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Cambridge Elements $^{\Xi}$

Elements in the Philosophy of Mathematics

edited by Penelope Rush University of Tasmania Stewart Shapiro The Ohio State University

THE EUCLIDEAN PROGRAMME

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103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

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www.cambridge.org Information on this title: www.cambridge.org/9781009494403

DOI: 10.1017/9781009221955

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First published 2024

A catalogue record for this publication is available from the British Library

ISBN 978-1-009-49440-3 Hardback ISBN 978-1-009-22198-6 Paperback ISSN 2399-2883 (online) ISSN 2514-3808 (print)

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The Euclidean Programme

Elements in the Philosophy of Mathematics

DOI: 10.1017/9781009221955 First published online: January 2024

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Abstract: The Euclidean Programme embodies a traditional sort of epistemological foundationalism, according to which knowledge especially mathematical knowledge - is obtained by deduction from self-evident axioms or first principles. Epistemologists have examined foundationalism extensively, but neglected its historically dominant Euclidean form. By contrast, this book offers a detailed examination of Euclidean foundationalism, which, following Lakatos, the authors call the Euclidean Programme. The book rationally reconstructs the programme's key principles, showing it to be an epistemological interpretation of the axiomatic method. It then compares the reconstructed programme with select historical sources: Euclid's Elements, Aristotle's Posterior Analytics, Descartes's Discourse on Method, Pascal's On the Geometric Mind and a twentieth-century account of axiomatisation. The second half of the book philosophically assesses the programme, exploring whether various areas of contemporary mathematics conform to it. The book concludes by outlining a replacement for the Euclidean Programme.

Keywords: Euclideanism, epistemological foundationalism, Pascal, mathematical knowledge, axioms

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ISBNs: 9781009494403 (HB), 9781009221986 (PB), 9781009221955 (OC) ISSNs: 2399-2883 (online), 2514-3808 (print) Cambridge University Press & Assessment 978-1-009-49440-3 — The Euclidean Programme A. C. Paseau , Wesley Wrigley Frontmatter <u>More Information</u>

Contents

1	Introduction	1
2	The Euclidean Programme	3
3	Before the EP: Euclid	14
4	Before the EP: Aristotle	19
5	The EP's Seventeenth-Century Apogee	26
6	Descriptive Axiomatisation and the EP	36
7	The EP Assessed: Core Principles	39
8	The EP Assessed: Subsidiary Principles	51
9	What Should Replace the EP?	60
10	Summary	68
	References	69