Review of
JAAKKO HINTIKKA,
THE PRINCIPLES OF MATHEMATICS REVISITED
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In this engaging, provocative manifesto, Professor Hintikka breaks the ground for what he hopes will be a revolution in logic, in much the same "critical and constructive" spirit as motivated Bertrand Russell almost a century ago in *The Principles of Mathematics*. (Other than the title, and the inspiration Russell provides Hintikka in his attempt to change the future direction of mathematical logic, there is no explicit connection between the two works.) In *The Principles of Mathematics Revisited*, Hintikka proposes what could be characterized roughly as a paradigm shift from a proof-theoretic to a model theoretic understanding of the principle role mathematical logic should play in mathematics. Traditionally, the emphasis in logic has been on the formulation and investigation of "pure relations of logical consequence." Hintikka would instead have logicians focus more on what he calls logic's "descriptive function": its use as a general language for the formulation and study of mathematical theories and their models. When we give priority to what can be *said* using logic, in contrast to what can be *proved* using it, Hintikka believes we will discover that many widely accepted ideas—on such issues, for example, as truth definitions, the role of set theory in logic, and the most appropriate form of negation—can be revised with far-reaching positive consequences for the state of modern logic. For Hintikka, this elevation of model theory to its deserved primary role represents the final stage in model theory's long road towards rehabilitation following the doubts about its status raised by Frege, Russell, Wittgenstein, Carnap, and others in the earlier decades of the twentieth century.

Since the emphasis is to be on model theory , Hintikka naturally starts with our intuitions about truth and their bearing on the definition of truth in a model. He first outlines the main features of a game-theoretical semantics (GTS), in which the truth or falsity of a sentence