Prof. Dr. Alfred Toth

The Saussurean sign model and its formal representation

In memoriam Prof. Dr. Theodor Ebneter (1923-2003)

1. The Saussurean sign model is dyadic (de Saussure 1967, pp. 76 ss.). It stays formally dyadic even if the signifié-relation could be proven a relation between a dyadic and a triadic relation (cf. Toth 1991).

2. Every n-ary relation has its closure in an (n+1)-ary relation (cf. Robertson 2005).

3. Every n-ary logical system is morphogrammatically incomplete and a fragment of an (n+1)-ary morphogrammatic system (Günther 1976, pp. 213 ss.).

4. Conclusion: Topologically, the dyadic Saussurean sign model must have its closure in a triadic sign model (2.). Logically, it is a fragment of a contextuated sign model with more than 2 contextures (3.), cf. esp. Kaehr 2009.

5. Because of (2.) we assume a triadic semiotic relation, but because of morphogrammatic reasons (3.), we have 4 contextures, so we better start with a tetradic semiotic matrix, in which the relation between sub-signs and inner environments (combinations of contextural indices) is not underbalanced.

6. Because of Bense's differentiation between categorial (c) and relational (r) numbers (1975, pp. 45 s., 65 ss.), we have $r \neq 0$, while categorial numbers are $c \geq 0$. So, iterations of zero-relations are excluded (*(0.0)), since pure objectivity has no subjective power (i.e. objects in the ontological space are incapable of entering relations). However, we have (0.1), (0.2), (0.3), (0.4).

7. We are now able to construct the following semiotic 4×4 (tetradic-tetratmic) matrix, in which we also enter the contextural numbers for a 4-contextural matrix.

$$\begin{pmatrix} 0.1_{3,4} & 0.2_{2,3} & 0.3_{2,4} & 0.4_{2,3,4} \\ 1.1_{1,3,4} & 1.2_{1,3} & 1.3_{1,4} & 1.4_{3,4} \\ 2.1_{1,3} & 2.2_{1,2,3} & 2.3_{1,2} & 2.4_{2,3} \\ 3.1_{1,4} & 3.2_{1,2} & 3.3_{1,2,4} & 3.4_{2,4} \end{pmatrix}$$

8. This matrix can be divided, or "decomposed" into the following 48 sub-matrices:

0.1 0.2	0.2 0.3	0.3 0.4
1.1 1.2	1.2 1.3	1.3 1.4

0.1 0.3	0.1 0.4	0.2 0.4
1.1 1.3	1.1 1.4	1.2 1.4

1.1 1.2	1.2 1.3	13 1.4
2.2 2.3	2.2 2.3	2.2 2.43

1.1 1.3	1.1 1.4	1.2 1.4
2.1 1.3	2.1 2.4	2.2 2.4

2.1 2.2	2.2 2.3	2.3 2.4
3.1 3.2	3.2 3.3	3.3 3.4

2.1	2.3	2.1	2.4	2.2	2.4
3.1	1.3	3.1	2.4	3.2	3.4

0.1	0.2	0.2	0.3	0.3	0.4
2.1	2.2	2.2	2.3	2.3	2.4

0.1	0.3	0.1	0.4	0.2	0.4
2.1	1.3	2.1	2.4	2.2	2.4

0.1	0.2	0.2	0.3	0.3	0.4
3.1	3.2	3.2	3.3	3.3	3.4

0.1	0.3	0.1	0.4	0.2	0.4
3.1	3.3	3.1	3.4	3.2	3.4

1.1	1.2	1.2	1.3	13	1.4
3.1	3.2	3.2	3.3	3.3	3.4

1.1	1.3	1.1	1.4	1.2	1.4
3.1	4.3	3.1	3.4	3.2	3.4

1.1	1.2	1.2	1.3	13	1.4
4.1	4.2	4.2	4.3	4.3	4.4

1.1	1.3	1.1	1.4	1.2	1.4
4.1	4.3	4.1	4.4	4.2	4.4
1.1	1.2	1.2	1.3	13	1.4
4.1	4.2	4.2	4.3	4.3	4.4
1.1	1.3	1.1	1.4	1.2	1.4
4.1	4.3	4.1	4.4	4.2	4.4

9. Each of the 4 sub-signs of these 48 2×2 sub-matrices can be contextuated now, whereby sub-signs of the form (a.b) → (a.b)$_{i,j}$ and sub-signs of the form (a.a) → (a.a) $_{i,,j,k}$

10. Final summary: The Saussurean dyadic sign model can be mapped on 48 dyadic sign models as 3×3 sub-matrices in 4 contextures, based on the 3-adic Peircean sign model. If one constructs sign classes from these 4 sub-signs pro each of the 48 models, there is always (3-2) = 1 fundamental category lacking. The insight that the Saussurean signifiant-signifié-model is realized in only 1 of 48 possibilities, shows that it is defective ("Le signifiant désigne l'image acoustique d'un mot". Le signifié désigne le concept, c'est-à-dire la représentation mentale d'une chose."), but also connected with the 47 matrices partly via sub-signs/semioses (morphisms) and/or inner environments (contextures). The application of contexturality theory to the Saussurean sign model also shows a potential for the enlargement of Saussurean semiotics and from there to linguistics.

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22.4.2009