

Erotetic Inferences: A Problem-Solving Perspective

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Largely under the impulse of Jaakko Hintikka and Andrzej Wiśniewski, the domain of erotetic logic recently witnessed a dramatic change in perspective. Whereas the traditional approach in erotetic logic focussed on the structure of questions and on their relation with answers, a growing number of scholars now takes interest in an *inferential approach* to erotetic logic—one that concentrates on the validity conditions for various types of erotetic inferences. Exemplary for this approach are Hintikka’s interrogative model (see especially the papers in [6]) and Wiśniewski’s inferential erotetic logic (see especially [10]).

Hintikka’s model constitutes one of the first studies of the conditions on valid erotetic derivations, and was applied to problems in the philosophy of science (see, for instance, [2], [3], [4], and [5]) as well as to case studies in the history of science (see, for instance, [9], [8] and [7]). Many of the basic intuitions behind this model were generalized and systematized by Wiśniewski. The resulting theory provides a semantic explication of several erotetic concepts, such as the derivation of new initial questions (“question evocation”), and the derivation of auxiliary questions that are helpful in answering some initial question (“erotetic implication”).

At first sight, Wiśniewski’s theory is highly attractive. The explications are nice and simple, and seem to capture our basic intuitions about erotetic inferences. However, as far as their applicability to actual cases of problem-solving is concerned, they face several shortcomings. Paradoxically as it may seem, the explications are both too stringent and not stringent enough: whereas, on the one hand, they allow for the derivation of questions that are irrelevant or too complex, they exclude, on the other hand, many questions that are, from an intuitive point of view, cognitively useful.

In this paper, I shall present an alternative analysis of erotetic inferences that is better suited from a problem-solving perspective. Central in this analysis will be the notion of a “constraint”. I shall present a formal characterization of this notion and show that it leads to a very natural explication of the cognitive usefulness of a question. I shall also present some examples of problem solving processes that illustrate the adequacy of the alternative analysis.

References

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