Prof. Dr. Alfred Toth

The sign as relation over relations

1. According to Peirce and Bense (1981, pp. 104 ss.), the sign relation is introduced as a relation over a monadic, a dyadic and a triadic relation, thus as a relation over relations. We may not it as follows:

SR = (3.a 2.b 1.c) = ((3.a 2.b 1.c), ((2.b 1.c), (1.c)))

This is the general scheme for the triadic order of a sign relation, while the trichotomic order is as follows:

SR* = (c.1 b.2 a.3) =(((c.1), (b.2 a.3)), (c.1 b.2 a.3))

However, according to Toth (2008, pp. 223 ss.), each sign class is but one representative of a system of 6 transpositions of different **semiotic order**:

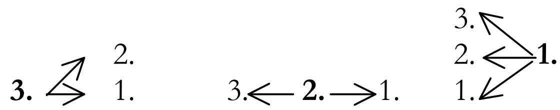
SR1 = (3.a 2.b 1.c) = ((3.a 2.b 1.c), ((2.b 1.c), (1.c)))
SR2 = (3.a 1.c 2.b) = ((3.a 1.c 2.b) ((1.c 2.b), (2.b)))
SR3 = (2.b 3.a 1.c) = ((2.b 3.a 1.c) ((3.a 1.c), (1.c)))
SR4 = (2.b 1.c 3.a) = ((2.b 1.c 3.a) ((1.c 3.a), (3.a)))
SR5 = (1.c 3.a 2.b) = ((1.c 3.a 2.b) ((3.a 2.b), (2.b)))
SR6 = (1.c 2.b 3.a) = ((1.c 2.b 3.a) ((2.b 3.a), (3.a)))

These 6 transpositions thus correspond with the following types of triadic semiotic order:

SR1: 3. → 2. → 1.
SR2: 3. → 1. → 2.
SR3: 2. → 3. → 1.
SR4: 2. → 1. → 3.
SR5: 1. → 3. → 2.
SR6: 1. → 2. → 3.

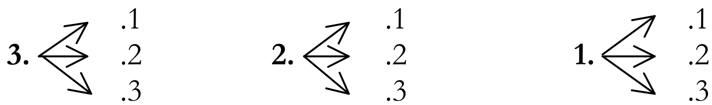
2. We now introduce the term of **semiotic binding**. As it is obvious from the following table, we have to differentiate between triadic and trichotomic semiotic binding:

1. Triadic sign-binding:



Thus, triadic thirdness (3.) can only bind to the right and only triadic secondness (2.) and triadic firstness (1.). Triadic secondness (2.) can bind to the left – only triadic thirdness (3.) – and to the right – only triadic firstness (1.). Triadic firstness (1.) can only bind to the left and both triadic firstness (3.), triadic secondness (2.) and triadic (thirdness).

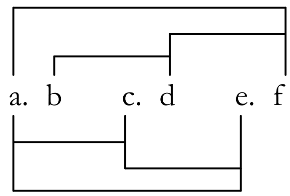
2. Trichotomic sign-binding:



Both triadic firstness (1.), triadic secondness (2.) and triadic thirdness (3.) can bind to the right both trichotomic firstness (.1), trichotomic secondness (.2) and trichotomic thirdness (.3). Since the triadic values are constant and the each three theoretically possible trichotomic values are restricted by the semiotic law of inclusion (.b) ≤ (.d) ≤ (.f), the mapping from sign classes onto trichotomic values is bijective, and therefore the sign classes can be characterized by the trichotomic values alone:

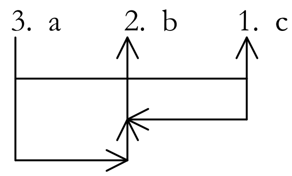
(.1	.1	.1)
(.1	.1	.2)
(.1	.1	.3)
(.1	.2	.2)
(.1	.2	.3)
(.1	.3	.3)
(.2	.2	.2)
(.2	.2	.3)
(.2	.3	.3)
(.3	.3	.3)
↑	↑	↑
(3.)	(2.)	(1.)

3. Therefore, we get the following general relational model for combined triadic and trichotomic sign-binding:

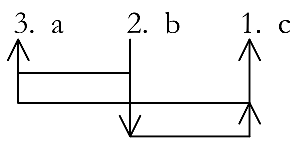


However, this relational model does not cover the sign relations of the semiotic order types present in SR2, SR3, SR4, SR5 and SR6:

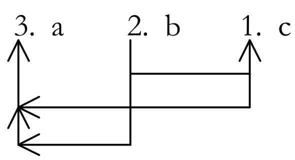
Relational model for SR2 = (3.a 1.c 2.b):



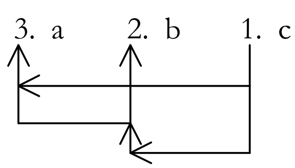
Relational model for SR3 = (2.b 3.a 1.c):



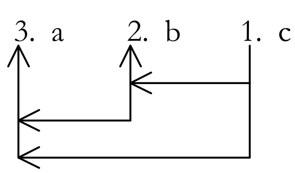
Relational model for SR4 = (2.b 1.c 3.a):



Relational model for SR5 = (1.c 3.a 2.b):



Relational model for SR6 = (1.c 2.b 3.a):



Bibliography

Bense, Max, Axiomatik und Semiotik. Baden-Baden 1981
Toth, Alfred, Semiotische Strukturen und Prozesse. Klagenfurt 2008

©2008, Prof. Dr. Alfred Toth