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Categories and multiple identity

1. The category theoretic semiotic matrix, which has been postulated by Bense and Marty looks as follows (cf. Toth 1997, pp. 21 ss.)

$$\begin{array}{c|ccc} & 1 & 2 & 3 \\ \hline 1 & \mathrm{id1} & \alpha & \beta\alpha \\ 2 & \alpha° & \mathrm{id2} & \beta \\ 3 & \alpha°\beta° & \beta° & \mathrm{id3} \end{array}$$

As one recognizes, the main diagonal contains all identities which are possible in a triadich-trichotomic 3×3 matrix.

2. However, Kaehr has given the following matrices with the dramatic changes, when we step from a monocontextural to a polycontextural logic. The matrix to the left is a 3-contextural 3-adic matrix, the one to the right a 4.cntextural 3-adic matrix.

$$\begin{array}{c|ccc} & 1 & 2 & 3 \\ \hline 1 & \mathrm{id1}_{1,3} & \alpha_1 & \alpha_3 \\ 2 & \alpha°_1 & \mathrm{id2}_{1,2} & \beta_2 \\ 3 & \alpha°_1 & \beta°_2 & \mathrm{id3}_{2,3} \end{array} \qquad \begin{array}{ccc} 1 & 2 & 3 \\ \hline \mathrm{id1}_{1,3,4} & \alpha_{1,4} & \alpha_{3.4} \\ \alpha°_{1,4} & \mathrm{id2}_{1,4,2} & \beta_{2,4} \\ \alpha\ °_{1,4} & \beta°_{2,4} & \mathrm{id3}_{2,3} \end{array}$$

As the main diagonal of the 3-contextural matrix shows, every semiotic identity is split into 2, and as the 4-contextural matrix shows, there are (n-1) identities for an n-contextural matrix. One of these dramatic changes is the (alleged) vanishing of eigenreality in semiotics with contextures ≥ 3, since the reflection of the inner environments of the sub-signs prevents a dual-identical mapping of the sign class $(3.1_1\ 2.2_{1,2}\ 1.3_1)$ onto its reality thematic $(3.1_1\ 2.2_{2,1}\ 1.3)$.

3. However, in this little contribution, we want to shed a light on a formal device which I had already introduced in monocontextural semiotics in Toth (2008, pp. 159 ss.). Against every rules in mathematical category theory, I had differentiated between "static" and "dynamic" morphims. What is meant with that, I repeat here informally, since this differentiation has lead to severe mis-understandings.

3.1. The classical way of transforming a sign class into its morphisms is by exchanging the sub-signs by morphisms. E.g.

$$(3.1\ 2.1\ 1.3) \equiv (\alpha°\beta°, \alpha°, \beta\alpha)$$

However, this mapping is purely static, since the fact that (3.1 ...) is a triadic relation over a dyadic relation (... 2.1 ...), and (... 2.1 ....) is a dydic reation over a monadic relation (... 1.3) .is not taken into consideration. This classical device lies on the double introduction of sub-signs as being both static and being both dynamic relations.

3.2. However, instead of mapping $(3.1) \rightarrow \alpha$, $(2.1) \rightarrow \beta$, $(1.3) \rightarrow \gamma$, we can proceed as follows:

$$(3.1\ 2.1) \rightarrow (3.2\ 1.1), (2.1\ 1.3) \rightarrow (2.1\ 1.3).$$

Therefore, trichotomies and triads are now linked together, and the relational dependency between the dyads is made clear. (However, there is no way how to show the differences between triadic, dyadic and monadic linking.)

In the case of polycontextural dyads, we thus get, f. ex.

$$(3.1_3\ 2.1_1\ 1.3_3) \rightarrow ((3.2_2\ \underline{1.1_{1,3}}), (2.1_1\ 1.3_{,3})$$

$$(3.1_3\ \underline{2.2_{1,2}}\ 1.3_3) \rightarrow ((3.2_2\ 1.2_1), (2.1_1\ 1.3_{,3})$$

This means: The identity-splittings of the one genuine sub-signs (identitive morphisms) is not distributed over two genuine sub-signs (identitive morphisms).

So, besides (static) categories (Eilenberg, MacLane), bi- and n-categories (Leinster) , static/dynamic saltatories (Kaehr), dynamic categories introduced here are another distinct type of category theory.

Bibliogaphy

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