

**Prof. Dr. Alfred Toth**

## **On the genesis of semiosis**

1. Bense (1967, p. 9) writes laconically: “Sign is everything, that is introduced as a sign, and only what is introduced as a sign. Each arbitrary thing can (principally) be introduced as a sign. What has been introduced as a sign, is no longer an object anymore, but an assignment (to a thing that can be object); so to speak a meta-object”. More explicitly, we read in Bense and Walther (1973, p. 26): “Introduction of a sign means that a sign is not given like an object of nature, but is introduced by a consciousness. This introduction can be understood as ‘setting’, ‘declaration’ and thus as ‘selection’. Therefore, a sign can only be understood as a ‘thetic’ item, it has a principal ‘thetic’ character”.

2. The introduction of a sign for an object allows using this object and referring to it independently from its local and temporal position and thus “frees” it from its geographical boundaries. However, apparently, there are three kinds of representations of an object by a sign:

2.1. If an object itself is taken for a sign, then sign and object contain one another, either as part or proper part; moreover, they are necessarily similar to one another. This is, what Peirce calls the iconic object-relation of a sign (2.1). Thus, an icon has the shortest local and temporal distance to its object.

2.2. If a sign refers to a distant object, like a signpost indicates the direction of a town that is locally and temporally absent from it, then sign and object do not stand in a relation of parthood, but in a nexal relation. Peirce calls this the indexical object-relation of a sign (2.2). Pure indices are not similar to their objects. In pictograms, their icons are redundant from the viewpoint of the indexical function, but this redundancy is intended to reduce the entropy of the index, which naturally results from its nexal, non-parthood relationship.

2.3. Even farther away from the object it is referring to, is, what Peirce calls a symbol (2.3). Only the symbolic sign is completely disjoint and thus free from the object it refers to. Therefore, a pure symbol has no similarity with its object. The similarity of onomatopoeic words is due to the iconic character of these symbols, which is also redundant, but is intended to reduce the entropy of the symbol, which naturally results from its complete independence from its object.

3. Looking at the three object-relations of a sign in this way, it is obvious that in the progress between icon (2.1), index (2.2) and symbol (2.3), the maximal evidence of the referred object in (2.1), which gets fragile in (2.2), vanishes in (2.3) (cf. Toth 2008, pp. 286 ss.). This presupposes that the iconic object-relation of a sign is older, from the standpoint of phylogenetics, and that the progress (2.1) > (2.2) > (2.3) does not only represent the increasing freedom of a sign from its objects, but also the entropy of reference of this sign to its objects. Thus, semiotic redundancy also increases from the icon (2.1) to the index (2.2) and to the symbol (2.3). At the same time, indices are redundantly used together with symbols in order to establish a nexal framework for completely arbitrary signs, and indices

are redundantly used together with icons in order to specify the local and temporal settings of the object referred to by the icon. These strategies of redundancy serve to diminish the entropy inherent in object-relations of signs that inherited this entropy by the process of their liberation from their referred objects. Redundancy can thus be interpreted as a counter-movement against the decreasing evidence, which results from increasing freedom of a sign in respect to its object.

4. Therefore, in a triadic sign-relation, that contains the monadic relation of the medium or sign-carrier (.1.), the dyadic relation of the referred object (.2.), and the triadic relation of the consciousness of interpretation (.3.), the part-relation between the medium and the object are basic. In the case of iconic representation, the medium is nothing else than the object, after it has been declared as a sign by the consciousness, and thus, what Bense calls a meta-object.

4.1. The icon represents its object by the following semiotic connection:

(2.1)  $\times$  (1.2),

This means, that an object that is declared as a sign, can only use a singular sign-carrier for its representation. This is obvious, since the icon stands in a parthood-relationship to its referred object, and a parthood-relationship is defined through the relation between an element and the set to which this element belongs.

4.2. Since the dyadic relation of designation (.1.  $\Rightarrow$  .2.) between an iconic object and its substituting singular medium is thus (2.1 1.2), it follows that the most fundamental sign class to represent any objects is

(3.1 2.1 1.2),

together with the most fundamental reality thematic that stands to the sign-class in the relation of dualization

(2.1 1.2 1.3).

