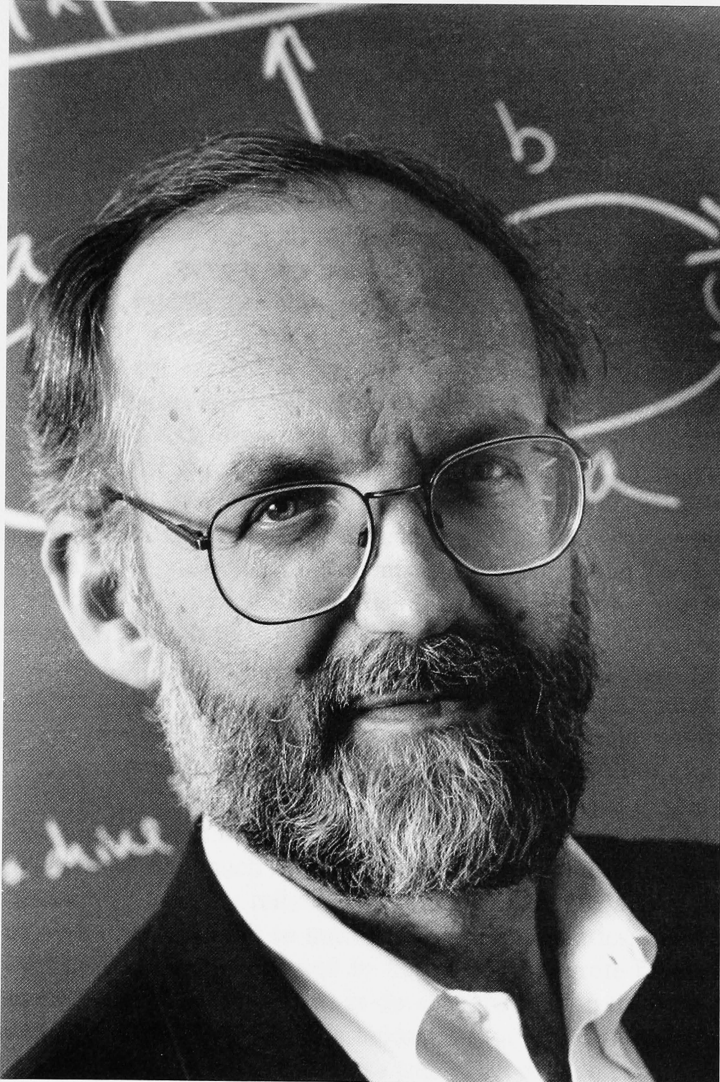


INTRODUCTION



Kenneth Jon Barwise (1942-2000)

© 1996, Tyagan Miller

THE JOURNAL OF SYMBOLIC LOGIC  
IS NOW AVAILABLE IN JSTOR!



JSTOR®, a not-for-profit organization, is an important endeavor dedicated to helping the scholarly community take advantage of advances in electronic technologies. The JSTOR database consists of the complete backfiles of a number of scholarly journals and is available to researchers through participating libraries.

Access to the back volumes of *The Journal of Symbolic Logic* is available to individuals as a privilege of membership in the Association for Symbolic Logic.

In addition to *The Journal of Symbolic Logic*, mathematics and philosophy journals presently available in JSTOR include:

MATHEMATICS:

American Mathematical Monthly  
Annals of Mathematics  
Journal of the American  
Mathematical Society  
Mathematics of Computation  
Proceedings of the  
American Mathematical Society  
SIAM Journal on Applied Mathematics  
SIAM Journal on Numerical Analysis  
SIAM Review  
Transactions of the  
American Mathematical Society

PHILOSOPHY:

Journal of Philosophy  
Mind  
Nous  
Philosophical Perspectives  
Philosophical Quarterly  
Philosophical Review  
Philosophy and  
Phenomenological Research  
Philosophy and Public Affairs

Information regarding JSTOR is available  
at <http://www.jstor.org>.

120 Fifth Avenue, New York, NY 10011

ASL ASL ASL ASL ASL ASL

**Inexhaustibility**  
**A Non-Exhaustive Treatment**  
Lecture Notes in Logic 16  
Torkel Franzén

New!

Gödel's Incompleteness Theorems are among the most significant results in the foundations of mathematics. These results have a positive consequence: any system of axioms for mathematics that we recognize as correct can be properly extended by adding as a new axiom a formal statement expressing that the original system is consistent. This suggests that our mathematical knowledge is inexhaustible, an essentially philosophical topic to which this book is devoted.

