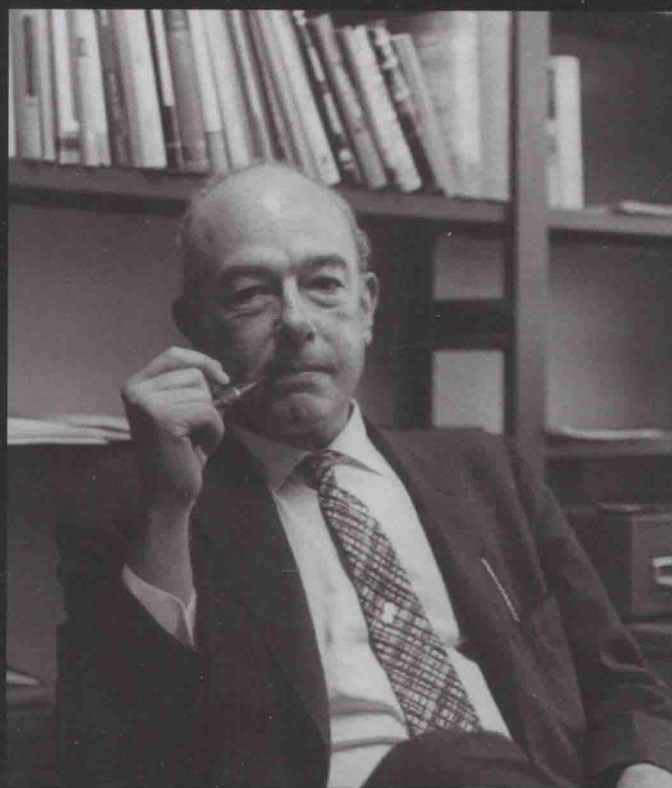


*Blackwell  
Companions to  
Philosophy*

# A COMPANION TO W.V.O. QUINE



*Edited by*  
GILBERT HARMAN AND  
ERNIE LEPORE

WILEY Blackwell

# A Companion to W.V.O. Quine

*Edited by*

Gilbert Harman  
Ernie Lepore



WILEY Blackwell

# A Companion to W.V.O. Quine

# Blackwell Companions to Philosophy

**This outstanding student reference series offers a comprehensive and authoritative survey of philosophy as a whole. Written by today's leading philosophers, each volume provides lucid and engaging coverage of the key figures, terms, topics, and problems of the field. Taken together, the volumes provide the ideal basis for course use, representing an unparalleled work of reference for students and specialists alike.**

