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978-0-521-79628-6 - The Cambridge Companion to Logical Empiricism

Edited by Alan Richardson and Thomas Uebel

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ALAN RICHARDSON AND THOMAS UEBEL

Introduction

If there is a movement or school that epitomized or typified analytic philosophy in the middle of the twentieth century, it was, by all odds, logical empiricism.¹ Logical empiricists such as Hans Reichenbach, Rudolf Carnap, Carl G. Hempel, and Herbert Feigl had, by 1950, influenced the major fields of analytic philosophy. They had been instrumental in creating a scientifically and technically informed philosophy of science, in establishing mathematical logic as a topic in and a tool for philosophy, and in creating the project of formal semantics. Logical empiricism provided an importantly new understanding of the nature of empiricism and a new rejection of metaphysics. Accounts of analytic philosophy written in the middle of the twentieth century give logical empiricism a central place in the project, often repeating for analytic philosophy the revolutionary rhetoric of early logical empiricism.

Because of this importance of logical empiricism in establishing the project of analytic philosophy, philosophical innovations both within and outside the analytic tradition in the 1960s and 1970s often were at pains to distance themselves from one aspect or another of logical empiricism. Karl Popper's philosophy of science, for example, distanced itself from concerns about the meaningfulness of metaphysics, whereas Thomas Kuhn's historical philosophy of science distanced itself from the formalism and

¹ Throughout this book "logical empiricism" is understood to be synonymous with "logical positivism," or even "neopositivism," unless it is clear in context that a distinction is being drawn. Some logical empiricists thought the names had different reference, but most did not; in any case, by the middle of the 1930s, "logical empiricism" was the preferred term for leading representatives of both camps. Thus, we have chosen it rather than the more well-known but more misleading "logical positivism."

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ahistorical approach to philosophy of science that had become associated with logical empiricism. Similarly, in philosophy of language, Saul Kripke's semantics of modal logic and "new theory of reference" enforced a turn toward metaphysics in formal semantics, whereas Donald Davidson and W. V. O. Quine, each in his own way, moved semantics away from formalism and toward a naturalistic empiricism. Such moves away from (what were understood to be) central commitments of logical empiricism, whether explicit or implicit, were widely noted and embraced. By the 1970s, logical empiricism had few advocates, and the project became firmly associated with a set of discarded philosophical doctrines and methods. Further afield, the positivism associated with logical empiricism was widely decried in European philosophy and in the social sciences as too narrowly scientific and, thus, able neither to illuminate the business of social science nor to serve as a proper basis for philosophy. The first wave of interpretative accounts of logical empiricism had placed it at the heart of analytic philosophy, and the second, therefore, was constructed to show how philosophy should progress or had progressed beyond logical empiricism.

Since roughly the early 1980s a new literature has arisen that is less argumentative with or dismissive of logical empiricism, a literature that seeks to understand the place of logical empiricism in its historical, scientific, and philosophical contexts. This work proceeds in important ways on both sides of the Atlantic Ocean as scholars reconsider the origins of logical empiricism in Europe in the early twentieth century and its transmission to North America and throughout the world with the rise of fascism in Europe in the 1930s. This work has engaged not only philosophers but also intellectual historians, historians and sociologists of science, and researchers in intellectual migration and exile from Europe in the twentieth century. The purpose of this volume is to provide an entry into this new literature on the reappraisal of logical empiricism as well as suggestions for further reading.

This new work in the reappraisal of logical empiricism seeks to be more fair and disinterested than previous work – it is designed neither to sign up recruits nor to induce an act of intellectual homicide nor yet to preside over a funeral. Nevertheless, the work is not antiquarian. It agrees with both the early promotional and the later critical literature in finding logical empiricism central to analytic

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philosophy in the twentieth century. It is based, however, in the sensibility that the philosophical significance of logical empiricism has not been adequately judged and that this is to the detriment of contemporary philosophy generally. The work this volume introduces, then, seeks to be both historically accurate and philosophically informed; throughout an eye will always be open to questions of the significance of logical empiricism to contemporary projects in philosophy – and to projects that might be available for tomorrow's philosophers to take up.

