\substack{(00)\\ \curlyvee\\ (0)}}(0)$$

$$(0)\gg_{\substack{(00)\\ \curlyvee\\ (0)}}(000)\quad\times\quad(000)\gg_{\substack{(0)\\ \curlyvee\\ (00)}}(0)$$

Medial action

$$(000)\gg_{\substack{(0)\\ \curlyvee\\ (00)}}(0)\quad\times\quad(0)\gg_{\substack{(00)\\ \curlyvee\\ (0)}}(000)$$

$$(000)\gg_{\substack{(00)\\ \curlyvee\\ (0)}}(0)\quad\times\quad(0)\gg_{\substack{(0)\\ \curlyvee\\ (00)}}(000)$$

$$(00)\gg_{\substack{(000)\\ \curlyvee\\ (0)}}(0)\quad\times\quad(0)\gg_{\substack{(0)\\ \curlyvee\\ (000)}}(00)$$

$$(00)\gg_{\substack{(0)\\ \curlyvee\\ (000)}}(0)\quad\times\quad(0)\gg_{\substack{(000)\\ \curlyvee\\ (0)}}(00)$$

$$(0)\gg_{\substack{(000)\\ \curlyvee\\ (00)}}(0)\quad\times\quad(0)\gg_{\substack{(00)\\ \curlyvee\\ (000)}}(0)$$

$$(0)\gg_{\substack{(00)\\ \curlyvee\\ (000)}}(0)\quad\times\quad(0)\gg_{\substack{(000)\\ \curlyvee\\ (00)}}(0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(sS)\\ \curlyvee \\ (oO)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(000)\end{matrix} \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(00)\end{matrix}$$

$$(00) \gg \begin{matrix}000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(0)\end{matrix} \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(00)\\(000)\end{matrix}$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(000)\end{matrix} \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(00)\\(0)\end{matrix}$$

7. Pre-semiotic dual system
(0 0000 00 000) × (000 00 0000 0)

Qualitative action

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(0000)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(00)\\(0)\end{matrix}$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(0)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(00)\\(0000)\end{matrix}$$

$$(0000) \gg \begin{matrix}0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(00)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0000)\\(0)\end{matrix}$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(0)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0000)\\(00)\end{matrix}$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(0000)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(00)\end{matrix}$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\end{matrix} \succ \begin{matrix}(000)\\(00)\end{matrix} \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\end{matrix} \succ \begin{matrix}(0)\\(0000)\end{matrix}$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (oS) \gg \begin{matrix}(oO)\\ \curlyvee \\ (sS)\end{matrix} \succ (sO)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0000)$$

8. Pre-semiotic dual system
(0 0000 00 000) × (000 00 0000 0)

Qualitative action

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

$$0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(0000) \gg^{\substack{(000)\\(0)}} \curlyvee \succ (00) \times (00) \gg^{\substack{(0)\\(000)}} \curlyvee \succ (0000)$$

$$(0000) \gg^{\substack{(0)\\(000)}} \curlyvee \succ (00) \times (00) \gg^{\substack{(000)\\(0)}} \curlyvee \succ (0000)$$

$$(0) \gg^{\substack{(000)\\(0000)}} \curlyvee \succ (00) \times (00) \gg^{\substack{(0000)\\(000)}} \curlyvee \succ (0)$$

$$(0) \gg^{\substack{(0000)\\(000)}} \curlyvee \succ (00) \times (00) \gg^{\substack{(000)\\(0000)}} \curlyvee \succ (0)$$

Objectal action

$$(000) \gg^{\substack{(0)\\(00)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(00)\\(0)}} \curlyvee \succ (000)$$

$$(000) \gg^{\substack{(00)\\(0)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(0)\\(00)}} \curlyvee \succ (000)$$

$$(00) \gg^{\substack{(000)\\(0)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(0)\\(000)}} \curlyvee \succ (00)$$

$$(00) \gg^{\substack{(0)\\(000)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(000)\\(0)}} \curlyvee \succ (00)$$

$$(0) \gg^{\substack{(000)\\(00)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(00)\\(000)}} \curlyvee \succ (0)$$

$$(0) \gg^{\substack{(00)\\(000)}} \curlyvee \succ (0000) \times (0000) \gg^{\substack{(000)\\(00)}} \curlyvee \succ (0)$$

