The Laws of Thought.
Frege on logic, thinking and conceptual analysis.

Workshop

May 15th, 2015
Institute for Advanced Study, IUSS, Pavia
Sala del Camino

Abstracts

Patricia Blanchette (University of Notre Dame)
Logic and Conceptual Analysis in Frege

Frege’s understanding of logic, and especially of logical entailment, is tied closely to his understanding of conceptual analysis. His attempt to demonstrate the purely-logical grounding of arithmetic relies on a particular conception of what conceptual analysis requires, and of the connection between the logical grounds of a science and the analysis of its fundamental concepts. This talk examines the connection between logic and conceptual analysis in Frege’s work, and argues that an understanding of this connection can help us understand (i) how Frege’s logicist reduction can answer the difficulties posed by the phenomenon of multiple reducibility, and (ii) some crucial ways in which Frege’s understanding of logic, and of formal systems, differs from the dominant tradition that takes hold by the second decade of the twentieth century.

***

Robert May (University of California, Davis)
Logic as Science

The idea of logic as a scientific endeavor is strongly associated with Frege’s conception of logic. It has been argued, however, that Frege’s way of understanding this slogan is problematic. The problem, it is claimed, is that underlying Frege’s scientific conception of logic is the notion that logical laws are maximally general, and that this so-called universalist perspective leads, given how Frege understands the notion of judgement, to the basic logical laws being unjustified. This requires Frege to fall back on either an opaque notion of a priori self-evidence for their epistemic grounding, or on a weaker epistemic standard of elucidation. This, however, is incorrect as a reading of Frege’s conception of logic as science; the goal of this paper is to show what Frege’s conception is in fact, and why it does not face the alleged conundrum.

The paper has four primary parts.

i) The “pure” logic of conceptual content. In Begriffsschrift, Frege goal is to develop a logic that applies to any content whatsoever that can construed as “conceptual”, where what he means by this is any content that can be analyzed as having a structure of function and argument. Any such content will be a logical content, and whether a content is logical in this sense does not depend in any way on properties of the particulars of the content; the logic, as Frege explicitly points out, “transcends all particulars”. In the third part of Begriffsschrift, Frege shows that the notion of logical ordering can be defined with respect to any conceptual content, and that fundamental theorems can be proven about such orderings. Given that any domain open to scientific inquiry will be conceptual in Frege’s sense, it follows that Frege’s pure logic will be applicable to any scientific domain, and will be universal in this sense.

ii) Applications of logic. For Frege, applied logic is logic applied to a subject-matter. An applied logic is built upon pure logic by the addition to the basic laws of logic of axioms that govern the subject-matter, along with appropriate definitions that introduce terms that refer to the entities (concepts and objects) of the subject-matter. For example, geometry results from the addition of the Euclidian axioms, governing a subject-matter consisting of points and lines and concepts holding of them. Sciences are applications of logic to subject-matters by the method just described, and in scientific contexts quantifiers are implicitly restricted to ranging over the entities of the subject-matter of the science. On Frege’s view of science, logicism is the thesis that arithmetic is the first science, the science that arises from the null addition of axioms to the basic laws, and whose subject-matter are entities that are governed by those laws; hence, the explicit definition of numbers as value-ranges. As logic is embedded in all applications, so too is arithmetic, and it is in this sense that logic is completely general throughout scientific inquiry.
iii) Judging and Judgement. In a wide range of locations in his late papers and fragments, Frege is careful to distinguish between the process of making a judgement (judging) and judgement, the product of that process. Frege is explicit that judging is an agentive psychological act that maps judgeable contents - thoughts paired with truth-values - to judgements - thoughts known true. It is by making a judgement that knowledge is generated. Judgements are not obtained only this way however; they also are the result of proof. But whatever knowledge is obtained by logical derivation depends on the prior epistemic status of the basic laws and axioms; i.e. on thoughts that are not proven, but assumed. If proof were the sole road to judgement, there would be a grave epistemic problem, as the basic laws and axioms would then be unjustified. But this is not the case.

iv) Judging Basic Laws. In Grundgesetze §§18-21, Frege shows that the Basic Laws are justified not by being proven but by being judged, and he illustrates the transition from judgeable content to judgement for each of the basic laws. (Cf. §18 where this is explicitly done for Basic Law I.) In this case, while the process is psychological, the grounds for making the judgement are logical. It is because of this that Frege can say that it is self-evident that the Basic Laws are judgements, in the sense of being obvious given considered reflection on the basic logical concepts on which logic is built (e.g. the conditional which Frege cites as the grounds for the judging Basic Law I). The Basic Laws qua axioms are neither proven nor in need of proof; nevertheless they are still in need of being judged.

For Frege, then, to understand what he means by taking logic as science, we must respect how he distinguishes pure from applied logic, along with the epistemic foundations provided by his theory of judgement. Frege’s picture is completely general, but it is not a “universal” picture, as this is portrayed on the universalist conception alluded to above. That view is mistaken.

***

Pieranna Garavaso (University of Minnesota, Morris)
The Epistemic Role of Language in Frege

This presentation focuses on the role that Frege believed language plays with regard to das Denken and der Gedanke, respectively. Frege explicitly states that symbolic language plays a necessary epistemic role for human thinking. Although the link between language and thoughts is more complex than the link between language and thinking, we submit that for Frege language plays a necessary epistemic role both in expressing thoughts and in directing thinking.