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Contextuated and non-contextuated polycontextural semiotics

1. One concept of polycontextural semiotics in which the contextures are independent from the dimensions of the sign relations goes back to Kaehr (2008). Kaehr assigns each sub-sign of the 3×3 semiotic matrix their inner environments or contextures:

$$\begin{pmatrix} 1.1_{1,3} & 1.2_{1} & 1.3_{3} \\ 2.1_{1} & 2.2_{1,2} & 2.3_{2} \\ 3.1_{3} & 3.2_{2} & 3.3_{2,3} \end{pmatrix}$$

Here, we see that the numbers of the contextures are independent of the n-adic structure of the dyadic sub-signs. E.g., (1.2) and (2.1), (1.3) and (3.1), (2.3) and (3.2), generally: (a.b) and (a.b)° lie in the same contexture. However, this is only the case for the closed world of a sign class and for the also closed world of a reality thematics, but not between them, since by dualization, the order of the environments change; generally: $\times(a.b)_{i,j} = (b.a)_{j,i}$. We thus need TWO semiotic matrices, one for the subjective world of the signs and one for the objective world of their realities. The polycontextural still mediates between world an consciousness, but also states their difference at the same time!

From the following table

Monads	1, 3
Dyads	1, 2
Triads	2, 3

we see that monads can no only lie in C = 1, but also in C = 3, that dyads can not only lie in C = 1, but also in C = 2, and triads both in C = 2 and in C = 3. One has to be aware that all sub-signs are insofar dyadic as they are Cartesian products, but only 3 dyads are dyadic *sensu stricto*, namely Cartesian products with 2 as first factor. This situation points to a semiotic "particle"-dualism.

2. Another concept of polycontextural semiotics has been suggested by Toth (2003). The basic idea is here not, like in the former concept, to "cross-contextuate" the sub-signs and turning them in this way into polycontextural relations, but two assume that in polycontextural semiotics contextures and dimensions of a sign are identical.

Therefore, we have

1-contextural/1-dimensional semiotics

0	1, 2, 3

2-contextural/2-dimensional semiotics

00	(1.1), (2.2), (3.3)
01	(1.2)/(2.1), (1.3)/(3.1), (2.3)/(3.2)

3-contextural/3-dimensional semiotics

000	(1.1.1), (2.2.2), (3.3.3)
001	(1.1.2), (1.1.3), (2.2.1), (2.2.3), (3.3.1), (3.3.2)
010	(1.2.1), (1.3.1), (2.1.2), (2.3.2), (3.1.3), (3.2.3)
012	(1.2.3), (1.3.2), (2.1.3), (2.3.1), (3.1.2), (3.2.1)

4-contextural/4-dimensional semiotics

0000	(0.0.0.), (1.1.1.1) (2.2.2.2), (3.3.3.)
0001	(0001), (0002), (0003)
0010	(0010), (020), (0030)
0011	(0011), (0022), (0033)
0012	(0012), (0013), (0,14)
0100	(0100), (0200), (0300)
0101	(0101), (0202), (0303),
0102	(0102), (0103), (0203), (0204), (0302), (0304)
0110	(0110), (0220), (0330)
0111	(0111), (0222), (0333)
0112	(0112), (0113), (0221), (0223), (0331), (0332)
0120	(0120), (0130), (0210), (0230), (0310), (0320)
0121	(0121), (0131), (0212), (0232), (0313), (0323)
0122	(0122), (0133), (0211), (0233), (0311), (0322)

0123 (0123), (0132), (0213), (0231), (0312), (0321)

1-dimensional/1-contextural semiotics contains exactly the three fundamental categories of Peirce-Bensean semiotics. 2-dimensional/2-contextural semiotics contains exactly the 9 dyadic sub-signs which Bense had constructed as Cartesian Products out of Peirce's sequence of fundamental categories. 3-dimensional/3-contextural semiotics corresponds exactly to Stiebings's Sign-Cube (Stiebing 1977), and 4-dimensional/4-contextural semiotics is one of the many possibilities to construct a semiotics (or pre-semiotics) in which the contexture border between sign and object is abolished (Toth 2008a, b, c). As a kind of "proof" can be taken that the 1, 2, 4, and 15 choices of the qualitative numbers 1, 2, 3 and 4 deliver exactly the empty forms in which the respective 1-, 2-, 3-, and 4-dimensional sub-signs and not one less and not one more can be filled in. Thus, the general structures of the sub-signs of the 4 semiotics are:

1-dimensional/1-contextural semiotics: (a), $a \in \{1, 2, 3\}$
2-dimensional/2-contextural semiotics: (a.b), $a, b \in \{1, 2, 3\}$
3-dimensional/3-contextural semiotics: (a.b.c), $a, b, c \in \{1, 2, 3\}$
4-dimensional/4-contextural semiotics: (a.b.c.d), $a, ..., d \in \{1, 2, 3\}$

Ambiguous are the constructions of sign classes in 3-dimensional/3-contextural and in 4-dimensional/4-contextural semiotics:

1st possibility for interpretation of 3-adic sub-sign in 3-dim/3-cont sign classes:

(3.a.b 2.c.d 1.e.f) $\rightarrow$ (3.(a.b) 2.(c.d) 1.(e.f), where $a, ..., f \in \{1, 2, 3\}$

2nd possibility for interpretation of 3-adic sub-sign in 3-dim/3-cont sign classes:

(3.a.b 2.c.d 1.e.f) $\rightarrow$ ((3.a) .b) (2.c) .d) (1.e) .f), where $a, ..., f \in \{1, 2, 3\}$

Similar for 4-dim/4-cont sign classes. Special attention belongs to the question, if the Law of Triadicity has to be abolished, e.g.

