

Prof. Dr. Alfred Toth

Intra-semiotic connections and structural realities of pre-semiotics

1. In Toth (2008b, pp. 28 ss.), I have introduced the differentiation between intra- and extra-semiotic connections, based on the system of the 10 sign classes and their 10 dual reality thematics over the triadic-trichotomic sign relation $SR_{3,3}$. In the present study, I will show the intra-semiotic connections of the 15 sign classes and their reality thematics over the tetradic-trichotomic pre-semiotic sign relation $SR_{4,3}$ (cf. Toth 2008c, d, e) and investigate the pre-semiotic structural reality thematics, which are presented by the pre-semiotic reality thematics.

2. In the following list, I display the intra-semiotic connections of the 15 pre-semiotic sign classes and their dual reality thematics together with their ports or sets of shared sub-signs:

- 1 (3.1 2.1 1.1 0.1) \times (1.0 1.1 1.2 1.3) $\{<(1.1)>\}$
- 2 (3.1 2.1 1.1 0.2) \times (2.0 1.1 1.2 1.3) $\{<(1.1)>\}$
- 3 (3.1 2.1 1.1 0.3) \times (3.0 1.1 1.2 1.3) $\{<(1.1)>\}$
- 4 (3.1 2.1 1.2 0.2) \times (2.0 2.1 1.2 1.3) $\{<(2.1, 1.2)>\}$
- 5 (3.1 2.1 1.2 0.3) \times (3.0 2.1 1.2 1.3) $\{<(2.1, 1.2)>\}$
- 6 (3.1 2.1 1.3 0.3) \times (3.0 3.1 1.2 1.3) $\{<(3.1, 1.3)>\}$
- 7 (3.1 2.2 1.2 0.2) \times (2.0 2.1 2.2 1.3) $\{<(2.2)>\}$
- 8 (3.1 2.2 1.2 0.3) \times (3.0 2.1 2.2 1.3) $\{<(2.2)>\}$
- 9 (3.1 2.2 1.3 0.3) \times (3.0 3.1 2.2 1.3) $\{<(3.1), (2.2), (1.3)>\}$
- 10 (3.1 2.3 1.3 0.3) \times (3.0 3.1 3.2 1.3) $\{<(3.1), (1.3)>\}$
- 11 (3.2 2.2 1.2 0.2) \times (2.0 2.1 2.2 2.3) $\{<(2.2)>\}$
- 12 (3.2 2.2 1.2 0.3) \times (3.0 2.1 2.2 2.3) $\{<(2.2)>\}$
- 13 (3.2 2.2 1.3 0.3) \times (3.0 3.1 2.2 2.3) $\{<(2.2)>\}$
- 14 (3.2 2.3 1.3 0.3) \times (3.0 3.1 3.2 2.3) $\{<(3.2), (2.3)>\}$
- 15 (3.3 2.3 1.3 0.3) \times (3.0 3.1 3.2 3.3) $\{<(3.3)>\}$

Although SS15 does not contain any dual-identical sign classes, no. 9 shows triadic semiotic connection between the sign class and its reality thematic.

2. In the following, we will now consider the structural realities of the pre-semiotic reality thematics and compare them to the ports. The abbreviation Thn stands for “thematizing relation of sub-signs”:

1. (1.0 1.1 1.2 1.3) M-them. M $P = \{<(1.1)>\}$ $P \subset \text{Thn}$
2. (2.0 1.1 1.2 1.3) M-them. O $P = \{<(1.1)>\}$ $P \subset \text{Thn}$
3. (3.0 1.1 1.2 1.3) M-them. I $P = \{<(1.1)>\}$ $P \subset \text{Thn}$
4. (2.0 2.1 1.2 1.3) O-them. M $P = \{<(2.1, 1.2)>\}$ $P \subset \text{Thn}$
5. (3.0 2.1 1.2 1.3) M-them. I/O $P = \{<(2.1, 1.2)>\}$ $P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$

