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GÖDEL'S FIRST THEOREM

Abstract

I use Gödel's first incompleteness theorem, in order to apply to formal languages a negative consequence of the dialectic-holistic semantics, which I have begun to outline in "Dialettica come semantica", my previous work for *Epistemologia*. The application is referred to the thesis I have elsewhere called "semantic unsaturability", which is somehow close – although not *too* close – to Quine's (and Davidson and Putnam's) "inscrutability" or (more appropriately) "indeterminacy" of reference. I assume Peano's arithmetic as a paradigmatic first-order deductive theory, and after briefly recalling the "dialectic version" of semantic indeterminacy-unsaturability, I consider two famous model-theoretic arguments: an extensional one, due to Quine and based upon Löwenheim-Skolem's theorem, and an intensional one, due to Putnam. Then, I examine directly the semantic outcomes of Gödel's incompleteness results, showing how they can confirm the semantic unsaturability: on the one hand, because of the unexpected non-standard models they provide to Peano's arithmetic; on the other hand, because first-order syntactic incompleteness produces *semantic* incompleteness of second-order and higher-order logic.