(3.a.b 2.c.d 1.e.f) $\rightarrow$ (3.(3.b) 2.(2.d) 1.(1.f), or

(3.(3/2/1.b) 2.(2/1/3.d) 1.(1/2/3.f), and combinations.

The 2nd possibility may also be defined so, that (b, d, f) are the dimensional numbers:

((3.a) .b) (2.c) .d) (1.e) .f)),

whereby in this case dimensional number not have to be restricetd to 3; in the case of b = d = f, b, d, f > 3, we have a tower (Toth 2008b), which can be built as high as the Tower of Babylon where the growth of dimensions strops when the 3-rd dimension is reached.

The advantage of this second concept of polycontextural semiotics is not only that it is possible to differentiate between contextural and dimensional numbers, but since we have here

(1) n-adic sign relation = nth dimension = nth contexture,

the contextural indices (inner semiotic environments) can still be added in order to refine semiotic analysis or to enlarge semiotic complexity. We are thus capable of combining the two concepts of polycontextural semiotics presented in this article. The fundamental reason, why they are two concepts, we can answer by having another look at the semiotic matrix:

$$\begin{array}{c|ccccc}
 & r1 & \rightarrow & r2 & \rightarrow & r3 \\
\hline
R1 & 1.1_{1,3} & & 1.2_{1} & & 1.3_{3} \\
\downarrow & & & & & \\
R2 & 2.1_{1} & & 2.2_{1,2} & & 2.3_{2} \\
\downarrow & & & & & \\
R3 & 3.1_{3} & & 3.2_{2} & & 3.3_{2,3}
\end{array}$$

Rx: Monad, Dyad, Triad in triadic value

rx: Monad, Dyad, Triad in trich. value

Each of these sub-signs is a Cartesian product of PZ → PZ (= {1, 2, 3} → (1, 2, 3) and thus formally a dyad. However, semantically, only the genuine sub-signs (identitive morphisms) are relationally homogeneous, i.e. (1.1), (2.2), (3.3), while the rest is mixed between R1R2, R1R3, R2R3 and their converses, i.e. they are semantically everything else than dyads. This is, roughly speaking, the situation in monocontextural semiotics. The decisive step beyond this concept taken by polycontextural semiotics is thus that with abolishment of the logical law of identity the relational homogeneity of the genuine sub-signs, too, is taken away. Strictly speaking, from such a concept it follows that the assignment of contextural indices to sub-signs is (almost) completely arbitrary and the above model is just one solution (cf. Toth 2009). However, from that, it also follows, that the equality between dimensions and contextures is abolished (and that between n-relationality and n-dim., n-cont. anyway). In short, we have here

(2) n-adic sign relation ≠ nth dimension ≠ nth contexture

3. After our results have been presented so far, there is one more logical step to make, namely to combine the two models of a polycontextural semiotics, i.e. Kaehr's model (2008) and Toth's model (2003):

1-contextural/1-dimensional semiotics

0 $1_{1,3}$, $2_{1,2}$, $3_{2,3}$

2-contextural/2-dimensional semiotics

00 $(1.1)_{1,3}$, $(2.2)_{1,2}$, $(3.3)_{2,3}$
01 $(1.2)_1/(2.1)_1$, $(1.3)_3/(3.1)_3$, $(2.3)_2/(3.2)_2$

3-contextural/3-dimensional semiotics

Here, we have either (a.b.c) = ((a.b.) c) or (a (.b.c)) with right or left movement of the dimensional number. We will define (a.b.c) := ((a.b.) c).