## Already published in the series:

1. The Blackwell Companion to Philosophy, Second Edition  
*Edited by Nicholas Bunnin and Eric Tsui-James*
2. A Companion to Ethics  
*Edited by Peter Singer*
3. A Companion to Aesthetics, Second Edition  
*Edited by Stephen Davies, Kathleen Marie Higgins, Robert Hopkins, Robert Stecker, and David E. Cooper*
4. A Companion to Epistemology, Second Edition  
*Edited by Jonathan Dancy, Ernest Sosa and Matthias Steup*
5. A Companion to Contemporary Political Philosophy (two-volume set), Second Edition  
*Edited by Robert E. Goodin and Philip Pettit*
6. A Companion to Philosophy of Mind  
*Edited by Samuel Guttenplan*
7. A Companion to Metaphysics, Second Edition  
*Edited by Jaegwon Kim, Ernest Sosa and Gary S. Rosenkrantz*
8. A Companion to Philosophy of Law and Legal Theory, Second Edition  
*Edited by Dennis Patterson*
9. A Companion to Philosophy of Religion, Second Edition  
*Edited by Charles Taliaferro, Paul Draper, and Philip L. Quinn*
10. A Companion to the Philosophy of Language  
*Edited by Bob Hale and Crispin Wright*
11. A Companion to World Philosophies  
*Edited by Eliot Deutsch and Ron Bontekoe*
12. A Companion to Continental Philosophy  
*Edited by Simon Critchley and William Schroeder*
13. A Companion to Feminist Philosophy  
*Edited by Alison M. Jaggar and Iris Marion Young*
14. A Companion to Cognitive Science  
*Edited by William Bechtel and George Graham*
15. A Companion to Bioethics, Second Edition  
*Edited by Helga Kuhse and Peter Singer*
16. A Companion to the Philosophers  
*Edited by Robert L. Arrington*
17. A Companion to Business Ethics  
*Edited by Robert E. Frederick*
18. A Companion to the Philosophy of Science  
*Edited by W. H. Newton-Smith*
19. A Companion to Environmental Philosophy  
*Edited by Dale Jamieson*
20. A Companion to Analytic Philosophy  
*Edited by A. P. Martinich and David Sosa*
21. A Companion to Genetics  
*Edited by Justine Burley and John Harris*
22. A Companion to Philosophical Logic  
*Edited by Dale Jacquette*
23. A Companion to Early Modern Philosophy  
*Edited by Steven Nadler*
24. A Companion to Philosophy in the Middle Ages  
*Edited by Jorge J. E. Gracia and Timothy B. Noone*
25. A Companion to African-American Philosophy  
*Edited by Tommy L. Lott and John P. Pittman*
26. A Companion to Applied Ethics  
*Edited by R. G. Frey and Christopher Heath Wellman*
27. A Companion to the Philosophy of Education  
*Edited by Randall Curren*
28. A Companion to African Philosophy  
*Edited by Kwasi Wiredu*
29. A Companion to Heidegger  
*Edited by Hubert L. Dreyfus and Mark A. Wrathall*
30. A Companion to Rationalism  
*Edited by Alan Nelson*
31. A Companion to Pragmatism  
*Edited by John R. Shook and Joseph Margolis*
32. A Companion to Ancient Philosophy  
*Edited by Mary Louise Gill and Pierre Pellegrin*
33. A Companion to Nietzsche  
*Edited by Keith Ansell Pearson*
34. A Companion to Socrates  
*Edited by Sara Ahbel-Rappe and Rachana Kamtekar*
35. A Companion to Phenomenology and Existentialism  
*Edited by Hubert L. Dreyfus and Mark A. Wrathall*
36. A Companion to Kant  
*Edited by Graham Bird*
37. A Companion to Plato  
*Edited by Hugh H. Benson*
38. A Companion to Descartes  
*Edited by Janet Broughton and John Carriero*
39. A Companion to the Philosophy of Biology  
*Edited by Sahotra Sarkar and Anya Plutynski*
40. A Companion to Hume  
*Edited by Elizabeth S. Radcliffe*
41. A Companion to the Philosophy of History and Historiography  
*Edited by Aviezer Tucker*
42. A Companion to Aristotle  
*Edited by Georgios Anagnostopoulos*
43. A Companion to the Philosophy of Technology  
*Edited by Jan-Kyrre Berg Olsen, Stig Andur Pedersen, and Vincent F. Hendricks*
44. A Companion to Latin American Philosophy  
*Edited by Susana Nuccetelli, Ofelia Schutte, and Otávio Bueno*
45. A Companion to the Philosophy of Literature  
*Edited by Garry L. Hagberg and Walter Jost*
46. A Companion to the Philosophy of Action  
*Edited by Timothy O'Connor and Constantine Sandis*
47. A Companion to Relativism  
*Edited by Steven D. Hales*
48. A Companion to Hegel  
*Edited by Stephen Houlgate and Michael Baur*
49. A Companion to Schopenhauer  
*Edited by Bärnt Vandenabeele*
50. A Companion to Buddhist Philosophy  
*Edited by Steven M. Emmanuel*
51. A Companion to Foucault  
*Edited by Christopher Falzon, Timothy O'Leary, and Jana Sawicki*
52. A Companion to the Philosophy of Time  
*Edited by Heather Dyke and Adrian Bardon*
53. A Companion to Donald Davidson  
*Edited by Ernest Lepore and Kirk Ludwig*
54. A Companion to Rawls  
*Edited by Jon Mandle and David Reidy*
55. A Companion to W.V.O. Quine  
*Edited by Gilbert Harman and Ernie Lepore*

## Forthcoming:

- A Companion to Derrida, Edited by Leonard Lawlor and Zeynep Direk  
A Companion to Locke, Edited by Matthew Stuart

## Notes on Contributors

**Lars Bergström** is Emeritus Professor of Practical Philosophy at Stockholm University and a member of the Royal Swedish Academy of Sciences and of the Norwegian Academy of Science and Letters. His main areas of interest are moral philosophy, philosophy of science, and the philosophy of W.V. Quine.

**John P. Burgess** is the John N. Woodhull Professor of Philosophy at Princeton University, where he has taught since 1975. He is the author of scores of papers on different branches of mathematical and philosophical logic, on philosophy of mathematics and logic and language, and on the history of analytic philosophy. He is also author or coauthor of seven books, most recently *Saul Kripke: Puzzles and Mysteries*.

