

Philosophy of Mathematics in the Twentieth Century: Selected Essays.

CHARLES PARSONS. Cambridge: Harvard University Press, 2014. xiv +

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The second volume of Charles Parsons' selected papers, dedicated to Solomon Feferman, Wilfred Sieg, and William Tait, collects eleven mainly historical essays and reviews on philosophy and philosophers of mathematics in the last century, with about 15% new material, including: one new thematic essay on the continuing Kantian legacy in the first half of the century (in the usual suspects, intuitionist and formalist), forming a link of sorts with the predecessor volume, *From Kant to Husserl* (Harvard, 2012); postscripts to several papers; new notes; and an introduction and preface.

A second thematic essay concerns the relationship, again in the first half of the century, between acceptance of impredicative definitions and philosophical realism, finding it more complicated than usually supposed (even though the issue of impredicativity in intuitionism, from the Brouwer-Heyting-Kolmogorov explanation of the conditional to the “creative subject”

scheme is not covered), partly because of Hilbert's acceptance of impredicativity in mathematical practice, as legitimate though not *inhaltlich*.

The remaining ten papers treat the philosophies of mathematics of six important writers and thinkers: two logicians with institutional affiliations in mathematics (Paul Bernays and Kurt Gödel), two logicians with institutional affiliations in philosophy (Hao Wang and William Tait), and two philosophers who made significant contributions to logic, especially early in their careers (W. V. O. Quine and Hilary Putnam), to which category Parsons himself belongs, though he is also what none of the others are, an historian of philosophy. The first two are treated as purely historical figures, the other four as “contemporaries” of the author, though only the last two are still living by the time of this writing.

The last of the essays, a review of another writer's selected essays, begins by saying (p. 290) that “it should be no surprise to those who know [his] work that this is a very rich collection, with contributions on a wide variety of issues, both systematic and historical,” and that “serious discussion of even all the majors issues would be beyond the scope of a review.” Exactly the same can be said of the author and volume under review, and with more emphasis considering the very short word limit available to this reviewer. Most of the papers have already generated

considerable discussion after their original publication.

Bernays' unsystematic but significant philosophical contributions (he was among other things perhaps the major figure in the transition from the polemics of the *Grundlagenstreit* to the calm comparative study of trade-offs of between scope and power on the one hand and evidence and security on the other) is given welcome and overdue serious attention in the third essay.

Four essays on Gödel, the fourth through seventh, partly the fruit of Parsons' close familiarity with the *Nachlaß* (beginning with the Gibbs Lecture and drafts of a contribution on Carnap for the *Library of Living Philosophers* volume on Carnap) in his capacity as co-editor of the great logicians' *Collected Works*, include: an overview; a close look at Gödel's first published philosophical essay, "Russell's Mathematical Logic"; a comparison of Gödel's very curious and idiosyncratic notion of "analyticity" with the well-known negative views of Quine; and a major study of the themes of "realism" and "intuition" in Gödel, whose complexities defy concise summary. The tenth essay, on Hao Wang, is also in large part, though by no means exclusively, about Gödel, or more precisely about Wang's writings on Gödel, which range from formulations personally approved for publication by Gödel himself to attempted reconstructions of remembered conversations, which naturally must be used with some caution.

The eighth essay is on Quine's "nominalism", less in the sense of his joint work with Nelson Goodman, than of his career-long insistence that the mere use of predicates as predicates ("is yellow", for instance) does not in itself commit one to the existence of any sort of *entity* (Fregean concept, attribute or property, set or class, or even predicate-meaning). This is followed by a study of the theme, little treated elsewhere, and making only limited, though significant, contact with philosophy of mathematics, of "genetic explanation" (mainly speculative, non-empirical developmental linguistics) in Quine's oddest book, *The Roots of Reference*.

Putnam's elusive views on existence and ontology are pursued in the eleventh essay, and the twelfth, a review of selected essays of Tait, does much better (to be sure, with a more generous word allotment) at concise summary and evaluation of complex themes in that writer, than I have managed to do here with Parsons himself.

The book as a whole, while not pretending to be a comprehensive account of twentieth-century philosophy of mathematics — on the contrary, the preface begins by listing what has been left out — provides a many-course banquet of food for thought, and there is not one of its chapters that will not repay reading, rereading, and repeated rereading.