Logical empiricism, whatever else it might be or have been, was a movement or program for philosophy that developed in Central Europe. A number of scientifically minded philosophers and philosophically minded scientists came together in various places throughout Europe to reflect on the current state of scientific and philosophical knowledge. The projects characteristic of logical empiricism developed primarily in Vienna and Berlin. The Vienna Circle, a group of researchers who met regularly from the mid-1920s to the mid-1930s under the leadership of Moritz Schlick, then the Chair for the Philosophy of the Inductive Sciences at the University of Vienna, counted among its junior members Rudolf Carnap and Schlick's student Herbert Feigl, and Hans Hahn, Philipp Frank, and Otto Neurath amongst its founders. In Berlin the Society for Scientific Philosophy was led by Hans Reichenbach and counted among its members and associates, besides Walter Dubislav and Richard von Mises, his student Carl G. Hempel. Connections were drawn also to various other centers of intellectual life in Europe in the 1920s and 1930s, such as Prague (where both Frank and Carnap worked at various times) and Warsaw (then home to the leading group working in mathematical logic, including Alfred Tarski).

Reflection upon the list of names appearing above indicates that the logical empiricists numbered among themselves several of the leading philosophers of the twentieth century – and they had substantial contact with other leading philosophers and scientists (Bertrand Russell, Ludwig Wittgenstein, Albert Einstein, Niels Bohr, Kurt Gödel, W. V. Quine, Karl Popper, David Hilbert, Hermann Weyl, et al.). Nonetheless, it was characteristic of the logical empiricists to stress the communal nature of philosophical research and the belief that philosophical results belonged to the community. For this reason, among other more quotidian ones, the editors have

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not chosen to organize the volume by individual philosopher, featuring a chapter on Schlick, one on Neurath, etc. We have, rather, chosen a topical approach, in our belief that one achieves a better sense of the group's own philosophical self-understanding by studying the topics they investigated and the methods they employed than by reading a set of quasi-biographical-cum-quasi-philosophical remarks.

Logical empiricism was a philosophy centrally concerned with science. Even when their interests moved them into areas such as semantics and metaethics, the logical empiricists sought both to understand and to promote the scientific understanding of the world. Science was, to their minds, both the locus of our best knowledge of the world and the source of hope for a brighter, less obscure and obscurantist future for philosophy. The Vienna Circle chose the term “*wissenschaftliche Weltauffassung*” – scientific world-conception – when, in 1929, they published their manifesto. Logical empiricism offered a scientific conception of the world in two senses, in fact: it offered a conception of the world that was deeply informed by science, and in doing so it sought to bring philosophy into the fold of genuinely scientific disciplines. Logical empiricism's form of scientific modernism flourished perhaps most brightly in Central Europe between the world wars and apparently lost its idealistic shine as it temporarily assumed a dominant role in post-Second World War North American philosophy (a role it never attained in Britain).

To reflect the importance of science as topic, method, and ideal among the logical empiricists, the essays in this volume are most centrally concerned with topics in general philosophy of science and in the philosophy of the special sciences. Where, for example, semantics is discussed, it is discussed in its central application for the logical empiricists – the question of the meaningfulness of scientific theories and their relation to evidential reports. Similarly, the elimination of metaphysics and the verification criterion of meaning are discussed here not as central dogmas of logical empiricism but in their contexts as part of the historical narrative of the logical empiricists' attempts to find a nonmetaphysical form of philosophy that could illuminate and reflect how science achieves knowledge of the world. Attention to then-contemporary science and its relations to then-contemporary philosophy is necessary to illuminate the philosophical moves characteristic of logical empiricism, including,

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of course, their joint sense that theirs was a philosophy entirely without doctrines, much less dogmas.

The volume is, thus, divided into thematic sections. The first section, "The Historical Context of Logical Empiricism," features essays that situate logical empiricism in the contexts of its development, first in Europe and then in the United States. Friedrich Stadler's essay examines the principal place of origin of logical empiricism, the Vienna Circle. Dieter Hoffmann's essay details the place of logical empiricism in the Berlin Society for Empirical/Scientific Philosophy. George Reisch looks at the development of logical empiricism in North America from the 1930s onward. These essays all bring new historical scholarship and historiographic subtlety to the question of the historical career and significance of logical empiricism.