Thus, the most fundamental structural reality presented by a reality thematic of a sign class is

(2.1)-thematized (1.2 1.3), i.e. a medium-thematized object,

or an iconic object (2.1) represented by either a singular (1.2) or an arbitrary (1.3) medium (sign carrier). The singular medium refers to the case where the sign is a part of its object (pars pro toto relation); the arbitrary medium refers to the case where the sign is not contained by its object. Therefore, the maximally open consciousness, the rhematic interpretant (3.1), creates the arbitrary medium

(3.1  $\times$  1.3),

and the arbitrary medium creates the maximally open interpretant relation

(1.3 × 3.1).

If signs are not represented through arbitrary sign carriers, their dual reality thematics cannot establish open interpretative connexes and thus a triadic relation over the dyadic designation relation between sign and object, and vice versa. A sign that can only be represented by a singular medium, establishes, via dualization, only the object-relation of its sign relation and thus remains dyadic.

4.3. Again in other words, the most basic semiotic dualization

(2.1 × 1.2)

marks the primordial **semiotic difference** between a sign and its object. At the same time, this relation of dualization sets the two semiotic relations, the dyadic iconic object-relation (2.1) and the monadic singular medium (1.2), in semiotic **opposition** to one another. Therefore, difference and opposition as sources of semiosis do not only appear after a full triadic sign relation is established (as was assumed, amongst others, by de Saussure (1916) and Nöth (1994)), but they are **pre-existent** to the act of thetic introduction of a sign or transformation of an object into a meta-object. Furthermore, as one recognizes, **difference is primordial to opposition**, hence opposition establishes only after a difference has been made (cf. Spencer Brown 1969).

4.4. However, the triadic interpretant relation, which is connected over the dyadic relation of designation (.1. ⇒ .2.), implies a third semiotic value, after the value for the object (.2.) and the value for the medium (.1.) have been introduced. However, this third semiotic value cannot be taken from the basic dyadic relation (2.1 × 1.2) of semiotic difference, and thus, in a mono-contextural world of binary logic, must be taken from the semiotic identity relation

(1.1 2.2 3.3),

which has been called by Bense the “Genuine Category Class” (Bense 1992, pp. 27 ss.). Therefore, **semiotic identity is posterior to semiotic difference**.

As soon as the semiotic identity relation is established, all other  $(3^2 - 2) = 7$  sub-signs can be constructed, which is shown best by using the semiotic matrix, in which the 9 sub-signs appear as Cartesian products of the mapping of the triadic sign-relation (.1., .2., .3.) into itself

(.1., .2., .3.) × (.1., .2., .3.) =

$$\begin{bmatrix} 1.1 & 1.2 & 1.3 \\ 2.1 & 2.2 & 2.3 \\ 3.1 & 3.2 & 3.3 \end{bmatrix}$$

Therefore, most basically, it is enough to have the basic semiotic object-relation

(2.1) × (1.2),

the operation of dualization

$$\times := (a.b) \rightarrow (b.a),$$

and the Genuine Category Class, which consists of the identitive morphisms idx:

(1.1 2.2 3.3),

On the basis of these two relations and one operation, all sub-signs can be created, and all other semiotic relations of the sign-relation (.3., .2., .1.) can be constructed.

4.5. Since the 9 sub-signs from the semiotic matrix are restricted to appear in a triadic sign relation (3.a 2.b 1.c) by the semiotic inclusion order

$$a \leq b \leq c,$$

the total amount of sign classes is not  $3 \cdot 3 \cdot 3 = 27$ , but only 10 sign classes, which we will order here according to their object-relations, and which allows us to group them into the following three classes of 3 sign-classes with iconic (2.1), 4 sign-classes with indexicalic (2.2), and 3 sign-classes with symbolic (2.3) object-relation:

3.1 2.1 .... 1.1  
 3.1 2.1 .... 1.2  
 3.1 2.1 .... 1.3

3.1 2.2 .... 1.2  
 3.1 2.2 .... 1.3  
 3.2 2.2 .... 1.2  
 3.2 2.2 .... 1.3

3.1 2.3 .... 1.3  
 3.2 2.3 .... 1.3  
 3.3 2.3 .... 1.3

As we recognize, the sign classes with iconic (2.1) object-relation are connected, via dualization, with their medium or sign carrier:

$$\begin{array}{r}
 3.1 \quad \boxed{2.1} \quad 1.1 \quad \_ \times \quad 1.1 \quad \boxed{1.2} \quad 1.3 \\
 3.1 \quad \boxed{2.1} \quad 1.2 \quad \_ \times \quad 2.1 \quad \boxed{1.2} \quad 1.3 \\
 3.1 \quad \boxed{2.1} \quad 1.3 \quad \_ \times \quad 3.1 \quad \boxed{1.2} \quad 1.3
 \end{array}$$