Interpretative action

$$(000) \gg_{\Upsilon}^{(0000)} (0) \times (0) \gg_{\Upsilon}^{(00)} (000)$$

$$(000) \gg_{\Upsilon}^{(00)} (0) \times (0) \gg_{\Upsilon}^{(0000)} (000)$$

$$(00) \gg_{\Upsilon}^{(000)} (0) \times (0) \gg_{\Upsilon}^{(0000)} (00)$$

$$(00) \gg_{\Upsilon}^{(0000)} (0) \times (0) \gg_{\Upsilon}^{(000)} (00)$$

$$(0000) \gg_{\Upsilon}^{(000)} (0) \times (0) \gg_{\Upsilon}^{(00)} (0000)$$

$$(0000) \gg_{\Upsilon}^{(00)} (0) \times (0) \gg_{\Upsilon}^{(000)} (0000)$$

9. Pre-semiotic dual system
(0 0000 0 000) × (000 0 0000 0)

Qualitative action

$$(0) \gg_{\Upsilon}^{(0)} (000) \times (000) \gg_{\Upsilon}^{(0000)} (0)$$

$$(0) \gg_{\Upsilon}^{(0000)} (000) \times (000) \gg_{\Upsilon}^{(0)} (0)$$

$$(0000) \gg^{(0)}_{(0)} \Upsilon \succ (000) \quad \times \quad (000) \gg^{(0)}_{(0)} \Upsilon \succ (0000)$$

$$(0000) \gg^{(0)}_{(0)} \Upsilon \succ (000) \quad \times \quad (000) \gg^{(0)}_{(0)} \Upsilon \succ (0000)$$

$$(0) \gg^{(0)}_{(0000)} \Upsilon \succ (000) \quad \times \quad (000) \gg^{(0000)}_{(0)} \Upsilon \succ (0)$$

$$(0) \gg^{(0000)}_{(0)} \Upsilon \succ (000) \quad \times \quad (000) \gg^{(0)}_{(0000)} \Upsilon \succ (0)$$

Medial action

$$(000) \gg^{(0)}_{(0000)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(0000)}_{(0)} \Upsilon \succ (000)$$

$$(000) \gg^{(0000)}_{(0)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(0)}_{(0000)} \Upsilon \succ (000)$$

$$(0000) \gg^{(000)}_{(0)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(0)}_{(000)} \Upsilon \succ (0000)$$

$$(0000) \gg^{(0)}_{(000)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(000)}_{(0)} \Upsilon \succ (0000)$$

$$(0) \gg^{(000)}_{(0000)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(0000)}_{(000)} \Upsilon \succ (0)$$

$$(0) \gg^{(0000)}_{(000)} \Upsilon \succ (0) \quad \times \quad (0) \gg^{(000)}_{(0000)} \Upsilon \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0S)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

10. Pre-semiotic dual system
(0 0000 0 000) × (000 0 0000 0)

Qualitative action

$$(0) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

Medial action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

Objectal action

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0000) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee \\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee \\ (0)\end{matrix} \succ (00)$$

11. Pre-semiotic dual system
(00 0000 00 000) × (000 00 0000 00)

Qualitative action

$$(00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (0000)$$

Medial action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (000)\end{matrix} \succ 00)$$

$$(00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon \\ (0000)\end{matrix} \succ (00)$$

Objectal action

$$(000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (00)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee \\ (00)\end{matrix} \succ (0000)$$

12. Pre-semiotic dual system
(00 0000 00 000) × (000 00 0000 00)

Qualitative action

$$(00) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg^{(00)}_{(00)} \curlyvee \succ (000) \times (000) \gg^{(00)}_{(00)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(00)}_{(00)} \curlyvee \succ (000) \times (000) \gg^{(00)}_{(00)} \curlyvee \succ (0000)$$

$$0) \gg^{(00)}_{(0000)} \curlyvee \succ (000) \times (000) \gg^{(0000)}_{(00)} \curlyvee \succ (00)$$

$$(00) \gg^{(0000)}_{(00)} \curlyvee \succ (000) \times (000) \gg^{(00)}_{(0000)} \curlyvee \succ (00)$$