6.	<u>(3.0 3.1 1.2 1.3)</u>	M-them. I	$P = \{ \langle (3.1, 1.3) \rangle \}$	$P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$
7.	<u>(2.0 2.1 2.2 1.3)</u>	O-them. M	$P = \{ \langle (2.2) \rangle \}$	$P \subset \text{Thn}$
8.	<u>(3.0 2.1 2.2 1.3)</u>	O-them. I/M	$P = \{ \langle (2.2) \rangle \}$	$P \subset \text{Thn}$
9.	<u>(3.0 3.1 2.2 1.3)</u>	I-them. O/M	$P = \{ \langle (3.1), (2.2), (1.3) \rangle \}$	$P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$
10.	<u>(3.0 3.1 3.2 1.3)</u>	I-them. M	$P = \{ \langle (3.1), (1.3) \rangle \}$	$P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$
11.	<u>(2.0 2.1 2.2 2.3)</u>	O-them. O	$P = \{ \langle (2.2) \rangle \}$	$P \subset \text{Thn}$
12.	<u>(3.0 2.1 2.2 2.3)</u>	O-them. I	$P = \{ \langle (2.2) \rangle \}$	$P \subset \text{Thn}$
13.	<u>(3.0 3.1 2.2 2.3)</u>	O-them. I	$P = \{ \langle (2.2) \rangle \}$	$P \subset \text{Thn}$
14.	<u>(3.0 3.1 3.2 2.3)</u>	I-them. O	$P = \{ \langle (3.2), (2.3) \rangle \}$	$P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$
15.	<u>(3.0 3.1 3.2 3.3)</u>	I-them. I	$P = \{ \langle (3.3) \rangle \}$	$P \subset \text{Thn}$

Thus, in the pre-semiotic structural realities presented by the reality thematics of nos. 5,6, 9, 10, and 14, the sets of ports which consist of 2 or 3 sub-sets, are distributed over the part-relations of thematizing and thematized realities. If we compare no. 4 and no. 5, we recognize that this relational distribution is independent of the number of sub-sets of the pre-semiotic port-sets, yet, of course, a port with only one element cannot be distributed over two part-relations. Moreover, the only case with triadic intra-semiotic connection (no. 9) displays only two port-sub-sets.

3. In Toth (2008a, pp. 177 ss.), I have shown that each triadic-trichotomic sign class has $3! = 6$ permutations. Therefore, each tetradic-trichotomic sign class has $4! = 24$ permutations and thus 24 pre-semiotic sign classes, reality thematics and structural realities. In the following, we will show the great impact of permutations to the differentiation of structural realities especially in pre-semiotics. As an example, we will take the pre-semiotic dual system $(3.1 2.1 1.2 0.3) \times (3.0 2.1 1.2 1.3)$ with its port $\{ \langle (2.1, 1.2) \rangle \}$ and $P_1 \subset \text{Thn}, P_2 \subset \text{Thn}$. As we will see, permutations turn out to be a major tool in distributing sets of intra-semiotic connections over part-relations of thematizing and thematized realities. For the notation of the structural realities, cf. Toth (2008a, pp. 223 ss.). As above, sets of thematizing sub-signs are underlined; the port-relations are bold.

<u>(1.3 1.2 2.1 3.0)</u>	$(1^{2>} \rightarrow 2^1 \leftrightarrow 3^1)$	<u>(2.1 3.0 1.2 1.3)</u>	$(2^1 \leftrightarrow 3^1 \leftarrow 1^{2<})$
<u>(1.2 1.3 2.1 3.0)</u>	$(1^{2<} \rightarrow 2^1 \leftrightarrow 3^1)$	<u>(1.3 3.0 1.2 2.1)</u>	$(1^{1>} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
<u>(1.3 2.1 1.2 3.0)</u>	$(1^{1>} \rightarrow 2^1 \leftarrow 1^1 \rightarrow 3^1)$	<u>(1.2 3.0 1.3 2.1)</u>	$(1^{1<} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
<u>(2.1 1.3 1.2 3.0)</u>	$(2^1 \leftarrow 1^{2>} \rightarrow 3^1)$	<u>(2.1 3.0 1.3 1.2)</u>	$(2^1 \leftrightarrow 3^1 \leftarrow 1^{2>})$
<u>(1.2 2.1 1.3 3.0)</u>	$(1^{1<} \rightarrow 2^1 \leftarrow 1^1 \rightarrow 3^1)$	<u>(1.3 3.0 2.1 1.2)</u>	$(1^{1>} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$
<u>(2.1 1.2 1.3 3.0)</u>	$(2^1 \leftarrow 1^{2<} \rightarrow 3^1)$	<u>(1.2 3.0 2.1 1.3)</u>	$(1^{1<} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$
<u>(1.3 1.2 3.0 2.1)</u>	$(1^{2>} \rightarrow 3^1 \leftrightarrow 2^1)$	<u>(3.0 2.1 1.2 1.3)</u>	$(3^1 \leftrightarrow 2^1 \leftarrow 1^{2<})$
<u>(1.2 1.3 3.0 2.1)</u>	$(1^{2<} \rightarrow 3^1 \leftrightarrow 2^1)$	<u>(3.0 1.2 1.3 2.1)</u>	$(3^1 \leftarrow 1^{2<} \rightarrow 2^1)$
<u>(1.3 2.1 3.0 1.2)</u>	$(1^{1>} \rightarrow 2^1 \leftrightarrow 3^1 \leftarrow 1^1)$	<u>(3.0 1.3 2.1 1.2)</u>	$(3^1 \leftarrow 1^{1>} \rightarrow 2^1 \leftarrow 1^1)$
<u>(2.1 1.3 3.0 1.2)</u>	$(2^1 \leftarrow 1^{1>} \rightarrow 3^1 \leftarrow 1^1)$	<u>(3.0 2.1 1.3 1.2)</u>	$(3^1 \leftrightarrow 2^1 \leftarrow 1^{2>})$
<u>(1.2 2.1 3.0 1.3)</u>	$(1^{1<} \rightarrow 2^1 \leftrightarrow 3^1 \leftarrow 1^1)$	<u>(3.0 1.2 2.1 1.3)</u>	$(3^1 \leftarrow 1^{1<} \rightarrow 2^1 \leftarrow 1^1)$

