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Time as semiotic contexture

1. According to Gotthard Günther it is possible to develop a contextual notion of time: “Zeit ist, strukturtheoretisch betrachtet, nichts anderes als die Aktivierung einer Diskontextualitätsrelation zwischen Vergangenheit und Zukunft” (1979, p. 191). As such, time can be, in concordance with the poly-contextual “Life Lines” (Günther 1979, pp. 283 ss.), linear, non-linear or multi-linear (cf. Toth 2008a, pp. 57-67). After I have given a monocontextual model for semiotic time in Toth (2008b), I will add some more considerations here, and the basis of the contextuated sign relation introduced by Kaehr (2008).

2. Like a golden thread, the alleged timelessness of signs goes through the history of semiotics, roughly speaking from Aristoteles to Bense. Mostly, time is not even mentioned in connection with signs, although every child knows that it needs time to write something down, to make a node into the handkerchief or explain a foreigner the way to the Hofbräuhaus. In Toth (2008a, pp. 177 ss.), I have shown that every sign relation has 6 permutations:

- (3.a 2.b 1.c)
- (3.a 1.c 2.b)
- (2.b 3.a 1.c)
- (2b. 1.c 3.a)
- (1.c 3.a 2.b)
- (1.c 2.b 3.a)

When we insert values for the variables $a, b, c \in \{.1, .2, .3\}$, we get the 10 quantitative sign classes, which we can, according to Toth (2009), write as unordered sets of trichotomic values. However, if we now ascribe contextures to each dyad of every sign relation, we also get in the case of a 3-contextual sign model the 10 quantitative-qualitative sign classes. In a last step, we can use ordered sets of contextures and ordered partial sets of contextures in order to give a purely qualitative system of sign relations:

$$\begin{aligned} (3.1 \ 2.1 \ 1.1) &\equiv (1, 1, 1) \equiv (3.1_3 \ 2.1_1 \ 1.1_{1,3}) \equiv \langle 3, 1, \langle 1, 3 \rangle \rangle \\ (3.1 \ 2.1 \ 1.2) &\equiv (1, 1, 2) \equiv (3.1_3 \ 2.1_1 \ 1.2_1) \equiv \langle 3, 1, 1 \rangle \end{aligned}$$

(3.1 2.1 1.3)	≡	(1, 1, 3)	≡	(3.1 ₃ 2.1 ₁ 1.3 ₃)	≡	<3, 1, 3>
(3.1 2.2 1.2)	≡	(1, 2, 2)	≡	(3.1 ₃ 2.2 _{1,2} 1.2 ₁)	≡	<3, <1, 2>, 1>
(3.1 2.2 1.3)	≡	(1, 2, 3)	≡	(3.1 ₃ 2.2 _{1,2} 1.3 ₃)	≡	<3, <1, 2>, 3>
(3.1 2.3 1.3)	≡	(1, 3, 3)	≡	3.1 ₃ 2.3 ₂ 1.3 ₃)	≡	<3, 2, 3>
(3.2 2.2 1.2)	≡	(2, 2, 2)	≡	(3.2 ₂ 2.2 _{1,2} 1.2 ₁)	≡	<2, <1, 2>, 1>
(3.2 2.2 1.3)	≡	(2, 2, 3)	≡	(3.2 ₂ 2.2 _{1,2} 1.3 ₃)	≡	<2, <1, 2>, 3>
(3.2 2.3 1.3)	≡	(2, 3, 3)	≡	(3.2 ₂ 2.3 ₂ 1.3 ₃)	≡	<2, 2, 3>
(3.3 2.3 1.3)	≡	(3, 3, 3)	≡	(3.3 _{2,3} 2.3 ₂ 1.3 ₃)	≡	<<2, 3>, 2, 3>

3. Now we come back to Günther's definition of time as "nothing else but the activation of a discontextuality relation between past and future" (1979, p. 191). Thus, we get the following system of permutations for our triadic sets of time-contextures:

- $P(T_1) = (<3, 1, <1, 3>>, <3, <1, 3>, 1>, <<1, 3>, 3, 1>, <<1, 3>, 1, 3>, <1, 3, <1, 3>>, <1, <1, 3>, 3>>)$
 $P(T_2) = (<3, 1, 1>, <1, 3, 1>, <1, 1, 3>, <3, 1, 1>)$
 $P(T_3) = (<3, 1, 3>, <1, 3, 1>, <3, 3, 1>, <1, 3, 3>)$
 $P(T_4) = (<3, <1, 2>, 1>, <3, 1, <1, 2>>, <<1, 2>, 1, 3>, <<1, 2>, 3, 1>, <1, <1, 2>, 3>, <1, 3, <1, 2>>)$
 $P(T_5) = (<3, <1, 2>, 3>, <<1, 2>, 3, 3>, <3, 3, <1, 2>>)$
 $P(T_6) = (<3, 2, 3>, <3, 3, 2>, <2, 3, 3>)$
 $P(T_7) = (<2, <1, 2>, 1>, <2, 1, <1, 2>>, <<1, 2>, 2, 1>, <<1, 2>, 1, >, <1, <1, 2>, 2>, <1, 2, <1, 2>)$
 $P(T_8) = (<2, <1, 2>, 3>, <2, 3, <1, 2>>, <<1, 2>, 2, 3>, <<1, 2>, 3, 2>, <3, <1, 2>, 2>, <3, <1, 2>, 2>)$
 $P(T_9) = (<2, 2, 3>, <3, 2, 2>, <2, 3, 2>)$
 $P(T_{10}) = (<<2, 3>, 2, 3>, <<2, 3>, 3, 2>, <3, 2, <2, 3>>, <3, <2, 3>, 2>, <2, <2, 3>, 3>, <2, 3, <2, 3>>)$

These 47 combinatorial types of time-contextures are thus all that are reachable in a 3.contextural 3-adic semiotics. If we combine them again amongst themselves, we get quickly very highly complicated semiotic time-structures – in opposition, of course, to the phantasma of time-free sign notion.

Bibliography

Günther, Gotthard, Idee und Grundriss einer nicht-aristotelischen Logik. 3rd ed. Hamburg 1991

- Kaehr, Rudolf, Diamond semiotics. Kaehr, Rudolf, Diamond Semiotics.
<http://www.thinkartlab.com/pkl/lola/Diamond%20Semiotics/Diamond%20Semiotics.pdf> (2008)
- Toth, Alfred, Semiotische Strukturen und Prozesse. Klagenfurt 2008 (2008a).
- Toth, Alfred, Auf dem Weg zu einer polykontextural-semiotischen Theorie der Zeit. In: <http://www.mathematical-semiotics.com/pdf/A.d.Weg%20zu%20e.%20poly.-sem.%20Th.d.Zeit.pdf> (2008b)
- Toth, Alfred, Polycontextural matrices. In: Electronic Journal for Mathematical Semiotics, www.mathematical-semiotics.com (2009)