Basic material in predicate logic, set theory, and recursion theory is presented, leading to a proof of the incompleteness theorems. The inexhaustibility of mathematical knowledge is treated based on the concept of transfinite progressions of theories as conceived by Turing and Feferman. All concepts and results necessary to understand the arguments are introduced as needed, making the presentation self-contained and thorough.

Published by the Association for Symbolic Logic

2004; 296pp.

Paperback; ISBN 1-56881-175-6; \$40.00

**ASL Member Price: \$32.00**

Hardcover; ISBN 1-56881-174-8; \$85.00

**ASL Member Price: \$68.00**



**A K Peters, Ltd.**

---

**Order these and other A K Peters, Ltd. and ASL books:**

*In the U.S.*

A K Peters, Ltd.

888 Worcester St., Suite 230

Wellesley, MA 02482

Tel: +1-781-416-2888

Fax: +1-781-416-2889

E-mail: [service@akpeters.com](mailto:service@akpeters.com)

Web: [www.akpeters.com](http://www.akpeters.com)

*In Europe*

Transatlantic Publishers Group

c/o ORCA Book Services

Stanley House, 3 Fleets Lane

Poole, Dorset BH15 3AJ UK

Tel: +44-1202-665432

Fax: +44-1202-666219

E-mail: [orders@orcabookservices.com](mailto:orders@orcabookservices.com)

PREFACE



Kurt Gödel (1906–1978)

**New**

**New**

**New**

**New**

The Association for Symbolic Logic, in cooperation with A K Peters, publishes books in logic. These titles include textbooks, research monographs, treatises for a broader audience, historical and biographical writings, as well as the highly regarded series Lecture Notes in Logic. New publications, as well as reprints of selected previous volumes, are available from A K Peters.

### **Now Available from the ASL**

#### **The Notre Dame Lectures**

Lecture Notes in Logic 18

Edited by Peter Cholak

Hardcover; ISBN: 1-56881-249-4; \$60.00; **ASL members: \$48.00**

Paperback; ISBN: 1-56881-250-7; \$35.00; **ASL members: \$28.00**

In fall 2000, the Notre Dame logic community hosted Greg Hjorth, Rodney G. Downey, Zoé Chatzidakis, and Paola D'Aquino as visiting lecturers.

Each of them presented a month long series of expository lectures at the graduate level. The articles in this volume are refinements of these excellent lectures.

#### **Logic Colloquium 2000**

Lecture Notes in Logic 19

Edited by Rene Cori, Alexander Razborov, Stevo Todorčević, Carol Wood

Hardcover; ISBN: 1-56881-251-5; \$70.00; **ASL members: \$56.00**

Paperback; ISBN: 1-56881-252-3; \$40.00; **ASL members: \$32.00**

This compilation of papers presented at the 2000 European Summer Meeting of the Association for Symbolic Logic marks the centennial anniversary of Hilbert's famous lecture. Held in the same hall at La Sorbonne where Hilbert first presented his famous problems, this meeting carries special significance to the Mathematics and Logic communities.

#### **Logic Colloquium '01**

Lecture Notes in Logic 20

Edited by Matthias Baaz, Sy-David Friedman, Jan Krajčec

Hardcover; ISBN: 1-56881-247-7; \$70.00; **ASL members: \$56.00**

Paperback; ISBN: 1-56881-248-5; \$40.00; **ASL members: \$32.00**

A compilation of papers presented at the 2001 European Summer Meeting of the Association for Symbolic Logic, Logic Colloquium '01 includes surveys and research articles from some of the world's preeminent logicians.

ASL Members order online at [www.akpeters.com](http://www.akpeters.com)

Discount code: ASLMember

Phone: 781.416.2888

A K Peters, Ltd.

Fax: 781.416.2889

888 Worcester St. Suite 230

Email: [service@akpeters.com](mailto:service@akpeters.com)

Wellesley, MA 02482

<http://www.akpeters.com>

## New from the ASL and A K Peters

### New and Upcoming Releases

#### **Reverse Mathematics 2001**, Lecture Notes in Logic 21

Edited by Stephen G. Simpson      *Published by the ASL*  
Hardcover; ISBN: 1-56881-263-9; \$85.00; **ASL members: \$68.00**  
Paperback; ISBN: 1-56881-264-7; \$45.00; **ASL members: \$36.00**

Reverse Mathematics is a program of research in the foundations of mathematics, motivated by the foundational questions of what are appropriate axioms for mathematics, and what are the logical strengths of particular axioms and particular theorems. The book contains 24 original papers by leading researchers. These articles exhibit the exciting recent developments in reverse mathematics and subsystems of second order arithmetic.