**Gary Ebbs** is Professor and Chair of Philosophy at Indiana University, Bloomington. He is the author of *Rule-Following and Realism* (1997), *Truth and Words* (2009), and (with Anthony Bruckner) *Debating Self-Knowledge* (2012), as well as a number of articles on topics in the philosophy of language and the history of analytic philosophy.

**Tyrus Fisher's** primary area of research is in the philosophy of language, though his work intersects with issues in the philosophy of science and the history of analytic philosophy. He is a graduate student at the University of California, Davis.

**Dagfinn Føllesdal** studied science and mathematics in Oslo and Göttingen 1950–57 before going to Harvard to study with Quine. After his PhD in 1961 he taught at Harvard and then in Oslo (1967–99). From 1968 to 2012 he taught at Stanford, from 1976 as C.I. Lewis Professor of Philosophy.

He is the author of books and articles on philosophy of language and on phenomenology.

**Olav Gjelsvik** is Professor of Philosophy and Director of The Centre for the Study of Mind in Nature at the University of Oslo. Educated in Oslo and at Balliol College Oxford, he works in epistemology, metaphysics, philosophy of mind, and philosophy of action, and has also written several papers about addiction. He is a member of the Norwegian Academy of Science and Letters, The Royal Norwegian Society of Sciences and Letters, and also of the Academia Europaea.

**Michael Glanzberg** is Professor of Philosophy at Northwestern University. He works in the areas of philosophy of language, logic, and metaphysics.

**Hans-Johann Glock** is Professor of Philosophy at the University of Zurich (Switzerland), and Visiting Professor at the University of Reading (UK). He is the author of *A Wittgenstein Dictionary* (Blackwell, 1996), *Quine and Davidson on language, thought and reality* (Cambridge University Press, 2003), *La mente de los animales* (KRK 2009) and *What is Analytic Philosophy?* (Cambridge University Press, 2008). He has published numerous articles on the philosophy of mind, the philosophy of language, the history of analytic philosophy, and Wittgenstein. At present he is working on a book on animal minds and co-editing *The Blackwell Companion to Wittgenstein*.

**Peter Godfrey-Smith** has taught at Stanford, Harvard, and the Australian National University, and is currently Distinguished Professor of Philosophy at the CUNY Graduate Center. His books include *Theory and Reality* and *Darwinian Populations and Natural Selection*.

**Martin Gustafsson** is Professor of Philosophy at Åbo Akademi University, Finland. He has published papers on Quine, Cavell, Davidson, McDowell, Wittgenstein, and others. He is the editor (together with Richard Sørli) of *The Philosophy of J.L. Austin* (Oxford University Press, 2011).

W.V. Quine was **Gilbert Harman**'s dissertation adviser at Harvard. Harman teaches at Princeton University, where he is James S. McDonnell Distinguished University Professor of Philosophy. He has wide interests in epistemology, language, mind, and ethics. His books include *Thought* (1973), *The Nature of Morality* (1977), and *Change in View* (1986). Judith Thomson and Harman wrote *Moral Relativism and Moral Objectivity* (1996). Sanjeev Kulkarni and Harman have written two books, *Reliable Reasoning* (2007) and *An Elementary*

*Introduction to Statistical Learning Theory* (2011). Some of his philosophical papers have been republished in two collections, *Reasoning, Meaning, and Mind* (2009) and *Explaining Value and Other Essays in Moral Philosophy* (2010).

**Peter Hylton** was educated at King's College, Cambridge, and at Harvard University. He is Professor of Philosophy and Distinguished Professor at the University of Illinois, Chicago. He is the author of *Russell, Idealism, and the Emergence of Analytic Philosophy* (Oxford University Press, 1990), of *Quine* (Routledge, 2007), and of numerous essays, chiefly on the history of analytic philosophy, some of which are collected in *Propositions, Functions, and Analysis* (Oxford University Press, 2005).

**Bredo Johnsen** received his BA in philosophy from Wayne State University in 1961 and PhD in philosophy from Harvard University in 1973. He has taught at the University of Houston since 1967. His work has centered largely on skepticism, especially on Sextus Empiricus, Descartes, Hume, Goodman, Quine, and Wittgenstein, with detours into Putnam, Rorty, Plantinga, and Dretske. For some time, his efforts have been devoted to showing how, beginning with Goodman, and culminating in Quine, Hume's "skepticism" has inspired the development of a powerful conception of epistemic justification.