The second section of the book examines some of the large issues in general philosophy of science that animated the work of the logical empiricists. Michael Friedman's essay examines the career of the notion of an *a priori* element in knowledge in logical empiricism; he points out the many twists in the understanding of the *a priori* and the lingering significance of it in mature logical empiricist philosophy of science. Maria Carla Galavotti's essay examines a project that many would think to be the heart of mature logical empiricism, the foundations of probability theory and the theory of confirmation, topics absolutely central to the logical empiricist's account of the structure and basis of scientific knowledge. Thomas Mormann examines another set of issues central to all logical empiricist theories of science: their account of the nature and structure of scientific theories. Throughout the essays in this section, the logical empiricist concerns with elucidating the place of conventions in scientific theorizing, answering questions of the relations of scientific theories to sensory evidence, and illuminating the logical structure of theories as well as other central issues in the general approach to philosophy of science within logical empiricism are examined from various angles.

The following section, "Logical Empiricism and the Philosophy of the Special Sciences," speaks to specific themes in the logical empiricist understandings of particular scientific disciplines. Steve Awodey and A. W. Carus offer an account of the particular nature of logical empiricist concerns with the foundations of mathematics

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and logic, an extraordinarily rich field both technically and philosophically, given the prominence of logic in the methods employed by the logical empiricists throughout their philosophy. Another rich field is mined by Thomas Ryckman in his detailed account of the philosophy of physics offered by logical empiricism, a philosophy both inspired by and seeking to explain the revolutionary developments in relativity theory and quantum mechanics in the early twentieth century. Logical empiricism is famous (or infamous) for its interventions in the methodology of psychology, the topic of Gary Hardcastle's essay. Thomas Uebel offers an account of the philosophy of social science embedded in the project of the physicalistic unity of science pursued especially by Otto Neurath in the 1930s and 1940s. Elisabeth Nemeth considers the hitherto scarcely explored relations between logical empiricism and contemporaneous history and sociology of science.

The final section of the book considers the relations between logical empiricism and some of its main critics. David Stern illuminates the vexed relations between the logical empiricists and Ludwig Wittgenstein through an examination of Wittgenstein's claim in the early 1930s that Carnap had plagiarized his work. Richard Creath examines the significance of the Carnap-Quine dispute regarding analyticity, the single most important episode in the turn of analytic philosophy from logical empiricism. Alan Richardson's essay details some historical puzzles surrounding the relations of Thomas Kuhn's historical philosophy of science and logical empiricist philosophy of science.

The editors would like to thank many people and institutions without whom this volume would not have been possible. The volume was substantially aided by a workshop sponsored by the International Society for History of Philosophy of Science (HOPOS) and the Vienna Circle Institute and held at the University of Vienna. Early encouragement was offered also by the late Cambridge University Press editor Terence Moore. Research assistantship was ably provided at various stages by University of British Columbia graduate students Alex Harmsen, Michael Waters, Stephen Friesen, and Roger Clarke; funding for these students was provided by the Social Sciences and Humanities Research Council of Canada, the UBC Hampton Research Fund, and the UBC Humanities and Social Sciences Large Grant fund. The contributors were notable for their

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good will and patience throughout this project. Deeply grateful to them, each editor also absolves the other for all faults that remain in the work.

FURTHER READING (IN ENGLISH)

Bibliographies of members of the Vienna Circle, the Berlin Society, and selected associates are given, along with short biographies in Stadler (2001, pp. 610–865).

Extensive bibliographies of Anglo-American analytic philosophy during logical empiricism's heyday are featured in Ayer (1959, pp. 381–447) and in Richard M. Rorty (ed.), 1967. *The Linguistic Turn. Essays in Philosophical Method*. Chicago: University of Chicago Press. Rev. ed. 1992, pp. 375–407.

EARLY MOTIVATING LITERATURE FROM
(AND ABOUT) THE LOGICAL EMPIRICISTS

Hahn, Hans, Otto Neurath, and Rudolf Carnap. 1929. *Wissenschaftliche Weltauffassung. Der Wiener Kreis*. Vienna: Wolf. Trans. by P. Foulkes and M. Neurath as "Scientific World-Conception: The Vienna Circle" in O. Neurath (ed. M. Neurath and R. S. Cohen), *Empiricism and Sociology*. Dordrecht: Reidel, 1973, pp. 299–318.