000 $(1.1_{1,3}).1)$, $(2.2_{1,2}).2)$, $(3.3_{2,3}).3)$
001 $(1.1_{1,3}).2)$, $(1.1_{1,3}).3)$, $(2.2_{1,2}).1)$, $(2.2_{1,2}).3)$, $(3.3_{2,3}).1)$, $(3.3_{2,3}).2)$
010 $(1.2_1).1)$, $(1.3_3).1)$, $(2.1_1).2)$, $(2.3_2).2)$, $(3.1_3).3)$, $(3.2_2).3)$
012 $(1.2_1).3)$, $(1.3_3).2)$, $(2.1_1).3)$, $(2.3_2).1)$, $(3.1_3).2)$, $(3.2_2).1)$

4-contextural/4-dimensional semiotics

Here, we use the assignment of contextural indices to the (dyadic) sub-signs of a 4×4 matrix by Kaehr (2008, p. 6), i.e. each ordered pair of dyads will be treated here as a (simple) dyad:

0000 $(0.0_{2,3,4}\ 0.0_{2,.3,4})$, $(1.1_{1,3,4}\ 1.1_{1,3,4})$ $(2.2_{1,2,4}\ 2.2_{1,2,4})$, $(3.3_{1,2,4}\ 3.3_{1,2,4})$
0001 $(0.0_{2,3,4}\ \ 0.1_{1,4})$, $(0.0_{2,3,4}\ \ 0.2_{1,2})$, $(0.0_{2,3,4}\ \ 0.3_{2,4})$
0010 $(0.0_{2,3,4}\ \ 1.0_{1,4})$, $(0.0_{2,3,4}\ \ 2.0_{1,2})$, $(0.0_{2,3,4}\ \ 3.0_{2,4})$
0011 $(0.0_{2,3,4}\ \ 1.1_{1,3,4})$, $(0.0_{2,3,4}\ \ 2.2_{1,2,4})$, $(0.0_{2,3,4}\ 3.3_{2,3,4})$
0012 $(0.0_{2,3,4}\ \ 1.2_{2,4})$, $(0.0._{2,3,4}\ \ 1.3_{2,4})$, $(0.0_{2,3,4}\ \ 1.4_{3,4})$

$01_{1,4}\ 00_{1,1,4}$	$(0.1_{1,4}\ 0.0_{2,3,4})$, $(0.2_{1,2}\ 0.0_{2,3,4})$, $(0.3_{2,4}\ 0.0_{2,3,4})$
$01_{1,4}\ 01_{1,24}$	$(0.1_{1,4}\ 0.1_{1,4})$, $(0.2_{1,2}\ 0.2_{1,2})$, $(0.3_{2,4}\ 0.3_{2,4})$,
$01_{1,4}\ 02_{3.4.}$	$(0.1_{1,4}\ 0.2_{1,2})$, $(0.1_{1,4}\ 0.3_{2,4})$, $(0.2_{1,2}\ 0.3_{2,4})$, $(0.2_{1,2}\ 0.4_{2,3,})$, $(0.3_{2,4}\ 0.2_{1,2})$, $(0.3_{2,4}\ 0.4_{2,3})$
$01_{1,4}\ 10_{1,4}$	$(0.1_{1,4}\ 1.0_{1,4})$, $(0.2_{1,2}\ 2.0_{1,2})$, $(0.3_{2,4}\ 3.0_{2,4})$
$01_{1,4}\ 11_{1,3,4}$	$(0.1_{1,4}\ 1.1_{1,3,4})$, $(0.2_{1,2}\ 2.2_{1,2,4})$, $(0.3_{2,4}\ 3.3_{2,3,4})$
$01_{1,4}\ 12$	$(0.1_{1,4}\ 1.2_{1,4})$, $(0.1_{1,4}\ 1.3_{2,4})$, $(0.2_{1,2}\ 2.1_{1,4})$, $(0.2_{1,2}\ 2.3_{2,4})$, $(0.3_{2,4}\ 3.1_{3,4})$, $(0.3_{2,4}\ 3.2_{2,4})$
$01_{1,4}\ 20$	$(0.1_{1,4}\ 2.1_{1,4})$, $(0.1_{1,4}\ 3.0_{2,4})$, $(0.2_{1,2}\ 1.0_{1,4})$, $(0.2_{1,2}\ 3.0_{2,4})$, $(0.3_{2,4}\ 1.0_{1,4})$, $(0.3_{2,4}\ 2.0_{2,1})$
$01_{1,4}\ 21_{1}$	$(0.1_{1,4}\ 2.1_{1,4})$, $)0.1_{1,4}\ 3.1_{3,4})$, $(0.2_{1,2}\ 1.2_{1})$, $(0.2_{1,2}\ 3.2_{1,2})$, $(0.3_{2,4}\ 1.3_{2,4})$, $(0.3_{2,4}\ 2.3_{2,.4})$
$01_{1,4}\ 22_{1,}$	$(0.1_{1,4}\ 2.2_{1,2,4})$, $(0.1_{1,4}\ 3.3)$, $(0.2_{1,2}\ 1.1_{1,3,4})$, $(0.2_{1,2}\ 3.3)$, $(0.3_{2,4}\ 1.1_{1,2,4})$, $(0.3_{2,4}\ 2.2_{1,2,4})$
$01_{1,4}\ 23_{1,2}$	$(0.1_{1,4}\ 2.3_{2,4})$, $(0.1_{1,4}\ 3.2_{24})$, $(0.2_{1,2}\ 1.3_{14})$, $(0.2_{1,2}\ 3.1_{3,4})$, $(0.3_{2,4}\ 1.2_{1,4})$, $(0.3_{2,4}\ 2.1_{1,4})$

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