**Thomas Kelly** is Professor of Philosophy at Princeton University. Prior to coming to Princeton, he taught at the University of Notre Dame and was a Junior Fellow at Harvard University, where he received his PhD. His published work includes papers exploring the nature of evidence and rationality, the significance of disagreement, and the status of "common sense" responses to revisionary philosophical theorizing. He is currently at work on a book about dogmatism.

**Gary Kemp** is a Senior Lecturer at the University of Glasgow. Along with papers on Frege, Russell, Davidson, Wittgenstein, and Quine, he is the author of *Quine versus Davidson: Truth, Reference and Meaning* (Oxford University Press, 2012), and of *What is this thing called Philosophy of Language?* (2013).

**Sandra Lapointe** is Associate Professor of Philosophy and Academic Director of the Lewis and Ruth Sherman Centre for Digital Scholarship at McMaster University. She specializes in the history of analytical philosophy. She is the author of a number of books, articles, and book chapters on Bolzano and various other aspects of nineteenth- and twentieth-century philosophy in the German-speaking world and beyond.

**Ernie Lepore** is a Professor of Philosophy at Rutgers University. He works primarily in philosophy of language and mind.

**Alex Orenstein**, Professor Emeritus, The Graduate Center, and Queens College, City University of New York, Visiting Member of the common room, Wolfson College, Oxford. Works include *W.V.O. Quine* (Princeton University Press, 2002); *Knowledge, Language and Logic, Questions for Quine*, Boston Studies in the Philosophy of Science, ed. A. Orenstein and P. Kotatko (Kluwer Academic Publishers, 2000); "Reconciling Aristotle and Frege," *Notre Dame Journal of Formal Logic*, Summer 1999; and "Quine versus Quine" in *Naturalism, Reference and Ontology, Essays for Roger Gibson*, ed. Chase B. Wrenn (Peter Lang, 2009).

**Gary Ostertag** is the Director of the Saul Kripke Center at The Graduate Center of the City University of New York, where he is also Visiting Associate Professor of Philosophy, and Associate Professor of Philosophy at Nassau Community College. He is the editor of *Definite Descriptions: A Reader* (MIT Press, 1998) and *Meanings and Other Things: Essays on Stephen Schiffer* (Oxford University Press, 2014). He has published in the philosophy of language – particularly in the areas of propositional attitude attribution and the theory of descriptions – as well as the history of analytic philosophy and musical ontology.

**Peter Pagin** is Professor of Theoretical Philosophy at Stockholm University. He works in several subareas of the philosophy of language. Among other things, he has written about compositionality, non-extensional contexts, assertion, and vagueness.

**Gideon Rosen** is Stuart Professor of Philosophy and Chair of the Council of the Humanities at Princeton University.

**Gillian Russell** is an Associate Professor in the philosophy department at Washington University in St Louis. She is the author of *Truth in Virtue of Meaning: A defence of the Analytic/Synthetic Distinction* as well as papers on topics in the philosophy of language, logic, and epistemology.

**Adam Sennet** works on a variety of topics in the philosophy of language such as presupposition, context sensitivity, vagueness and (bi-)conditionals. He is an Associate Professor at the University of California, Davis.

**Robert Sinclair** is an Associate Professor in the Department of Philosophy, Brooklyn College, The City University of New York. His work examines themes at the intersection of pragmatist philosophy, philosophical naturalism, and the



history of analytic philosophy. He is currently working on a manuscript that charts the influence of C.I. Lewis on Quine's early philosophical development.

**Barry C. Smith** is a Professor of Philosophy and Director of the Institute of Philosophy at the University of London's School of Advanced Study and founding director of the Centre for the Study of the Senses. He has published in the philosophy of language and mind, and on flavour perception. He co-edited *The Oxford Handbook of Philosophy of Language* (Oxford University Press, 2008) with Ernest Lepore; and in 1998 he co-edited *Knowing Our Own Minds* (Oxford University Press) with Crispin Wright and Cynthia Macdonald.

**Scott Soames** is Distinguished Professor and Director of the School of Philosophy at the University of Southern California. His recent books include: *The Analytic Tradition, Volume 1: Founding Giants, What is Meaning?*, *Philosophy of Language, Analytic Philosophy in America and other Historical and Contemporary Essays*, and, with Jeff King and Jeff Speaks, *New Thinking about Propositions*.

