

Prof. Dr. Alfred Toth

Reference in poly-contextural semiotics

1. Semiotic reference has already been treated thoroughly in Toth (2008a, b), but in a strictly mono-contextural semiotic frame. In this paper, I will use poly-contextural semiotics as introduced by Kaehr (2009) and in other papers.
2. The basic idea of turning mono-contextural into poly-contextural semiotics is the notion of inner semiotic environment. Every sub-sign of the semiotic matrix, an environment in the form of contextural indices is assigned. Dual sub-signs get the same indices as long as they are in the same matrix. In Toth (2009), it was shown that in a 4-contextural semiotics, the 4 contextures can be ascribed, on the basis of Günther (1976, pp. 336 ss.), to the four combinations of subject and object in a 4-contextural logic:

M \equiv (.1.) \equiv objective subject (oS): thou/you
O \equiv (.2.) \equiv objective object (oO): it
I \equiv (.3.) \equiv subjective subject (sS): me/we
Q \equiv (.4.) \equiv subjective object (sO): he, she/they

However, from the $4! = 256$ possible combinations of these logical-semiotic relations, in a 4×4 4-contextural semiotic matrix, only 16 are semiotically represented:

$$\left(\begin{array}{cccc} 1.1_{1,3,4} & 1.2_{1,3} & 1.3_{1,4} & 1.4_{3,4} \\ 2.1_{1,3} & 2.2_{1,2,3} & 2.3_{1,2} & 2.4_{2,3} \\ 3.1_{1,4} & 3.2_{1,2} & 3.3_{1,2,4} & 3.4_{2,4} \\ 4.1_{3,4} & 4.2_{2,3} & 4.3_{2,4} & 4.4_{2,3,4} \end{array} \right)$$

Therefore, we can write the semiotic in form of the semiotically represented logical-semiotic relations:

$$\left(\begin{array}{cccc} \text{oS/sS/sO} & \text{oS/sS} & \text{oS/sO} & \text{sS/sO} \\ \text{oS/sS} & \text{oS/oO/sS} & \text{oS/oO} & \text{oO/sS} \\ \text{oS/sO} & \text{oS/oO} & \text{oS/oO/sO} & \text{oO/sO} \\ \text{sS/sO} & \text{oO/sS} & \text{oO/sO} & \text{oO/sS/sO} \end{array} \right)$$

Therefore, the 35 possible tetradic sign classes (cf. also Toth 2007, pp. 216 ss.)

(4.1 3.1 2.1 1.1)

(4.1 3.1 2.1 1.2)

(4.1 3.1 2.1 1.3)

(4.1 3.1 2.1 1.4)

(4.1 3.1 2.2 1.2)

(4.1 3.2 2.2 1.2)

(4.1 3.1 2.2 1.3)

(4.1 3.2 2.2 1.3)

(4.1 3.1 2.2 1.4)

(4.1 3.2 2.2 1.4)

(4.1 3.1 2.3 1.3)

(4.1 3.2 2.3 1.3)

(4.1 3.3 2.3 1.3)

(4.1 3.1 2.3 1.4)

(4.1 3.2 2.3 1.4)

(4.1 3.3 2.3 1.4)

(4.1 3.1 2.4 1.4)

(4.1 3.2 2.4 1.4)

(4.1 3.3 2.4 1.4)

(4.1 3.4 2.4 1.4)

(4.2 3.2 2.2 1.2)

(4.2 3.2 2.2 1.3)

(4.2 3.2 2.2 1.4)

(4.2 3.2 2.3 1.3)

(4.2 3.3 2.3 1.3)

(4.2 3.2 2.3 1.4)

(4.2 3.3 2.3 1.4)

(4.2 3.2 2.4 1.4)

(4.2 3.3 2.4 1.4)

(4.2 3.4 2.4 1.4)

(4.3 3.3 2.3 1.3)

(4.3 3.3 2.3 1.4)

(4.3 3.3 2.4 1.4)

(4.3 3.4 2.4 1.4)

(4.4 3.4 2.4 1.4)

can be rewritten, in a first step, as classes of semiotic indices (of inner environments)

- (3,4 1,4 1,3 1,3,4)
- (3,4 1,4 1,3 1,3)
- (3,4 1,4 1,3 1,4)
- (3,4 1,4 1,3 3,4)

- (3,4 1,4 1,2,3 1,3) (3,4 1,2 1,2,3 1,3)
- (3,4 1,4 1,2,3 1,4) (3,4 1,2 1,2,3 1,4)
- (3,4 1,4 1,2,3 3,4) (3,4 1,2 1,2,3 3,4)

- (3,4 1,4 1,2 1,4) (3,4 1,2 1,2 1,4) (3,4 1,2,4 1,2 1,4)
- (3,4 1,4 1,2 3,4) (3,4 1,2 1,2 3,4) (3,4 1,2,4 1,2 3,4)

- (3,4 1,4 2,3 3,4) (3,4 1,2 2,3 3,4) (3,4 1,2,4 2,3 3,4) (3,4 2,4 2,3 3,4)

- (3,2 1,2 1,2,3 1,3)
- (3,2 1,2 1,2,3 1,4)
- (3,2 1,2 1,2,3 3,4)

- (3,2 1,2 1,2 1,4) (3,2 1,2,4 1,2 1,4)
- (3,2 1,2 1,2 3,4) (3,2 1,2,4 1,2 3,4)

- (3,2 1,2 2,3 3,4) (3,2 1,2,4 2,3 3,4) (3,2 2,4 2,3 3,4)

- (2,4 1,2,4 1,2 1,4)
- (2,4 1,2,4 1,2 3,4) (2,4 1,2,4 2,3 3,4) (2,4 2,4 2,3 3,4) (2,3,4 2,4 2,3 3,4)

and in a second and last step as classes of logical-semiotic relations

- (sS,sO oS,sO oS,sS oS,sS,sO)
- (sS,sO oS,sO oS,sS oS,sS)
- (sS,sO oS,sO oS,sS oS,sO)
- (sS,sO oS,sO oS,sS sS,sO)

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

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

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

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

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

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

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

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

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

These 15 sets of logical-semiotic relations thus show all possible types of reference that are poly-contextural-semiotically represented in a 4-contextural semiotic 4×4-matrix. In other words: The 15 sets contain all those types of crossings of the contextural-borders between subject and object which can be represented in a 4-contextural semiotics capable of handling the 4 types of subject-object combinations of a 4-contextural logic.

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