Feigl, Herbert, and Alfred O. Blumberg. 1931. "Logical Positivism." *Journal of Philosophy* 28: 281–96.

Reichenbach, Hans. 1935. "Logical Empiricism in Germany and the Present State of Its Problems." *Journal of Philosophy* 33: 141–60.

Nagel, Ernest. 1936. "Impressions and Appraisals of Analytic Philosophy in Europe," *Journal of Philosophy* 33. Repr. in Nagel. 1956. *Logic without Metaphysics and Other Essays in the Philosophy of Science*. Glencoe, IL: Free Press, pp. 191–246.

RETROSPECTIVE ACCOUNTS OF THE DEVELOPMENT
AND SIGNIFICANCE OF LOGICAL EMPIRICISM

Frank, Philipp. 1949. "Introduction: Historical Background." In his *Modern Science and Its Philosophy*. Cambridge, MA: Harvard University Press, pp. 1–52.

Jørgensen, Jørgen. 1951. "The Development of Logical Empiricism." *Foundations of the Unity of Science*, volume 2, number 9. Chicago: University of Chicago Press pp. 845–946 of volume 2 of the combined

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- edition: Neurath, Otto, Rudolf Carnap, and Charles Morris (eds.), *Foundations of the Unity of Science*. Chicago: University of Chicago Press, 1970.
- Kraft, Viktor. 1953. *The Vienna Circle*. New York: Philosophical Library (orig. 1950).
- Ayer, Alfred Jules. 1959. "Introduction." In A.J. Ayer (ed.), *Logical Positivism*. New York: Free Press, pp. 3–28.
- Carnap, Rudolf. 1963a. "Intellectual Autobiography." In Paul Arthur Schilpp (ed.), *The Philosophy of Rudolf Carnap*. LaSalle, IL: Open Court, pp. 3–84.
- Feigl, Herbert. 1969. "The Wiener Kreis in America." In D. Fleming and B. Baylin (eds.), *The Intellectual Migration*. Cambridge, MA: Harvard University Press. Cambridge, MA: Harvard University Press Repr. in Feigl, *Inquiries and Provocations* (ed. R. S. Cohen). Dordrecht: Reidel, 1981, pp. 57–93.
- Achinstein, Peter, and Steven F. Barker (eds.). 1969. *The Legacy of Logical Positivism*. Baltimore: Johns Hopkins University Press.
- Suppe, Frederick. 1977. "The Search for a Philosophical Understanding of Theories." In F. Suppe (ed.), *The Structure of Scientific Theories*, 2nd ed. Urbana: University of Illinois Press, pp. 3–241.
- Hanfling, Oswald. 1981. *Logical Positivism*. Oxford: Blackwell.
- Gadol, Eugene T. (ed.). 1982. *Rationality and Science*. Vienna: Springer.
- Menger, Karl. 1994. *Reminiscences of the Vienna Circle and the Mathematical Colloquium* (ed. B. McGuinness and A. Sklar). Dordrecht: Kluwer

RECENT HISTORICAL SCHOLARSHIP

- Haller, Rudolf (ed.). 1982. *Schlick and Neurath Centenary*. Grazer Philosophische Studien 16–17.
- Rescher, Nicholas (ed.). 1985. *The Heritage of Logical Positivism*. Lanham, MD: University Press of America.
- Proust, Joelle. 1989. *Questions of Form. Logic and the Analytic Proposition from Kant to Carnap*. Minneapolis: University of Minnesota Press (orig. 1986).
- Zolo, Danilo. 1989. *Reflexive Epistemology. The Philosophical Legacy of Otto Neurath*. Dordrecht: Kluwer (orig. 1986).
- Coffa, Alberto. 1991. *The Semantic Tradition from Kant to Carnap. To the Vienna Station* (ed. L. Wessels). Cambridge: Cambridge University Press.
- Spohn, Wolfgang (ed.). 1991. *Hans Reichenbach, Rudolf Carnap: A Centenary*. Erkenntnis 35.

