Book Review

Michael Resnik. *Mathematics as a Science of Patterns*. Oxford University Press, Oxford, 1998. xiii + 285 pages.

1 Introduction   In this ambitious and engaging book Michael Resnik weaves together the various strands of his philosophy of mathematics. These strands have been developed in thirteen papers published between 1981 and the present. The book goes beyond the papers, however, in that it synthesizes the material and strengthens it. In addition, there is some previously unpublished material on realism—which is really the main focus of the book. The writing is very clear and accessible, while raising many important philosophical questions about the nature of mathematical reality, truth, reference, and epistemology. The book is thus appropriate as a textbook for a philosophy of mathematics course while also being very entertaining reading for professionals.

Though its title may give the impression that the book elaborates and develops Resnik's well-known structuralism, it really constitutes an extended argument for mathematical realism. The chapters on structuralism which come at the end complete the ontological picture, but they are largely irrelevant to the main arguments for realism. Here is a sample of the wide variety of views which make up the philosophical position espoused in the book. Resnik proposes a modified version of the indispensability arguments for mathematical realism. The objects about which he is a realist are positions in structures (structuralism). He bolsters his indispensability arguments with negative arguments against certain competing antirealist programs. He appeals to naturalism as a reason we should avoid "supernatural" epistemologies, such as those based on a priori intuition. He endorses an immanent, disquotational theory of truth, an immanent theory of reference, and he argues that these are compatible with realism. Acknowledging that epistemology is the biggest obstacle for the realist, Resnik argues for a postulational epistemology and an evidential holism about mathematics and science.[1] The idea here is that though there appear to be methodological differences between mathematics and the natural sciences, there is no genuine separation to be made, either ontologically or epistemologically. Mathematics is empirical, not a priori; and the abstract-concrete dichotomy—on which certain versions of apriorism depend—is argued to be indistinct. The ultimate evidence for mathematics comes from its role in science. Finally Resnik is an antirealist about logic. Though