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Popper's theory of simplicity has three great merits advocating it: it has intuitive appeal, it proposes a clear criterion for judging the relative simplicity of rival hypotheses, and, finally, it answers the question of the justification of simplicity by way of Popper's general theory of falsification. Though the theory has clear application only in the case of curve hypotheses, like those of the trajectories of heavenly objects in astronomy, or of subparticles in physics, it can be extended to other hypotheses of the mature sciences, especially as natural laws are expressible in mathematical terms that have corresponding graphic representations. Despite the usual anti-Popperian objection, that this is not what the scientists in fact do,[1] the theory could have been an excellent starting point for both Popperian and non-Popperian investigators of simplicity, had it not been for some serious doubts concerning the formal correctness of the theory. Such a serious challenge was posed by Michael Martin in his 1965 paper 'The Falsifiability of Curve Hypotheses' and restated in his 1972 book *Concepts of Science Education*. As Martin's counterarguments have received no response, my aim in this paper is, in the first place, to defend Popper's theory in the face of M. Martin's objection by way of clarification and revision of Popper's basic theses. In the second place however, I intend to offer an argument that goes further than Martin's in challenging the correctness of Popper's theory. Given that I take this to be the last defense of Popper, at least as far as curve hypotheses are concerned, I conclude with some general observations concerning the Popperian theory of simplicity and its connections to his general theory of falsification.

Popper's basic thesis equates simplicity of hypotheses with degree of falsifiability of hypotheses: The most refutable hypothesis is the simplest. Avoiding the technicalities of Popper's exposition,[2] we can concentrate on the best known example instantiating the general theory. As Martin summarizes it, "the most refutable hypothesis about a planet's path is always the simplest; thus if it takes n number of points to specify the path of a planet, it takes $n + 1$ observed points to refute the corresponding hypothesis. A straight line hypothesis is specified by two points and refuted by three, a circle hypothesis is specified by three

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