

Processing the Identity of a Reasoning Self - Differences Between Recursion And Self-Reference

Stephan Körnig

Dpt. of Philosophy, Darmstadt University of Technology, Germany
koernig@ifs.tu-darmstadt.de

Abstract. From a philosophical point of view knowledge implies self-reference. In this talk a brief overview on the conceptualization of self-reference and the “identity of the subject of perception” will be given. Descartes, Kant, Hegel and Radical Constructivism will be discussed, in order to develop an understanding of the differences between a static and a procedural view on identity and self-reference. The problems of a “self-referential logic” (in the context of the epistemological effort, undertaken by the Radical Constructivism) will be discussed, focussing on the problem of recursion and the conceptualization of self-reference as an emergent property of “systems”.

Beginning with Descartes the notion of “scientific reasoning” and “methods” was bound to a “subject of reasoning”. The most fundamental form of this subject’s reasoning is to draw a distinction between itself and anything it refers to. By this, self-reference is virtually present in any operation concerned with the validation of truth. It is important to understand that the concept of “the subject” is not directly linked to the concepts of “individual” or “mental act”. With the “subiectum” the ability of generalization becomes the foundation of truth. “Reasoning” from then on can be seen as a generalized and repeatable operation, applicable to any “object of reasoning” (universality).

With Kant and Hegel the virtual presence of self-reference in reasoning became a central aspect of the discourse - it became obvious that the identity of the subject’s reasoning cannot be taken as a fact (or as gift). The identity of self-reference has to be understood as a “construction” (Kant: “Vehikel der Wahrnehmung” - vehicle of perception) and most of the philosophical work of Hegel can be regarded as an effort to clarify all aspects of the genesis of this identity.

In the late system theory, especially in the branch of the Radical Constructivism (e.g. Maturana, Varela, von Foerster), the notion of identity was replaced by the (observable) ability of systems to establish differences - in order to process the “difference between identity and difference” This cumbersome and puzzling formula indicates that the problem has not been solved, it was reformulated in the context of a “process logic” of systems with capacities for self-organization.

Finally we will investigate the relationship between the classical discourse on the problems of self-reference and the “solutions” provided by Constructivism. The most

convincing solution is to deny the mere possibility to “prove” the existence of cognition. The aspects of cognition become reality only in the observer’s eye, ascribing identity, self-reference, meaning, etc. to observed “systems”. Another solution consist in developing a formal description of processing self-reference, like Spencer-Brown’s “Laws of Forms”. He stated that an appropriate processing logic, based on his calculus, finally will lead to a “re-entry” of derived expressions into the basic operation of distinctions - in other words: the calculus will contain an explicit expression for its implicit knowledge.

Both solutions will be discussed, hopefully leading to a better understanding of knowledge processing by the help of discrete operations.