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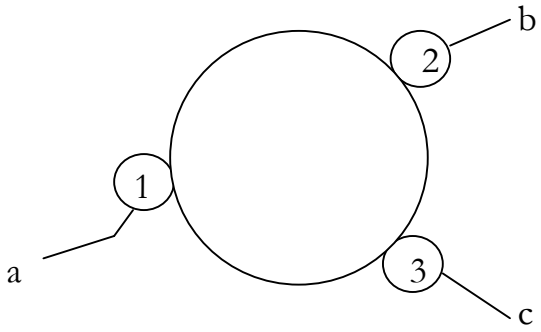
A new geometric model for polycontextural triads

1. In 1972, in the first 3 numbers of vol. 2 of the "Journal of Cybernetics", the linguist Christopher R. Longyear presented a calculus of "triadas". Through their circle form (which is, by the way, not motivated in the three papers) they are capable of giving astonishing insights not only in the outer relationships between triads, dyads and monads as well as more complex n-ads, but also in the inner structure of triadic relations, which has escaped the linear logical models for ^{3}R. The abstract model of a triada presents itself like that:

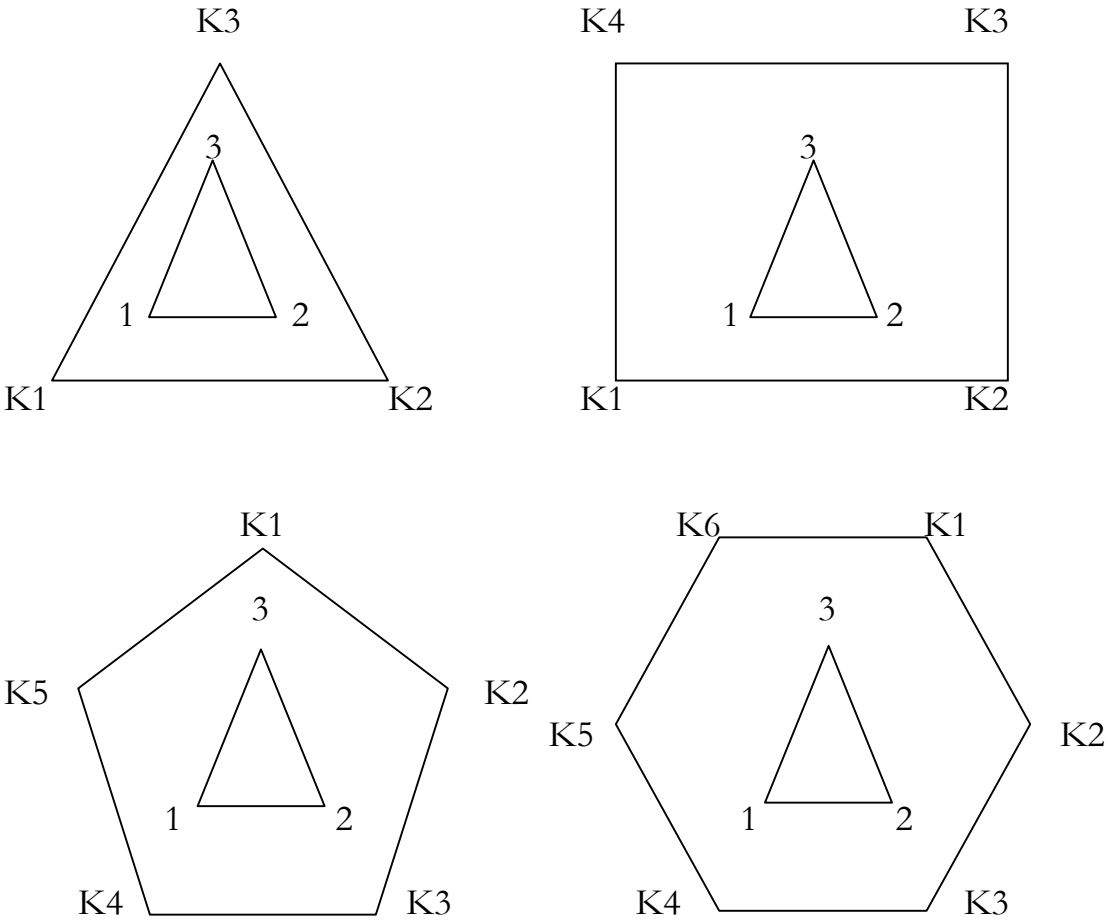


According to Longyear, two triadas are equal to one another, if

1. Both triadas have three external elements.
2. Both triadas have the same three external elements.
3. Both triadas have the same order of their three elements.
4. Both triadas have the same internal structure.
5. Both triadas have the same meaning.
6. Both sides of a "shift" have arms of the same order.
7. Both sides of an internal connection have arms of the same order. (1972, p.4)

2. Longyear's triada-model can be taken as a geometric model for the Peircean triadic sign relation. However, it is not sufficient if the monocontextural sign relations are contextuated (Kaehr 2008). In this case, the sign model must be part of another model, which must be capable of representing the contextures. Since a sign can be, theoretically, in n contextures, we will prefer a polygon to a circle. Moreover, since it had been shown in Toth (2008a) that the triangle model is more appropriate to display the finesses of rotation (cf. also Toth 2008b), we will propose here a complex geometric model of a triangle

embedded in an polygon, minimally triangle. Hence polycontextural signs can be displayed as follows:



As a rotation operator we may use ρ which shall work stepwise: ρ(3.1 2.1 1.3) = (1.3 3.1 2.1), ρρ(3.1 2.1 1.3) = (2.1 1.3 3.1). Thus, with ρ, all permutations of a sign relation can be generated. As for the other operators introduced in Longyear (1972), for the correspondence between (monocontextural) logic and semiotics cf. Toth (2007, pp. 143 ss.). For the application of polycontextural operators (intra- and trans-operators) cf. Toth (2003, pp. 36 ss.).

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