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Lokality and local connectivity of polykontectural dual systems

1. Traditionally, the relationship between a sign class (SCl) and its corresponding reality thematic (RTh) is called dual, because in monocontextural semiotics, they are really dual, e.g.

$(3.1\ 2.2\ 1.2)$
$\times(3.1\ 2.2\ 1.2) = (2.1\ 2.2\ 1.3)$

However, as Kaehr (2008) has shown, in all semiotic contextures K > 1, this duality not hold anymore, e.g.

$(3.1_3\ 2.2_{1,2}\ 1.2_1)$
$\times(3.1_3\ 2.2_{1,2}\ 1.2_1) = (2.1_1\ 2.2_{2,1}\ 1.3_1)$,

since $(1,2 \neq 2,1)$. This disequality concerns the direction between the two contextures in which the sub-sign (2.2) lies. Therefore, for sign relations, not only the locality (contexture) counts, but also the local connectivity. Thus, Kaehr replaces the term dual by the term complementary, although the operation of dualization (×) is commonly used in semiotics.

In Toth (2009), I had shown that every 3-adic 3-contextural sign class can appear in 48 combination of contextures, which construct a semiotic system. A a 3-adic 3-contextural sign class has the abstract form

$SCl(3,3) = (3.a_{i,j}\ 2.b_{k,l}\ 1.c_{m,n})$,

whereby i, ..., n ∈ {1, 2, 3} and j = l = n = ∅, unless in identitive morphisms ("genuine sub-signs").

In this supplement to Toth (2009), I introduce a very simple diagram in order to show the ontexture(s) as well as the connectivity of the contextures of each of the 3 sub-signs of the SCl(3,3). As an example, I have chosen (3.1 2.2 1.2), because here K(3.1) ≠ K(1.2), and K(2.2) lies always in two different contextures. In order to avoid arrows, the primordiality of connected contextures is pointed out by bold coloring of the primordially first element of an ordered pair of contextures.

2. Lokality and local connectivity of polykontectural dual systems

1) $(3.1_2\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_2)$

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2) $(3.1_2\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_2)$

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3) $(3.1_2\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_2)$

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4) $(3.1_2\ 2.2_{2,3}1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_2)$

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5) $(3.1_2\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_2)$

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6) $(3.1_2\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_2)$

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7) $(3.1_1\ 2.2_{1,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,1}\ 1.3_1)$

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8) $(3.1_1\ 2.2_{2,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,2}\ 1.3_1)$

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9) $(3.1_1\ 2.2_{1,2}\ 1.2_2) \times (2.1_2\ 2.2_{2,1}\ 1.3_1)$

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10) $(3.1_1\ 2.2_{1,2}\ 1.2_2) \times (2.1_2\ 2.2_{2,1}\ 1.3_1)$

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11) $(3.1_1\ 2.2_{1,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,1}\ 1.3_1)$

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12) $(3.1_1\ 2.2_{1,2}\ 1.2_2) \times (2.1_2\ 2.2_{2,1}\ 1.3_1)$

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13) $(3.1_3\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_3)$

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14) $(3.1_3\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_3)$

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15) $(3.1_3\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_3)$

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16) $(3.1_3\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_3)$

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17) $(3.1_3\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_3)$

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18) $(3.1_3\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_3)$

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19) $(3.1_1\ 2.2_{1,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,1}\ 1.3_1)$

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20) $(3.1_1\ 2.2_{2,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,2}\ 1.3_1)$

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21) $(3.1_1\ 2.2_{1,2}\ 1.2_3) \times (2.1_3\ 2.2_{2,1}\ 1.3_1)$

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22) $(3.1_1\ 2.2_{2,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,2}\ 1.3_1)$

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23) $(3.1_1\ 2.2_{1,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,1}\ 1.3_1)$

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24) $(3.1_1\ 2.2_{1,2}\ 1.2_3) \times (2.1_3\ 2.2_{2,1}\ 1.3_1)$

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25) $(3.1_2\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_2)$

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26) $(3.1_2\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_2)$

$$\begin{array}{ccc} \square & \boxdot & \square \\ \boxdot & \boldsymbol{\boxdot} & \square \\ \square & \square & \boxdot \end{array} \qquad \begin{array}{ccc} \square & \boldsymbol{\boxdot} & \square \\ \square & \boxdot & \boxdot \\ \boxdot & \square & \square \end{array}$$

27) $(3.1_2\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_2)$

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28) $(3.1_2\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_2)$

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29) $(3.1_2\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_2)$

$$\begin{array}{ccc} \square & \boxdot & \square \\ \boxdot & \square & \square \\ \square & \boldsymbol{\boxdot} & \boxdot \end{array} \qquad \begin{array}{ccc} \square & \boldsymbol{\boxdot} & \square \\ \square & \square & \boxdot \\ \boxdot & \boxdot & \square \end{array}$$

30) $(3.1_2\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_2)$

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31) $(3.1_1\ 2.2_{1,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,1}\ 1.3_1)$

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32) $(3.1_1\ 2.2_{2,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,2}\ 1.3_1)$

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33) $(3.1_1\ 2.2_{1,2}\ 1.2_2) \times (2.1_2\ 2.2_{2,1}\ 1.3_1)$

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34) $(3.1_1\ 2.2_{2,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,2}\ 1.3_1)$

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35) $(3.1_1\ 2.2_{1,2}\ 1.2_2) \times (2.1_2\ 2.2_{2,1}\ 1.3_1)$

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36) $(3.1_1\ 2.2_{1,3}\ 1.2_2) \times (2.1_2\ 2.2_{3,1}\ 1.3_1)$

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37) $(3.1_3\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_3)$

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38) $(3.1_3\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_3)$

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39) $(3.1_3\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_3)$

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\end{array}$$

40) $(3.1_3\ 2.2_{2,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,2}\ 1.3_3)$

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\end{array}$$

41) $(3.1_3\ 2.2_{1,3}\ 1.2_1) \times (2.1_1\ 2.2_{3,1}\ 1.3_3)$

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\end{array}$$

42) $(3.1_3\ 2.2_{1,2}\ 1.2_1) \times (2.1_1\ 2.2_{2,1}\ 1.3_3)$

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\end{array}$$

43) $(3.1_1\ 2.2_{1,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,1}\ 1.3_1)$

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\end{array}$$

44) $(3.1_1\ 2.2_{2,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,2}\ 1.3_1)$

$$\begin{array}{ccccccc}
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\end{array}$$

45) $(3.1_1\ 2.2_{1,2}\ 1.2_3) \times (2.1_3\ 2.2_{2,1}\ 1.3_1)$

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46) $(3.1_1\ 2.2_{2,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,2}\ 1.3_1)$

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47) $(3.1_1\ 2.2_{1,3}\ 1.2_3) \times (2.1_3\ 2.2_{3,1}\ 1.3_1)$

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48) $(3.1_1\ 2.2_{1,2}\ 1.2_3) \times (2.1_3\ 2.2_{2,1}\ 1.3_1)$

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3. Finally, we thus have

K(3.a 2.b 1.c) ≠ K(c.1 b.2 a.3),

because
K(SCl) = →, K(RTh) = ←,

and so SCl and RTh are asymmetric in K > 1.

Further, K(idx) = K(×(idx) + {1, 2}),

so
$K(idx) = \uparrow$, $K(\times(idx)) = \downarrow$.

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