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Mathematical epistemology from a semiotic point of view. (Epistemologia matemática de um ponto de vista semiótico.)

Summary: It is impossible that everything in the world means something. Not everything is reasonable. The reality in which we are living consists, essentially, of two kinds of entity: signs that have meanings, and objects that represent the pure actual essence. Meanings are possible, i.e., their objectivity depends on the future. The meaning of a natural law or a mathematics concept has to be seen within its future potential applications. The meanings of a sign must not be confused with the sign itself. A sign can have different meanings depending on the code or the context. There is a natural distinction between facts and possibilities, objects and signs, things and laws in empirical sciences, while in mathematics the laws or relations seem to be universal. In mathematics there is no fundamental ontological level; even so, mathematics is not an analytical science. In a geometrical proof argumentation we usually use phrases like ‘triangle A is congruent with triangle B’ and so on. It shows that meaning in mathematics reflects objective possibilities. It was Charles Pierce (1839 to 1913) who systematically explored this situation and its entailments. This article intends to explain mathematics cognition phenomena from this point of view.

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