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Commentary on Takuzo Konishi: "Peircean Semiosis/Sign and their Contribution to Argumentation"

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I would like to use this opportunity to thank Takuzo Konishi for his presentation, especially for summarizing existing research in argumentation theory that refers in different ways to Charles S. Peirce, the founding father of modern semiotics and pragmatism, and for emphasising that future developments in argumentation theory might profit a lot from a more systematic analysis of what can become a "Peircean contribution" to argumentation theory.

There is no question that Peirce is one of the most difficult authors in philosophy. He was not able to synthesize his far reaching considerations in any encompassing and systematic form that we could use today to study his central insights and suggestions. To blame for this are not only the harsh living conditions that he experienced for most of his adult life, but first of all the fact that much of what we consider today as his most innovative insights never reached a state of development that Peirce himself could accept as sufficiently clear and adequate. Since this is true in particular for his semiotics, any attempt to clarify possibilities of how we can use Peirce's theory of signs is highly appreciated.

In this short comment, I will not go into the details of Konishi's arguments and suggestions. Instead, I will focus only on one of the four elements of Peirce's semiotics he highlights as important for future developments of argumentation theory: Peirce's considerations about *non-linguistic*, that is *iconic* and *diagrammatical*, representations of arguments and reasoning processes. The reason for this restriction is that I am really convinced—based on my own work on this—that this part of Peirce's semiotics can indeed catapult us into a completely new area of argumentation theory. This area—I would call it a *cognitive* approach to argumentation—has been explored so far only by a few people, most significantly in the book *Visualizing Argumentation*, edited by Paul Kirschner, Simon Buckingham Shum, and Chad Carr (2003).

Let me start with a more general consideration. What is really new and exciting in the way Peirce approaches arguments is his strong focus on the argument as a *cognitive* process. While we are used to think about argumentation either primarily as a social, interactive, and dialogical process, or as a certain *form* to organize statements—the simplest would be providing reasons for a claim—Peirce defines the notion of an "argument" as a process of *reasoning*. In 1908, in one of his latest publications, he contrasts the concepts "argument" and "argumentation" as follows:

> An "Argument" is any process of thought reasonably tending to produce a definite belief. An "Argumentation" is an Argument proceeding upon definitely formulated premises. (Peirce, CP 6.456)

As Takuzo Konishi emphasized, Peirce used his semiotic concept of an "interpretant" to signify the "conclusion" of an argument. In its most general form, the "interpretant" is, as Peirce says again in one of his latest manuscripts, "the proper significant outcome of a sign" (CP 5.473). The "interpretant," we could say, *interprets* the meaning of a sign adequately, so that the meaning of a sign is 'carried,' and also *transformed*, in an ongoing sequence of interpretants that forms a process that Peirce called "semiosis" (CP 5.484). However, what is important in the definition I quoted above is the distinction between a "process of thought" on the one hand and, on the other, an explication, or representation, of this thought process in a series of propositions. Only the *cognitive* process is called an "argument," while its *representation* in a linguistic form is called an "argumentation." But both—and this is important, as I will show—depend on each other.

Based on this quote we can say that, for Peirce, the primary function of an *argument* is to "produce" a certain "belief" in a reasonable way, or to change a certain belief in a reasonable way. And again, it is important to note that a "belief," according to Peirce's pragmatism, is not primarily a proposition, as in "I believe that …," but it is, as he says, "an intelligent *habit* upon which we shall act when occasion presents itself" (CP 2.435; my italics). In another context, Peirce says: "The feeling of believing is a more or less sure indication of there being established in our nature some habit which will determine our actions" (CP 5.371). Having a "belief" does not mean to *say* something, it means being ready to *act* in a certain way. A "belief" is a disposition, a habit. How all this relates to his concept of an "argument" becomes visible in the following quote from 1880:

> A cerebral habit of the highest kind, which will determine what we do in fancy as well as what we do in action, is called a *belief*. The representation to ourselves that we have a specified habit of this kind is called a *judgment*. A belief-habit in its development begins by being vague, special, and meagre; it becomes more precise, general, and full, without limit. The process of this development, so far as it takes place in the imagination, is called *thought*. A judgment is formed; and under the influence of a belief-habit this gives rise to a new judgment, indicating an addition to belief. Such a process is called an *inference*; the antecedent judgment is called the *premiss*; the consequent judgment, the *conclusion*; the habit of thought, which determined the passage from the one to the other (when formulated as a proposition), the *leading principle*. (CP 3.160).

Since thinking is a semiotic process for Peirce, Konishi is right when he says that we have to study Peirce's notion of sign and semiotics if we want to know how he could contribute to a theory of argumentation. However, what I want to emphasize here is the fact that "semiotics," for Peirce, does not only refer to visible signs and representations, but also—and maybe even primarily—to cognitive processes like reasoning, developing beliefs, and changing beliefs.