Medial action

$$(000) \gg^{(00)}_{(0000)} \curlyvee \succ (00) \times (00) \gg^{(0000)}_{(00)} \curlyvee \succ (000)$$

$$(000) \gg^{(0000)}_{(00)} \curlyvee \succ (00) \times (00) \gg^{(00)}_{(0000)} \curlyvee \succ (000)$$

$$(0000) \gg^{(000)}_{(00)} \curlyvee \succ (00) \times (00) \gg^{(00)}_{(000)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(00)}_{(000)} \curlyvee \succ (00) \times (00) \gg^{(000)}_{(00)} \curlyvee \succ (0000)$$

$$(00) \gg^{(000)}_{(0000)} \curlyvee \succ (00) \times (00) \gg^{(0000)}_{(000)} \curlyvee \succ (00)$$

$$(00) \gg^{(0000)}_{(000)} \curlyvee \succ (00) \times (00) \gg^{(000)}_{(0000)} \curlyvee \succ (00)$$

Objectal action

$$(000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (00)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \Upsilon \\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \Upsilon \\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(00)\\ \Upsilon \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (00)\end{matrix} \succ (000)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

13. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (00)$$

Medial action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (00)$$

Objectal action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (00)\end{matrix} \succ (0)$$

$$(00) \gg \begin{matrix}(000)\\ \Upsilon \\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \Upsilon \\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \Upsilon \\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (0)\end{matrix} \succ (00)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \Upsilon \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \Upsilon \\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \Upsilon \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \Upsilon \\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \Upsilon \\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \Upsilon \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000\\ \Upsilon \\ (0000)\end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix}(000)\\ \Upsilon \\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \Upsilon \\ (000)\end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix}(0)\\ \Upsilon \\ (000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(000)\\ \Upsilon \\ (0)\end{matrix} \succ (0000)$$

14. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (0)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee \\ (0000)\end{matrix} \succ (00)$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee \\ (00)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0)\end{matrix} \succ (0000)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee \\ (0000)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (0)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0000)\\ \curlyvee \\ (0)\end{matrix} \succ (000) \quad \times \quad (000) \gg \begin{matrix}(0)\\ \curlyvee \\ (0000)\end{matrix} \succ (00)$$

Medial action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \\ (00)\end{matrix} \succ (0) \quad \times \quad (0) \gg \begin{matrix}(00)\\ \curlyvee \\ (0000)\end{matrix} \succ (000)$$

$$(0000) \gg^{(000)}_{(00)} \curlyvee \succ (0) \quad \times \quad (0) \gg^{(00)}_{(000)} \curlyvee \succ (0000)$$

$$(00) \gg^{(0000)}_{(000)} \curlyvee \succ (0) \quad \times \quad (0) \gg^{(000)}_{(0000)} \curlyvee \succ (00)$$

$$(00) \gg^{(000)}_{(0000)} \curlyvee \succ (0) \quad \times \quad (0) \gg^{(0000)}_{(000)} \curlyvee \succ (00)$$

$$(00) \gg^{(0000)}_{(000)} \curlyvee \succ (0) \quad \times \quad (0) \gg^{(000)}_{(0000)} \curlyvee \succ (00)$$

Objectal action

$$(000) \gg^{(0000)}_{(0)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(0)}_{(0000)} \curlyvee \succ (000)$$

$$(000) \gg^{(0)}_{(0000)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(0000)}_{(0)} \curlyvee \succ (000)$$

$$(0) \gg^{(000)}_{(0000)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(0000)}_{(000)} \curlyvee \succ (0)$$

$$(0) \gg^{(0000)}_{(000)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(000)}_{(0000)} \curlyvee \succ (0)$$

$$(0000) \gg^{(000)}_{(0)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(0)}_{(000)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(0)}_{(000)} \curlyvee \succ (00) \quad \times \quad (00) \gg^{(000)}_{(0)} \curlyvee \succ (0000)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee \succ (00)\\ (0)\end{matrix} \times (00) \gg \begin{matrix}(0)\\ \curlyvee \succ (000)\\ (0000)\end{matrix}$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee \succ (00)\\ (0000)\end{matrix} \times (00) \gg \begin{matrix}(0000)\\ \curlyvee \succ (000)\\ (0)\end{matrix}$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (0000)\end{matrix} \times (00) \gg \begin{matrix}(0000)\\ \curlyvee \succ (0)\\ (000)\end{matrix}$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee \succ (00)\\ (000)\end{matrix} \times (00) \gg \begin{matrix}(000)\\ \curlyvee \succ (oS)\\ (0000)\end{matrix}$$

$$(0000) \gg \begin{matrix}(000)\\ \curlyvee \succ (00)\\ (0)\end{matrix} \times (00) \gg \begin{matrix}(0)\\ \curlyvee \succ (0000)\\ (000)\end{matrix}$$

$$(0000) \gg \begin{matrix}(0)\\ \curlyvee \succ (00)\\ (000)\end{matrix} \times (00) \gg \begin{matrix}(000)\\ \curlyvee \succ (0000)\\ (0)\end{matrix}$$