The sign classes with indexicalic (2.2) object-relation are self-connected:

3.1	2.2	1.2	– ×	2.1	2.2	1.3
3.1	2.3	1.3	– ×	3.1	2.2	1.3
3.2	2.2	1.2	– ×	2.1	2.2	2.3
3.2	2.2	1.3	– ×	3.1	2.2	2.3

And the sign-classes with symbolic object-relation (2.3) are connected, via dualization, with their interpretant relation:

3.1	2.3	1.3	– ×	3.1	3.2	1.3
3.2	2.3	1.3	– ×	3.1	3.2	2.3
3.3	2.3	1.3	– ×	3.1	3.2	3.3

In other words: A sign with iconic (2.1) object-relation does not automatically establish an interpretative connexion over its dyadic designation relation (2.1 × 1.2), while a sign with symbolic (2.3) object-relation does (2.3 × 3.2). The signs with indexicalic (2.2) object-relation appear as mediative sign classes in which the signs refer to their objects by referring to themselves, since the index appears also in their dual reality thematics as index.

4.6. Besides the fundamental semiotic difference relation (2.1 × 1.2), there is only one more basic difference relation:

(3.1 × 1.3),

since all other dual sign-relations are not basic. This second semiotic difference relation appears only in one of the self-referential sign classes with indexicalic object-relation:

(3.1 2.2 1.3)

and is both dual-invariant

(3.1 2.2 1.3) × (3.1 2.2 1.3)

and symmetric

(3.1 2×2 1.3).

The dual-invariance of the sign-class (3.1 2.2 1.3) says that there is no semiotic difference between the sign and its represented reality. The symmetric structure of both sign class and reality thematic shows that the self-referential indexicalic object relation (2.2) is embedded into the basic dual sign relation (1.3 × 3.1). Therefore, the sign class (3.1 2.2 1.3) was considered by Max Bense (1992) the sign class of the sign itself, i.e. this sign relation represents the sign itself, whose dual reality thematic is identical with the sign class.

Moreover, Walther (1982) showed that all other 9 sign classes and 9 reality thematics are connected by at least one and maximally two sub-signs with this sign class, which Bense called “eigenreal”. Therefore, the dual-identical eigenreal sign class is the only sign class, constructed over the sign-relation  $SR_{3,3}$ , which combines a basic semiotic difference relation ( $1.3 \times 1.3$ ) with an identitive morphism (2.2). Hence, in the sign class (3.1 2.2 1.3), semiotic difference and semiotic identity are combined. However, nevertheless, the origin of semiosis starts with the sign class (3.1 2.1 1.2), that represents, according to Bense (1983, pp. 53 s.) “natural” signs like “rests” or “traces”, that are “parts of an object”. Thus, the sign, and with it semiosis, starts, as has been assumed up to now, with natural signs, and as semiotic identity is posterior to semiotic difference, “artificial” signs, and amongst them the relation of a sign to itself in its eigenreality, are posterior to “natural” signs, whose phylogenetic ancienneté has also been shown by various authors.

## **Bibliography**

- Bense, Max, Semiotik. Baden-Baden 1967  
Bense, Max, Das Universum der Zeichen. Baden-Baden 1983  
Bense, Max, Die Eigenrealtat der Zeichen. Baden-Baden 1992  
Bense, Max/Walther, Elisabeth, Lexikon der Semiotik. Koln 1973  
de Saussure, Ferdinand, Cours de linguistique generale. Paris 1916  
Noth, Winfried, Opposition as the roots of semiosis. In: Noth, Winfried (ed.), Origins of Semiosis. Berlin 1994, pp. 37-60  
Spencer Brown, Georges, Laws of Form. London 1969  
Toth, Alfred, Semiotische Strukturen und Prozesse. Klagenfurt 2008  
Walther, Elisabeth, Nachtrag zu Trichotomischen Triaden. In: Semiosis 27, 1982, pp. 15-20

©2008, Prof. Dr. Alfred Toth