From my point of view, the most important input we can get from Peirce is his thesis that a reflection on arguments, argumentations, and what he calls "inferences" in the quote just mentioned can help us to improve our own thinking and reasoning. The analysis of arguments and argumentations helps us to clarify what we think, and it helps us to change our beliefs when it turns out that they are not really justified. This way, the

reflection on argumentations is an essential step for learning and for the development of knowledge.

At this point, I would like to come back again to Konishi's insight that Peirce's reflection on *iconic* signs—which include, as he says, "visual artifacts as images and diagrams"—can contribute to recent discussions in argumentation theory about "argument visualization" (e.g. Kirschner et al., 2003). However, while Konishi assumes that something like a "visual argument" would be "an oxymoron" for Peirce since—according to his 1903 classification of 10 types of sign relations—icons and arguments are clearly separated, I would like to hint at Peirce's concept of "diagrammatic reasoning" in which both, icons and arguments, are *combined*. For a theory of argumentation, this concept would be the point where I would start to look for Peirce's possible contributions (see my own contribution on "Logical Argument Mapping" in this volume for more details).

Peirce defines a "diagram" as "a representamen which is predominantly an icon of relations and is aided to be so by conventions. Indices are also more or less used. It should be carried out upon a perfectly consistent system of representation" (CP 4.418). He proposed this definition of a diagram within a series of definitions to formulate the foundations of his so-called "Existential Graphs," a graphical notation of logic intended to replace algebraic notations as we use them in the Frege-Russell tradition (Roberts, 1973; Ketner, 1996 <1990>; Shin, 2002; Sowa, 2000). Peirce's strong interest in developing a *graphical*, *iconic*, or *diagrammatic* system of logic is motivated primarily by a reflection on the *cognitive* aspects of doing logic. The central thesis is that visual representations of logical relations, and the experimentation with those visual representations, facilitate, clarify, and organize our thinking processes (Hoffmann, 2003). As he says in a manuscript:

> All our thinking is performed upon signs of some kind or other, either imagined or actually perceived. The best thinking, especially on mathematical subjects, is done by experimenting in the imagination upon a diagram or other scheme, and it facilitates the thought to have it before one's eyes. (Peirce, NEM I 122)

With regard to Peirce's logic of the Existential Graphs, which are rightly considered today as one of his greatest achievements, this focus on cognitive aspects of doing logic becomes visible in the following introduction to this logical system:

> This system of graphs is intended to aid the study of necessary inferences, such as those of mathematics. For this purpose, it must be capable of presenting every such reasoning in a steadily perceptual and controllable form, so that it shall be open to attentive observation and to experimentation. (Peirce, MS 492, CSP 6)

Now, if we try to summarize all these considerations, we get the following sketch of a Peircean theory of argumentation. An "argument," we heard, "is any process of thought reasonably tending to produce a definite belief," as Peirce says (CP 6.456). This production of a "definite belief" is *reasonable* if there is a "habit of thought," or a "leading principle," which determines "the passage" from the premise to the conclusion (CP 3.160). This "leading principle" is nothing special, in its visualized form it would simply be the "major premise" in classical syllogism, or something like the "warrant" in Toulmin's model of argumentation. However, the essential idea that the concept of

diagrammatic reasoning adds to this picture is the consideration that the *cognitive* process of arguing can be facilitated and improved when the argument gets *visualized* in an *argumentation*, that is an argument that proceeds, as Peirce says, "upon definitely formulated premises" (CP 6.456). An argumentation, we can say, is an argument that is diagrammatically represented by means of a certain "system of representation" (CP 4.418). Representational systems are systems like the Existential Graphs, or an axiomatic system in mathematics, or Toulmin's model of argumentation, or simply the grammar of our languages. Representational systems provide the means to represent something, they allow us, as Peirce says with regard to the Existential Graphs, to represent every "reasoning in a steadily perceptual and controllable form, so that it shall be open to attentive observation and to experimentation" (MS 492, CSP 6).

The main function of representational systems is to provide the rules, conventions, and signs that we need to operate with representations in a rational way (CP 4.530). Any experiment with a diagram is guided by those rules so that the representational system is responsible for the possibility to learn something from diagrammatic reasoning (Hoffmann, 2004). In another late manuscript on the Existential Graphs, Peirce talks about the "diagrammatic syntax" he developed to represent relations. "It is," as he says, "a way of setting down on paper any assertion, however intricate, and if one so sets down any premises, and then (guided by 3 simple rules) makes erasures and insertions, he will read before his eyes a necessary conclusion from premises" (Peirce, 1909).

The need to *visualize* arguments in order to clarify and structure our thinking processes, and to learn something, is the essential idea of Peirce's theory of argumentation, and I thank Takuzo Konishi for highlighting this as a Peircean contribution to argumentation theory.

link to paper

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