15. Pre-semiotic dual system
(00 0000 0 000) × (000 0 0000 00)

Qualitative action

$$(0) \gg \begin{matrix}(00)\\ \curlyvee \succ (000)\\ (0000)\end{matrix} \times (000) \gg \begin{matrix}(0000)\\ \curlyvee \succ (0)\\ (00)\end{matrix}$$

$$(0) \gg \begin{matrix}(0000)\\ \curlyvee \succ (000)\\ (00)\end{matrix} \times (000) \gg \begin{matrix}(00)\\ \curlyvee \succ (0)\\ (0000)\end{matrix}$$

$$(0000) \gg^{(00)}_{(0)} \curlyvee \succ (000) \times (000) \gg^{(0)}_{(00)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(0)}_{(00)} \curlyvee \succ (000) \times (000) \gg^{(00)}_{(0)} \curlyvee \succ (0000)$$

$$(00) \gg^{(0)}_{(0000)} \curlyvee \succ (000) \times (000) \gg^{(0000)}_{(0)} \curlyvee \succ (00)$$

$$(00) \gg^{(0000)}_{(0)} \curlyvee \succ (000) \times (000) \gg^{(0)}_{(0000)} \curlyvee \succ (00)$$

Medial action

$$(000) \gg^{(00)}_{(0000)} \curlyvee \succ (0) \times (0) \gg^{(0000)}_{(00)} \curlyvee \succ (000)$$

$$(000) \gg^{(0000)}_{(00)} \curlyvee \succ (0) \times (0) \gg^{(00)}_{(0000)} \curlyvee \succ (000)$$

$$(0000) \gg^{(000)}_{(00)} \curlyvee \succ (0) \times (0) \gg^{(00)}_{(000)} \curlyvee \succ (0000)$$

$$(0000) \gg^{(00)}_{(000)} \curlyvee \succ (0) \times (0) \gg^{(000)}_{(00)} \curlyvee \succ (0000)$$

$$(00) \gg^{(000)}_{(0000)} \curlyvee \succ (0) \times (0) \gg^{(0000)}_{(000)} \curlyvee \succ (00)$$

$$(00) \gg^{(0000)}_{(000)} \curlyvee \succ (0) \times (0) \gg^{(000)}_{(0000)} \curlyvee \succ (00)$$

Objectal action

$$(000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$(0) \gg \begin{matrix}(00)\\ \curlyvee\\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (00)\end{matrix} \succ (0)$$

$$(00) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (00)$$

$$(00) \gg \begin{matrix}(0)\\ \curlyvee\\ (000)\end{matrix} \succ (0000) \quad \times \quad (0000) \gg \begin{matrix}(000)\\ \curlyvee\\ (0)\end{matrix} \succ (00)$$

Interpretative action

$$(000) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (000)$$

$$(000) \gg \begin{matrix}(0)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (0)\end{matrix} \succ (000)$$

$$(0) \gg \begin{matrix}(000)\\ \curlyvee\\ (0000)\end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix}(0000)\\ \curlyvee\\ (000)\end{matrix} \succ (0)$$

$$\begin{matrix}(0000)\\ \curlyvee\end{matrix} \quad \times \quad \begin{matrix}(000)\\ \curlyvee\end{matrix}$$

$$(0) \gg \begin{matrix} \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} \curlyvee \\ (0000) \end{matrix} \succ (0)$$

$$(0000) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (0000)$$

$$(0000) \gg \begin{matrix} (0) \\ \curlyvee \\ (000) \end{matrix} \succ (00) \quad \times \quad (00) \gg \begin{matrix} (000) \\ \curlyvee \\ (0) \end{matrix} \succ (0000)$$

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