#### **Logical Dilemmas: The Life and Work of Kurt Gödel**

NOW AVAILABLE IN PAPERBACK

John W. Dawson, Jr.      *Published by A K Peters, Ltd.*  
Paperback; ISBN: 1-56881-256-6; \$34.00; **ASL members: \$27.20**

"I think the book is very good and the writing is excellent. It also seems to be very careful on many points about Gödel that have been the subject of myth and gossip. It should be a winner."

—Dana Scott, Carnegie Mellon University

#### **Intensionality**, Lecture Notes in Logic 22

Edited by Reinhard Kahle      *Published by the ASL*  
Hardcover; ISBN: 1-56881-267-1; \$70.00; **ASL members: \$56.00**  
Paperback; ISBN: 1-56881-268-X; \$40.00; **ASL members: \$32.00**

A compilation of articles about intensionality in philosophy, logic, linguistics, and mathematics. The articles approach the concept of Intensionality from different perspectives. This volume highlights the particular interdisciplinary nature of intensionality with articles spanning the areas of philosophy, linguistics, mathematics, and computer science.

#### **Gödel's Theorem: An Incomplete Guide to Its Use and Abuse**

Torkel Franzén      *Published by A K Peters, Ltd.*  
Paperback; ISBN: 1-56881-238-8; \$24.95; **ASL members: \$19.96**

"This unique exposition of Kurt Gödel's stunning incompleteness theorems for a general audience manages to do what none other has accomplished: explain clearly and thoroughly just what the theorems really say and imply and correct their diverse misapplications to philosophy, psychology, physics, theology, post-modernist criticism and what have you."

—Solomon Feferman, Stanford University

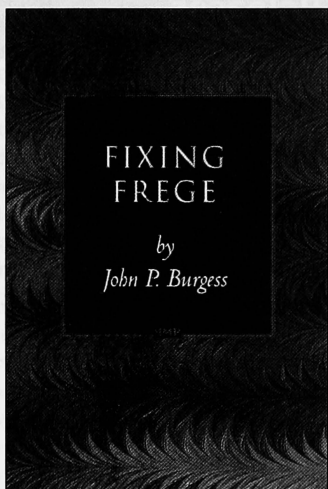
ASL Members order online at [www.akpeters.com](http://www.akpeters.com)

Discount code: ASLMember

Phone: 781.416.2888      A K Peters, Ltd.  
Fax: 781.416.2889      888 Worcester St. Suite 230  
Email: [service@akpeters.com](mailto:service@akpeters.com)      Wellesley, MA 02482

<http://www.akpeters.com>

# Rethinking Mathematics



## FIXING FREGE

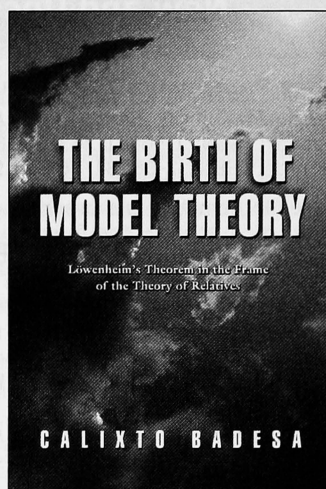
*John P. Burgess*

Bertrand Russell discovered a contradiction in Gottlob Frege's purely logical foundation for mathematics. Thereafter, mathematicians and logicians turned in other directions to look for a framework for modern abstract mathematics. John Burgess considers every proposed fix of Frege's system, each with distinctive philosophical advantages and drawbacks.

**"This book is without match. I suspect that it will be used both as a general introduction to the subject and as a source on particular topics for years to come."** —Kit Fine, New York University

*Princeton Monographs in Philosophy:*  
Harry Frankfurt, editor

Cloth \$39.95 0-691-12231-8



## THE BIRTH OF MODEL THEORY

Löwenheim's Theorem in the Frame of the Theory of Relatives

*Calixto Badesa*

Löwenheim's theorem reflects a critical point in the history of mathematical logic, the birth of model theory. Calixto Badesa provides both the first sustained, book-length analysis of Löwenheim's proof and a detailed description of the theoretical framework—and, in particular, of the algebraic tradition—that made the theorem possible.

