1. In this brief note, I want to point out that multi-categories, introduced into category theory by Tom Leinster (2003), have at least two functions in semiotics, one of them is polycontextural.

2. A multi-category “consists of objects $a$, $b$, ..., arrows $\theta$, $\varphi$, ..., a composition operation, and identities, just like an ordinary category, the difference being that the domain of an arrow is not just a single object, but a finite sequence of them” (Leinster 2003, p. vi):

2.1. First, it is possible to describe the mapping of semiotic monads to dyads one the one side and of dyads to triads on the other side by aid of semiotic multi-categories:

2.1.1. $(M \Rightarrow O)$

However, the mapping of $(1.3) \Rightarrow (2.3)$ is a 1-category.
2.1.2. (O ⇒ I)

However, the mapping of (2.3) ⇒ (3.3) is also a 1-category.

3. A polycontextural application of multi-categories is Bense’s “poly-representativity” of signs (Bense 1983, p. 45). Informally, poly-representativity means that there are functors S that map objects $a_1, ..., a_n$ onto one of ten sign classes according to a semiotic model theory which lies in the description of the 9 sub-signs of the semiotic matrix:

$$S: (a_1, ..., a_n) \rightarrow (S_{\text{Cl}_1} ... S_{\text{Cl}_{10}}),$$

so that each of the 10 sign classes represent more than 1 object and is thus poly-representative:

Bibliography

Bense, Max, Das Universum der Zeichen. Baden-Baden 1983
Leinster, Tom, Higher Operads, Higher Categories. Glasgow 2003

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