Chapter 8

Signs Conveying Information: On the Range of Peirce’s Notion of Propositions – Dicisigns

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ABSTRACT
This chapter introduces Peirce’s notion of proposition, “Dicisign.” It goes through its main characteristics and argues that its strengths have been overlooked. It does not fall prey to some of the problems in the received notion of propositions (their dependence upon language, upon compositionality, upon human intention). This implies that the extension of Peircean Dicisigns is wider in two respects: they comprise 1) propositions not or only partially linguistic, using in addition gesture, picture, diagrams, etc.; 2) non-human propositions in biology studied by biosemiotics.

INTRODUCTION
Peirce’s notion of “Dicisigns” has led a strangely silent life in Peirce’s reception. It is, of course, Peirce’s notion for propositions, and the central place of that notion in the development of 20th century logic and analytical philosophy probably leading many Peirce scholars to presume that Peirce’s notion was merely a forerunner to that development, lacking any intrinsic interest. This is not true, and the goal of this paper is to give an overview over Peirce’s notion of Dicisign as well as to highlight those aspects of it which differ form the received notion of propositions in logic and philosophy. Peirce’s notion of Dicisign includes logical propositions, and is closely related to Peirce’s many discoveries in logic—but due to Peirce’s semiotic approach to logic, he is not only, like the logical mainstream, interested in the formalization of propositions and their structures, but also takes a crucial interest in which sign types may carry propositions. This is why Peirce’s Dicisign transgresses the narrowly logical notion of propositions in at least two respects.

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One is that a Peircean Dicisign need not be expressed in language, ordinary or formal. A Dicisign may involve gestures, pictures, diagrams only, or it may involve such devices in combination with language. Thus, the notion of Dicisigns covers a much larger range of human semiotic activity than ordinarily conceived of in the notion of propositions (it is true that most often, logic does not consider that range, focusing instead on logical properties of propositions and propositional content, however expressed)—it gives a much broader idea of which human activities implies claiming something to be the case. The other extension in the notion of Dicisigns as compared to standard conceptions of propositions is that Dicisigns, not being confined to language, also cover animal communication and lower biological sign use studied by biosemiotics. This should not come as a great surprise: communication of any sort couldn’t possibly reach any high degree of efficiency if it is not able to indicate things to be the case, which is the central property of Dicisigns. Many of the biological cases, however, do not imply that the signs used correspond to conscious, deliberate claims on the part of a communicating or signifying biological agent—which is probably why many scholars immediately refrain from considering the possibility of Dicisigns in other species.

DICISIGNS

Let’s begin by taking a look at the central properties of Peirce’s Dicisign doctrine. A basic way of describing Dicisigns is that they are signs which may be ascribed a truth value (Syllabus, 1903; partly reprinted in Peirce, 1998). This is because Dicisigns claim something about something—and this claim may be true or false (or meaningless). The reason why Dicisigns are thus able to claim something is that they have a double structure: they 1) point out an object, and they 2) describe that object in some way. They possess, in some way, a Subject-Predicate structure. The formal part of this analysis of a proposition is largely shared by Frege and Peirce. Frege famously analyzed propositions as consisting of two parts, functions and arguments (corresponding to Predicates and Subjects, respectively), functions indicating properties of the variables indicated by the arguments, and often indicated as $F(a)$—meaning $a$ satisfies the function $F$; $a$ has the property $F$. Frege’s path-breaking insight was that functions need not have one argument only—properties are not only properties of one object, many properties are relationally shared between objects. Peirce’s independent analysis of the Dicisign is quite parallel: a proposition consists of 1) a Predicate, in his terms, an iconic rhema (corresponding to Frege’s function) and 2) one or more Subjects, in his terms, indices referring to which objects are claimed to possess the property described by the iconic rhema (corresponding to Frege’s arguments). Frege and Peirce count as the founders of relational logic; both of them insist that one and the same rhema (function) may take several indices (arguments). Thus, the rhema “loves” may take two indices: “Peter loves Mary,” the rhema “gives” may take three, “Mary gives Peter a rejection.” Moreover, both Frege and Peirce invent quantification to give different recipes for the selection of the objects referred to by the indices of a Dicisign. One is existential quantification: “Some berries are red,” another is universal quantification “All fruits are colored”—and possibly other quantifiers indicating other modes of selecting objects considered in the Dicisign. Frege and Peirce did not know about each others’ discoveries, and it is well known how Frege enjoyed priority in these discoveries because he published them some years before Peirce. It is less well known that the current logical formalism, sometimes referred to as the Peano-Russell formalism, stems from Peirce (via the German philosopher Ernst Schröder) rather than from Frege. Peirce invented the basics of that
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