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- Uebel, Thomas E. (ed.). 1991. *Rediscovering the Forgotten Vienna Circle. Austrian Studies on Otto Neurath*. Dordrecht: Kluwer.
- Bell, David, and Wilhelm Vossenkuhl (eds.). 1992. *Science and Subjectivity*. Berlin: Akademie Verlag.
- Sarkar, Sahotra (ed.). 1992. *Rudolf Carnap Centenary*. Synthese 93 nos. 1–2.
- Uebel, Thomas E. 1992. *Overcoming Logical Positivism from Within. Neurath in the Vienna Circle's Protocol Sentence Debate*. Amsterdam: Rodopi.
- Oberdan, Thomas. 1993. *Protocols, Truth, Convention*. Amsterdam: Rodopi.
- Salmon, Wesley, and Gereon Wolters (eds.). 1993. *Logic, Language and the Structure of Scientific Theories*. Pittsburgh/Konstanz: University of Pittsburgh Press/Universitätsverlag.
- Stadler, Friedrich (ed.). 1993. *Scientific Philosophy: Origin and Developments*. Dordrecht: Kluwer.
- Cirera, Ramon. 1994. *Carnap and the Vienna Circle. Empiricism and Logical Syntax*. Amsterdam: Rodopi.
- Cartwright, Nancy, Jordi Cat, Lola Fleck, and Thomas E. Uebel. 1996. *Otto Neurath: Philosophy between Science and Politics*. Cambridge: Cambridge University Press.
- Giere, Ronald N., and Alan W. Richardson (eds.). 1996. *Origins of Logical Empiricism*. Minneapolis: University of Minnesota Press.
- Nemeth, Elisabeth, and Friedrich Stadler (eds.). 1996. *Otto Neurath: Encyclopedism and Utopia*. Dordrecht: Kluwer.
- Sarkar, Sahotra (ed.). 1996. *The Legacy of the Vienna Circle: Modern Reappraisals*. New York: Garland.
- Richardson, Alan W. 1998. *Carnap's Construction of the World*. Cambridge: Cambridge University Press.
- Friedman, Michael. 1999. *Reconsidering Logical Positivism*. Cambridge: Cambridge University Press.
- Friedman, Michael. 2000. *A Parting of the Ways: Carnap-Cassirer-Heidegger*. Chicago: Open Court.
- Fetzer, James (ed.). 2000. *Science, Explanation and Rationality. Aspects of the Philosophy of C. G. Hempel*. Oxford: Oxford University Press.
- Stadler, Friedrich. 2001. *The Vienna Circle: Studies in the Origins, Development, and Influence of Logical Empiricism*. Vienna: Springer (orig. 1997).
- Bonk, Thomas (ed.). 2003. *Language, Truth and Knowledge. Contributions to the Philosophy of Rudolf Carnap*. Dordrecht: Kluwer.
- Hardcastle, Gary L., and Alan W. Richardson (eds.). 2003. *Logical Empiricism in North America*. Minneapolis: University of Minnesota Press.

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Parrini, Paolo, Wesley Salmon, and Merrilee Salmon (eds.). 2003. *Logical Empiricism. Historical and Contemporary Perspectives*. Pittsburgh: University of Pittsburgh Press.

Stadler, Friedrich (ed.). 2003. *The Vienna Circle and Logical Empiricism. Re-evaluation and Future Perspectives*. Dordrecht: Kluwer.

Awodey, Steve, and Carsten Klein (eds.). 2004. *Carnap Brought Home. The View from Jena*. Chicago: Open Court.

Reisch, George. 2005. *How the Cold War Transformed Philosophy of Science: To the Icy Slopes of Logic*. Cambridge: Cambridge University Press.

Creath, Richard, and Michael Friedman (eds.). 2007. *Cambridge Companion to Rudolf Carnap*. Cambridge: Cambridge University Press.

For further individual essays, see also journals like *Philosophy of Science*, *British Journal for the Philosophy of Science*, *Studies in the History and Philosophy of Science*, *Perspectives on Science*, *International Studies in the Philosophy of Science*, *Synthese*, *History and Philosophy of Logic*, *Journal of the History of Philosophy*, *British Journal for the History of Philosophy*, *Journal of Philosophy*, *American Philosophical Quarterly*, *Canadian Journal of Philosophy*, *European Journal of Philosophy*, *Philosophy and Phenomenological Review*, *Pacific Philosophical Quarterly*, *Philosophical Topics*, *Grazer Philosophische Studien*, and, last but not least, *Erkenntnis*.