**Alan Weir** is Professor of Philosophy at the University of Glasgow. He has published a monograph on philosophy of mathematics – *Truth through Proof: A Formalist Foundation for Mathematics* (Oxford University Press, 2010) – and articles on, among other topics, Quine, philosophy of mathematics, and logic, in journals such as *Mind*, *Philosophia Mathematica*, and the *Notre Dame Journal of Formal Logic*.

# Contents

<i>Notes on Contributors</i>	ix
Introduction: Life and Work	1
<i>Gilbert Harman and Ernie Lepore</i>	
<b>Part I Method</b>	<b>15</b>
1 Quine and Epistemology	17
<i>Thomas Kelly</i>	
2 Quine and the A Priori	38
<i>Lars Bergström</i>	
3 Quine and Pragmatism	54
<i>Peter Godfrey-Smith</i>	
4 Quine's Relationship with Analytic Philosophy	69
<i>Gary Kemp</i>	
5 Quine on Paraphrase and Regimentation	89
<i>Adam Sennet and Tyrus Fisher</i>	
6 Quine's Naturalism	114
<i>Alan Weir</i>	
7 Quine's Naturalism Revisited	148
<i>Peter Hylton</i>	
<b>Part II Language</b>	<b>163</b>
8 Inscrutability Scrutinized	165
<i>Alex Orenstein</i>	

## CONTENTS

9	Quine on the Analytic/Synthetic Distinction <i>Gillian Russell</i>	181
10	Quine, Analyticity, and Transcendence <i>Ernie Lepore</i>	203
11	Indeterminacy, Relativity, and Behaviorism <i>Gilbert Harman</i>	219
12	Indeterminacy of Translation <i>Peter Pagin</i>	236
13	Developments in Quine's Behaviorism <i>Dagfinn Føllesdal</i>	263
<b>Part III Logic, Mathematics, Science</b>		<b>279</b>
14	Quine's Philosophy of Logic and Mathematics <i>John P. Burgess</i>	281
15	Bolzano, Quine, and Logical Truth <i>Sandra Lapointe</i>	296
16	Quine on Observationality <i>Olav Gjelsvik</i>	313
17	Observation <i>Bredo C. Johnsen</i>	333
18	Quine on Evidence <i>Robert Sinclair</i>	350
19	Quine on Reference and Quantification <i>Michael Glanzberg</i>	373
<b>Part IV Relation to Other Philosophers</b>		<b>401</b>
20	Quine and Russell <i>Gary Ostertag</i>	403
21	The Place of Quine in Analytic Philosophy <i>Scott Soames</i>	432
22	Quine's Naturalistic Explication of Carnap's Logic of Science <i>Gary Ebbs</i>	465
23	Quine and Chomsky on the Ins and Outs of Language <i>Barry C. Smith</i>	483

## CONTENTS

24	Quine's Conception of Explication – and Why It Isn't Carnap's <i>Martin Gustafsson</i>	508
25	The Relation between Quine and Davidson <i>Hans-Johann Glock</i>	526
26	Quine and the Revival of Metaphysics <i>Gideon Rosen</i>	552
	<i>Name Index</i>	571
	<i>Subject Index</i>	576

# Introduction:

## *Life and Work*

GILBERT HARMAN AND ERNIE LEPORE

W.V.O. Quine was born on June 24, 1908 in Akron, Ohio. He graduated from Oberlin College in Ohio in 1930 with a major in mathematics and honors in mathematical logic. He tells us in his autobiography that he worked through Venn's *Symbolic Logic*, Peano's *Formulair de mathematiques*, Courtura's *Algebra of Logic*, Whitehead's *Introduction to Mathematics*, and Whitehead and Russell's *Principia Mathematica*. This last work together with Russell's "On Denoting" deeply impressed Quine, as did his exposure to J.B. Watson's behaviorism in a psychology class. (Quine's version of behaviorism is discussed by Dagfinn Føllesdal and Gilbert Harman in this volume.)

Quine entered the graduate program at Harvard in the fall of 1930. He amazingly completed his PhD in two years at the age of 23, with a dissertation *The Logic of Sequences: A generalization of Principia Mathematica*, directed by Whitehead. He was awarded a Sheldon Travel Fellowship for 1932–33, during which he visited Vienna, attending Moritz Schlick's Vienna Circle, where he met Kurt Gödel, F. Waismann, and A.J. Ayer, among others. He worked with R. Carnap in Prague and later visited Warsaw, where he met the logicians Stanisław Leśniewski, Jan Łukasiewicz, and Alfred Tarski.

