4. Application constraint

Central to the last three papers is one of the most important maxims of the Fregean philosophy of mathematics that the applications of a mathematical theory should be incorporated into the definitions of the objects of the theory. In spite of its importance, the application constraint has been the least discussed aspect of neo-Fregeanism. In his contribution, Paul McCallion motivates the application constraint as a potential tool in a neo-Fregean response to Paul Benacerraf's classical problem about the availability of alternative and yet equally acceptable representations of a given mathematical theory.

Peter Simons, on the other hand, asks whether the application constraint should be respected when we consider the abstractionist accounts of mathematical theories beyond arithmetic and real analysis. He argues for his negative verdict by considering theories such as the theory of complex numbers and quaternions that have been constructed irrespective of their applications.

Bob Hale scrutinizes Frege's application constraint and examines some structuralist accounts of natural and real numbers that pay no heed to the constraint. Hale goes on to reject Wright's anti-structuralist argument to the effect that we can only acquire a priori knowledge of simple arithmetical truths by reflecting on the application of the involved concepts if a connection with application is built into the content of those truths. Hale ends his paper by offering a novel approach to the justification of the application constraint.

This volume is a collection of some of the best work that has been done on abstractionism in the philosophy of mathematics. It provides valuable and wide-raging insights into the ongoing debates in the philosophical and mathematical foundations of abstractionism. It is, thus, strongly recommended to anyone interested in these areas.

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CORRIGENDUM

Weighing Reasons By Errol Lord and Barry Maguire

KRISTER BYKVIST

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The above book review incorrectly gave the first author's name as 'Errold Lord'. This has now been corrected to 'Errol Lord'.