**"Calixto Badesa draws well-supported conclusions that contradict the entire modern body of scholarship on the topic."**

—Shaughan Lavine, University of Arizona

Cloth \$49.95 0-691-05853-9 Due February

**100** Celebrating 100 Years of Excellence  
**PRINCETON**  
University Press

(0800) 243407 U.K. • 800-777-4726 U.S.  
Read excerpts online  
[www.pup.princeton.edu](http://www.pup.princeton.edu)

*Communications* should be announcements of important new results and ideas in any aspect of logic; they may be short papers in their final form or preliminary announcements (extended abstracts, position papers) of longer, full papers that will be published elsewhere. In any case, they should include, in addition to a description of the new results or ideas, enough history, background, and explanation to make the significance of the work apparent to a wide audience. *Communications* will be quickly refereed and published within six months of the submission of final versions.

Articles should be submitted to **Akihiro Kanamori**, *Department of Mathematics, Boston University, Boston, MA 02215, USA* (aki@math.bu.edu); *Communications* may be submitted to the Managing Editor **Andreas R. Blass**, *Department of Mathematics, University of Michigan, Ann Arbor, MI 48109, USA* (ablass@umich.edu); or to any of the other editors: **John P. Burgess**, *Department of Philosophy, Princeton University, Princeton, NJ 08544, USA* (jburgess@pucc.princeton.edu); or **Matthew Foreman**, *Department of Mathematics, University of California, Irvine, CA 92697, USA* (mforeman@math.uci.edu); or **Phokion Kolaitis**, *Department of Computer Science, University of California Santa Cruz, Santa Cruz, CA 95064, USA* (kolaitis@cse.ucsc.edu); or **Manuel Lerman**, *Department of Mathematics, University of Connecticut, Storrs, CT 06269, USA* (mlerman@math.uconn.edu); or **H. Dugald Macpherson**, *Department of Pure Mathematics, University of Leeds, Leeds LS2 9JT, England* (pmthdm@amsta.leeds.ac.uk).

Books for review in the BULLETIN should be sent to **ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604, USA**. The Managing Editor for Reviews is **Alasdair Urquhart**, *Department of Philosophy, University of Toronto, 215 Huron Street, Toronto, Ontario, Canada M5S 1A1* (urquhart@cs.toronto.edu). The other editors of reviews are **Lev Beklemishev** (lev@phil.uu.nl), **David Evans** (d.evans@uea.ac.uk), **Erich Grädel** (graedel@informatik.rwth-aachen.de), **Geoffrey Hellman** (hellm001@umn.edu), **Denis Hirschfeldt** (drh@math.uchicago.edu), **Thomas Jech** (jech@math.psu.edu), **Julia Knight** (knight.1@nd.edu), **Michael C. Laskowski** (mcl@math.umd.edu), **Volker Peckhaus** (peckhaus@hrz.upb.de), **Wolfram Pohlers** (pohlers@escher.uni-muenster.de), and **Stawomir Solecki** (ssolecki@math.uiuc.edu).

Submitted manuscripts should be typewritten with wide margins and with double spacing between the lines, or prepared with a word processor, such as L<sup>A</sup>T<sub>E</sub>X or Microsoft Word. Two copies of the manuscript should be sent to the editor, and the author should also keep a complete copy and the electronic file from which the submitted copy was prepared, if a word processor was used. After the paper is accepted in its final form, an electronic copy will be appreciated and will advance the final publication date of the paper, especially if it is in L<sup>A</sup>T<sub>E</sub>X or A<sub>M</sub>S-L<sup>A</sup>T<sub>E</sub>X. The JOURNAL and the BULLETIN OF SYMBOLIC LOGIC are typeset in a version of A<sub>M</sub>S-L<sup>A</sup>T<sub>E</sub>X, using a stylefile which is posted on the ASL Website, <http://www.aslonline.org>, along with instructions for its use. Fifty offprints of each article are supplied at no charge, and additional offprints may be purchased if desired.

Postscript files of articles published in the BULLETIN may be downloaded using a Web browser from <http://www.math.ucla.edu/~asl/bsltoc.htm>. All volumes of the BULLETIN also are available online in the JSTOR database.

Requests for information, applications for membership, orders for back volumes, business correspondence, and notices and announcements for publication in the BULLETIN should be sent to the Secretary-Treasurer of the Association, **Charles Steinhorn**, *ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604 USA*. The electronic mail address of the Association's business office is [asl@vassar.edu](mailto:asl@vassar.edu). The ASL Website is located at <http://www.aslonline.org>.

All back volumes of the BULLETIN are available, from the Office of the Secretary-Treasurer who has information on prices and discounts to individual and institutional members.

The paper used in this BULLETIN is acid-free and falls within the guidelines established to ensure permanence and durability.





1079-8986(200312)9:4\*;1-5