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978-0-521-18967-5 - Mathematics, Models, and Modality: Selected Philosophical Essays

John P. Burgess

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MATHEMATICS, MODELS, AND MODALITY

John Burgess is the author of a rich and creative body of work which seeks to defend classical logic and mathematics through counter-criticism of their nominalist, intuitionist, relevantist, and other critics. This selection of his essays, which spans twenty-five years, addresses key topics including nominalism, neo-logicism, intuitionism, modal logic, analyticity, and translation. An introduction sets the essays in context and offers a retrospective appraisal of their aims. The volume will be of interest to a wide range of readers across philosophy of mathematics, logic, and philosophy of language.

JOHN P. BURGESS is Professor in the Department of Philosophy, Princeton University. He is co-author of *A Subject With No Object* with Gideon Rosen (1997) and *Computability and Logic*, 5th edn with George S. Boolos and Richard C. Jeffrey (2007), and author of *Fixing Frege* (2005).

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*Dedicated to the memory of my sister
Barbara Kathryn Burgess*

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Preface

The present volume contains a selection of my published philosophical papers, plus two items that have not previously appeared in print. Excluded are technical articles, co-authored works, juvenilia, items superseded by my published books, purely expository material, and reviews. (An annotated partial bibliography at the end of the volume briefly indicates the contents of such of my omitted technical papers as it seemed to me might interest some readers.) The collection has been divided into two parts, with papers on philosophy of mathematics in the first, and on other topics in the second; references in the individual papers have been combined in a single list at the end of the volume. Bibliographic data for the original publication of each item reproduced here are given source notes on pp. xi–xiii, to which the notes of personal acknowledgment, dedications, and epigraphs that accompanied some items in their original form have been transferred; abstracts that accompanied some items have been omitted.

It has become customary in volumes of this kind for the author to provide an introduction, relating the various items included to each other, as an editor would in an anthology of contributions by different writers. I have fallen in with this custom. The remarks on the individual papers in the introduction are offered primarily in the hope that they may help direct readers with varying interests to the various papers in the collection that should interest them most. But such introductions also serve another purpose: they provide an opportunity for an author to note any changes of view since the original publication of the various items, thus reducing any temptation to tamper with the text of the papers themselves on reprinting. I have made only partial use of the opportunity to note changes in view, but nonetheless I have felt no temptation to make substantial changes in the papers, since my own occasional historical research has convinced me of the badness of the practice of revising papers on reprinting.

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Preface

I have tried to acknowledge in each individual piece those to whom I have been most indebted in connection with that item, though I am sure there are some I have unintentionally neglected, whose pardon I must beg. Here I would like to acknowledge those who have been helpful specifically with the preparation of the present collection: Hilary Gaskin, who first suggested such a volume, and Joanna Breeze, along with Gillian Dadd and the rest of the staff who saw the work through publication.

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“Numbers and ideas” was first delivered orally as part of a public debate at the University of Richmond (Virginia), 1999. Ruben Hersh argued *for* the thesis “Resolved: that mathematical entities and objects exist within the world of shared human thoughts and concepts.” I argued against. It was first published in a journal for undergraduates edited at the University of Richmond (England), the *Richmond Journal of Philosophy*, volume 1 (2003), pp. 12–17. (There is no institutional connection between the universities of the two Richmonds, and my involvement with both is sheer coincidence.)

“Why I am not a nominalist” was first delivered orally under the title “The nominalist’s dilemma,” to the Logic Club, Catholic University of Nijmegen, 1981. It was first published in the *Notre Dame Journal of Formal Logic*, volume 24 (1983), pp. 93–105.

“Mathematics and *Bleak House*” was first delivered orally at a symposium “Realism and anti-realism” at the Association for Symbolic Logic meeting, University of California at San Diego, 1999. The other symposiast was my former student Penelope Maddy, and the Dickensian title of my paper is intended to recall the Dickensian title of her earlier review, “Mathematics and *Oliver Twist*” (Maddy 1990). First published in *Philosophia Mathematica*, volume 12 (2004), pp. 18–36.

“Quine, analyticity, and philosophy of mathematics” was first delivered orally at the conference “Does Mathematics Require a Foundation?,” Arché Institute, University of St. Andrews, 2002. Identified in its text as a sequel to the preceding item, this paper circulated in pre-publication draft under the title “Mathematics and *Bleak House*, II.” First published in the *Philosophical Quarterly*, volume 54 (2004), pp. 38–55.