$$(2.1 \underline{1.2} \ 3.0 \ \underline{1.3}) \quad (2^1 \leftarrow 1^{1,<} \rightarrow 3^1 \leftarrow 1^1) \quad (3.0 \ \underline{1.3} \ \underline{1.2} \ \underline{2.1}) \quad (3^1 \leftarrow 1^{2,>} \rightarrow 2^1)$$

Since the structural realities are of course shared by all sign classes, the 24 transpositions of each sign class of SS15 over $SS_{4,3}$ can thus be summed up into 6 types, each of which has one variant, concerning the semiotic order inside of a set of thematizing sub-signs (e.g., (1.2, 1.3) vs. (1.3, 1.2); the semiotic order is thus determined by the trichotomic values of the thematizing sub-signs):

- 1.a) $(1^{2,>} \rightarrow 2^1 \leftrightarrow 3^1)$
- 1.b) $(1^{2,<} \rightarrow 2^1 \leftrightarrow 3^1)$
- 2.a) $(3^1 \leftrightarrow 2^1 \leftarrow 1^{2,>})$
- 2.b) $(3^1 \leftrightarrow 2^1 \leftarrow 1^{2,<})$
- 3.a) $3^1 \leftarrow 1^{2,>} \rightarrow 2^1)$
- 3.b) $(3^1 \leftarrow 1^{2,<} \rightarrow 2^1)$

- 4.a) $(1^{1,>} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
- 4.b) $(1^{1,<} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
- 5.a) $(3^1 \leftarrow 1^{1,>} \rightarrow 2^1 \leftarrow 1^1)$
- 5.b) $(3^1 \leftarrow 1^{1,<} \rightarrow 2^1 \leftarrow 1^1)$
- 6.a) $(1^{1,>} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$
- 6.b) $(1^{1,>} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$

As for the sets of ports, the variants do not count for triadic structural realities, since in our notation, the sub-signs with “frequency” 2 are amalgating two sub-signs with identical triadic value. However, in tetradic structural realities, where there can be no amalgamations in the notation of the four sub-signs of a tetradic sign relation, sub-signs with identical triadic, but different trichotomic values appear as two instances, and hence the variants do count. Therefore, we can finally show the distribution of the elements of ports by permutation in pre-semiotic structural realities:

- 1. $(1^{2,>} \rightarrow 2^1 \leftrightarrow 3^1)$
- 2. $(3^1 \leftrightarrow 2^1 \leftarrow 1^{2,>})$
- 3. $3^1 \leftarrow 1^{2,>} \rightarrow 2^1)$

- 4.a) $(1^{1,>} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
- 4.b) $(1^{1,<} \rightarrow 3^1 \leftarrow 1^1 \rightarrow 2^1)$
- 5.a) $(3^1 \leftarrow 1^{1,>} \rightarrow 2^1 \leftarrow 1^1)$
- 5.b) $(3^1 \leftarrow 1^{1,<} \rightarrow 2^1 \leftarrow 1^1)$
- 6.a) $(1^{1,>} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$
- 6.b) $(1^{1,<} \rightarrow 3^1 \leftrightarrow 2^1 \leftarrow 1^1)$

As we recognize, in triadic structural realities, there is no “splitting” like, e.g., $*(1^{2,>} \rightarrow 3^1 \leftrightarrow 2^1)$, while in tetradic structural realities, there are. Types like no. 4.b), in which 2 sub-sets of a set of semiotic ports are split over n-2 sub-signs of an n-adic sign relation, could be called “semiotic stranding”.

Bibliography

- Toth, Alfred, Semiotische Strukturen und Prozesse. Klagenfurt 2008 (2008a)
Toth, Alfred, Semiotic Ghost Trains. Klagenfurt 2008 (2008b)
Toth, Alfred, Relational and categorial numbers. Ch. 40 (2008c)
Toth, Alfred, Tetradic sign classes from relational and categorial numbers. Ch. 41 (2008d)
Toth, Alfred, Towards a reality theory of pre-semiotics. Ch. 42 (2008e)

©2008, Prof. Dr. Alfred Toth