On Carnap's influence on him, Quine wrote:

Carnap was my greatest teacher. I got to him in Prague . . . just a few months after I had finished my formal studies and received my Ph.D. I was very much his disciple for six years. In later years his views went on evolving and so did mine, divergent ways. But even where we disagreed he was still setting the theme; the line of my thought was largely determined by problems that I felt his position

presented. ("Homage to Rudolf Carnap," 41; cf. also Gary Ebbs' essay in this volume)

Upon his return to the United States, Quine began a three-year fellowship in the first class of the Harvard Society of Junior Fellows. In 1934, he gave three lectures on Carnap, introducing his philosophy to an American audience. Martin Gustafsson's contribution to this volume discusses Carnap's and Quine's contrasting conceptions of explication.

In 1936, Quine was appointed to the Harvard philosophy faculty. In 1942, he joined the Navy, resuming his position at Harvard in 1946. In 1948, he was made a senior fellow in the Harvard Society of Fellows. He remained at Harvard until 1978; he continued to lecture around the world and to publish until 1998, when he was 90. He died on Christmas Day, 2000 at the exact age of 92½.

During his 65-year-long career he published over twenty books and well over a hundred articles, having made significant contributions to a large number of fields within philosophy, including epistemology, metaphysics, logic, set theory, philosophy of logic, philosophy of language, and philosophy of science. It is uncontroversial that Quine was one of the most influential philosophers of the twentieth century, along with Carnap, Russell, and Wittgenstein. (See the website maintained by Quine's son, Douglas Quine: <http://www.wvquine.org>.)

## 1. Naturalism

Quine's naturalism committed him to:

1. There is no first philosophy – no experiential or a priori foundation outside of science upon which science can be justified or rationally reconstructed.
2. It is up to science to tell us what there is (ontology) and how we know it (epistemology). Further, the currently best science advocates physicalism and empiricism.

Quine's naturalism is discussed by the authors in the first section of this volume: Thomas Kelly, Robert Sinclair, Lars Bergström, Peter Godfrey-Smith, Adam Sennet and Tyrus Fisher, Alan Weir, and Peter Hylton. In the philosophy of language, Quine's physicalism involves a rejection of mind–body dualism and mentalistic semantics, a rejection that Barry Smith discusses in his contribution. On the other hand, Quine accepts the existence of abstract objects of mathematics, such as numbers and sets. According to Quine, science would be

impossible without them. Gideon Rosen, John Burgess, Gary Ebbs, Hans-Johann Glock, and Alan Weir discuss Quine's views about these and related issues.

## 2. Extensionalism

Quine argues for purely extensional descriptions of the world. A description is extensional if and only if its truth value does not change when replacing a constituent sentence with another of the same truth value, or a predicate by another with the same extension, or a singular term by another with the same designatum. For example, the context of "Hesperus" in "Hesperus is the morning star" is extensional because a co-designatum of "Hesperus", say 'Phosphorous', can be substituted in the context to produce a sentence ('Phosphorus is the morning star') with the same truth value. However, the context 'The ancients believed that Hesperus is the morning star' is not extensional because its co-designatum, 'Phosphorus', can be substituted in the context to produce a sentence with a *different* truth value.

Quine's extensionalism is the doctrine that extensionality is necessary for a full understanding of a theory. A paradigmatic extensional language is first-order predicate logic with relations including identity and the membership relation of set theory. That is Quine's canonical idiom. Quine maintains that one can determine the ontological commitments of a theory only if it is expressed in the canonical idiom. Then one must note the range of its bound variables. This criterion does not determine what exists, it determines what a theory says exists. Moreover, for an entity to be the value of a bound variable, it must have identity criteria: no entity without identity. For example, physical objects are identical if and only if they occupy exactly the same region(s) of space-time, while sets are identical if and only if they have the same members. Quine's ontological physicalism countenances a bifurcated but extensional ontology: When the best scientific theory is translated into a canonical idiom, we find it irreducibly quantifying over both concrete and abstract objects, namely, physical objects and sets.

Gary Ostertag's contribution to this volume contains a critical discussion of Russell and Quine on extensionalism. Other relevant contributions include those by John Burgess, Sandra Lapointe, Michael Glanzberg, Scott Soames, and Martin Gustafsson.