“Being explained away” is a shortened version (omitting digressions on technical matters) of a paper delivered orally to the Department of Philosophy, University of Southern California, 2004. (I wish not only to thank that department for the invitation to speak, but especially to thank

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Stephen Finlay, Jeff King, Zlatan Damnjanovic, and above all Scott Soames for their comments and questions, as well as for their hospitality during my visit.) It was first published in the *Harvard Review of Philosophy*, volume 13 (2005), pp. 41–56.

“*E pluribus unum*” evolved from a paper “From Frege to Friedman” delivered orally at the Logic Colloquium of the University of Pennsylvania and the Department of Logic and Philosophy of Science at the University of California at Irvine. It was first published in *Philosophia Mathematica*, volume 12 (2004), pp. 193–221. (I am grateful to Harvey Friedman for introducing me to his recent work on reflection principles, to Kai Wehmeier and Sol Feferman for drawing my attention to the earlier work of Bernays on that topic, and to Penelope Maddy for pressing the question of the proper model theory for plural logic, which led me back to the writings of George Boolos on this issue. From Feferman I also received valuable comments leading to what I hope is an improved exposition.)

“Logicism: a new look” was first delivered orally at the conference marking the inauguration of the UCLA Logic Center, and later (under a different title) as part of the annual lecture series of the Center for Philosophy of Science, University of Pittsburgh, both in 2003. It has not previously been published.

“Tarski’s tort” was first delivered orally at Timothy Bays’ seminar on truth, Notre Dame University, Saint Patrick’s Day, 2005. It was previously unpublished. The paper should be understood as dedicated to my teacher Arnold E. Ross, mentioned in its opening paragraphs.

“Which modal logic is the right one?” was first delivered orally at the George Boolos Memorial Conference, University of Notre Dame, 1998. It was first published in the *Notre Dame Journal of Formal Logic*, volume 40 (1999), pp. 81–93, as part of a special issue devoted to the proceedings of that conference. Like all the conference papers, mine was dedicated to the memory of George Boolos.

“Can truth out?” was first delivered orally under the title “Fitch’s paradox of knowability” as a keynote talk at the annual Princeton–Rutgers Graduate Student Conference in Philosophy, 2003. It was first published in Joseph Salerno, ed., *New Essays on Knowability*, Oxford: Oxford University Press (2007). The paper originally bore the epigraph “Truth will come to light; murder cannot be hid long; a man’s son may, but at the length truth will out” (*Merchant of Venice* II: 2). Thanks are due to Michael Fara, Helge Rückert, and Timothy Williamson for perceptive comments on earlier drafts of this note.

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“*Quinus ab omni naevo vindicatus*” was first delivered orally to the Department of Philosophy, MIT, 1997. It was first published in Ali Kazmi, ed., *Meaning and Reference*, *Canadian Journal of Philosophy Supplement*, volume 23 (1998), pp. 25–65. (The present paper is a completely rewritten version of an unpublished paper, “The varied sorrows of modality, part II.” I am indebted to several colleagues for information used in writing that paper, and for advice given on it once written, and I would like to thank them all – Gil Harman, Dick Jeffrey, David Lewis – even if the portions of the paper with which some of them were most helpful have disappeared from the final version. But I would especially like to thank Scott Soames, who was most helpful with the portions that have *not* disappeared.)

“Translating names” was first published in *Analysis*, volume 65 (2005), pp. 96–204. I am grateful to Pierre Bouchard and Paul Égré for linguistic information and advice.

“Relevance: a fallacy?” was first published in the *Notre Dame Journal of Formal Logic*, volume 22 (1981), pp. 76–84. Its sequels were Burgess (1983c) and Burgess (1984b).

“Dummett’s case for intuitionism” was first published in *History and Philosophy of Logic*, volume 5 (1984), pp. 177–194. The paper originally bore the epigraph from Chairman Mao “Combat Revisionism!” I am indebted to several colleagues and students for comments, and especially to Gil Harman, who made an earlier draft of this paper the topic for discussion at one session of his summer seminar. Comments by editors and referees led to what it is hoped are clearer formulations of many points.