## 3. Empiricism

Returning to Quine's naturalism, we should note that as an empiricist Quine accepts its two cardinal tenets: "Whatever evidence there is for science is sensory

evidence . . . [and] all inculcation of meanings of words must rest ultimately on sensory evidence" ("Epistemology Naturalized," 75). Consistent with his naturalism, Quine cites science as the source of these tenets:

Science itself teaches us that the only information that can reach our sensory surfaces from external objects must be limited to two-dimensional optical projections and various impacts of air waves on the eardrums and some gaseous reactions in the nasal passages and a few kindred odds and ends. (*The Roots of Reference*, 2)

His acceptance of a physicalist ontology and an empiricist epistemology is based on scientific findings. The domains of the scientist and of the philosopher are distinct but overlapping. In *Word and Object*, Quine put the point as follows:

Given physical objects in general, the natural scientist is the man to decide about wombats and unicorns. Given classes, or whatever other broad realm of objects the mathematician needs, it is for the mathematician to say whether in particular there are even prime numbers or any cubic numbers that are sums of pairs of cubic numbers. On the other hand it is scrutiny of this uncritical acceptance of the realm of physical objects, or of classes, etc., that devolves upon ontology. Here is the task of making explicit what had been tacit, and precise what had been vague, of exposing and resolving paradoxes, smoothing kinks, lopping off vestigial growths, clearing ontological slums . . . . The philosopher's task differs from others', then, in detail; but in no such drastic way as those suppose who imagine for the philosopher a vantage point outside the conceptual scheme that he takes in charge. There is no such cosmic exile. He cannot study and revise the fundamental conceptual scheme of science and common sense without having some conceptual scheme, the same or another no less in need of philosophical scrutiny, in which to work. (*Word and Object*, 275–276)

Quine's commitments to physicalism and empiricism are strong but cautious. See also John Burgess's contribution to this volume.

#### 4. Naturalized Epistemology

Quine repudiates first philosophy, but does not repudiate epistemology altogether. There remains naturalized epistemology: the scientific study of man's acquisition of science.

A far cry, this, from old epistemology. Yet it is no gratuitous change of subject matter, but an enlightened persistence rather in the original epistemological



problem. It is enlightened in recognizing that the skeptical challenge springs from science itself, and that in coping with it we are free to use scientific knowledge. The old epistemologist failed to recognize the strength of his position. (*The Roots of Reference*, 3)

Some philosophers claim that Quine's naturalized epistemology is no epistemology at all, for epistemology is normative and naturalized epistemology (the scientific study of man's acquisition of science) drops the normative in favor of the descriptive. However, as Quine explains,

The normative is naturalized, not dropped. The crowning normative principle of naturalized epistemology is nothing less than empiricism itself; for empiricism is both a rule of scientific method and a scientific discovery. It is natural science that tells us that our information about the world comes only through impacts on our sensory surfaces. And it is conspicuously normative, counselling us to mistrust soothsayers and telepathists . . . . For normative content of a more technical kind we may look to mathematical statistics. These norms, again, are at the level of science itself. Normative epistemology, under naturalism, is simply the technology of science, the technology of predicting sensory stimulation. It is scientific method. ("Comment on Lauener," 229)

Quine regards naturalized epistemology to be far from Descartes' rationalism and Carnap's empiricism:

I think that for scientific or philosophical purposes the best we can do is give up the notion of knowledge as a bad job and make do rather with its separate ingredients. We can still speak of a belief as true, and of one belief as firmer or more certain, to the believer's mind, than another. There is also the element of justification . . . . These reflections perhaps belong in their rudimentary way to the branch of philosophy known as epistemology, the theory of knowledge. Rejection of the very concept of knowledge is oddly ironic. (*Quiddities*, 109)

Consider three versions of Quine's naturalism: (1) Science contains epistemology in the sense that engaging in epistemology presupposes an accepted scientific framework as background; epistemology contains science insofar as science is constrained by the findings of epistemology. (2) Quine embraces Neurath's likening "science to a boat which, if we are to rebuild it, we must rebuild plank by plank, while staying afloat in it. The philosopher and the scientist are in the same boat" (*Word and Object*, 3). (3) On positing of objects, Quine writes:

To call a posit a posit is not to patronize it. A posit can be unavoidable except at the cost of other no less artificial expedients. Everything to which we concede