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Preface

Publication of this volume on the origins of logical empiricism to some extent represents an effort on the part of the Minnesota Center for Philosophy of Science to recover its own historical origins. The Center’s founder, Herbert Feigl, was a student of Moritz Schlick, the organizing force behind the Vienna Circle. Feigl was one of the signers of the Circle’s 1929 manifesto “Wissenschaftliche Weltauffassung: Der Wiener Kreis.” He was among the first to publicize the works of Circle members in the United States. In founding the Minnesota Center in 1953 he re-created something of both the spirit and the organization of the Vienna Circle in the American Midwest. And the early volumes of the Minnesota Studies in the Philosophy of Science, which Feigl founded and edited, significantly shaped the field of philosophy of science in the following years. It is thus more than appropriate that this volume should appear now in that same series.

As general editor of the series, and coeditor of this volume, I would particularly like to thank my coeditor, Alan Richardson, for his many contributions to this project. It was largely through his efforts that we were able to bring together the contributors in the first place. And when the time came, it was Alan who read all the final drafts and put together a meaningful introduction. In the end, of course, it is the contributors who deserve our greatest thanks.

The original workshop was supported by the National Science Foundation through its program, Studies in Science, Technology, and Society. Additional funding was provided by the College of Liberal Arts and the Graduate School of the University of Minnesota. Finally, we all thank the one truly indispensable person, the principal secretary of the Center, Steve Lelchuk. He handled all the correspondence, saw to all the physical arrangements for the workshop, collected the manuscripts, and prepared the final bibliography.

Ronald N. Giere
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Introduction:
Origins of Logical Empiricism

This volume grew out of a workshop on the origins of logical empiricism held in October 1993 under the auspices of the Minnesota Center for Philosophy of Science at the University of Minnesota. This workshop was dedicated to the idea that the ongoing reappraisal of logical empiricism is an endeavor worthy of being broadened and deepened. Thus, a number of leading workers in the history of analytic philosophy, philosophy of science, logic, and science were brought together to share their perspectives and concerns. This volume, therefore, presents something of the state of the art of thought on the origins of logical empiricism.

Why is there now a reappraisal of logical empiricism and its role in analytic philosophy and philosophy of science? There are, no doubt, many reasons, but a few stand out as the important ones. First, perhaps more than any other aspect of analytic philosophy, logical empiricism did dominate its field of endeavor — principally philosophy of science — for a very long period. Logical empiricism provided the working framework of most philosophers of science from roughly the 1930s to the 1960s. Moreover, the issues placed at the heart of philosophy of science by the logical empiricists — the analysis or explication of important scientific and metascientific terms (confirmation, explanation, and so on) — continue to play a major role in philosophy of science, even as criteria of analytic adequacy change. It would not be too great an exaggeration to claim that philosophy of science as a discipline distinct from epistemology would not exist without the impetus of logical empiricism. For this reason alone, philosophers of science should have an interest in the project of logical empiricism — regardless of whether they see this project as, in the end, fatally flawed.

More important than the historical role of the project, however, is the continuing role that its demise plays in the motivation of more recent projects in philosophy of science (and interdisciplinary science studies generally). Seemingly everyone has some story to tell about how their
own project has overcome a difficulty inherent to logical empiricism. This is true, for example, of the adherents of the semantic approach to theories, realists, the historiographical schools following Thomas Kuhn, and naturalists.\(^3\) In large measure such projects are defined against aspects of the logical empiricist project; for example, the easiest way to motivate the semantic approach to theories, given its myriad formulations, is via the problems it raises for the syntactic approach. Logical empiricism has been dead since the 1950s or the 1960s depending on whether W. V. O. Quine or Kuhn is taken to have delivered the death blow. Nonetheless, even into the 1990s it is not uncommon to see philosophers of science eagerly engaging in overcoming logical empiricism when explaining their views.\(^4\)

This curious circumstance indicates that, at least in part, the attractiveness of these contemporary projects depends on their having exposed real weaknesses in logical empiricism. Thus, if philosophy of science is seeking its way from the old received view (logical empiricism) to a new received view (naturalism, realism, or what have you), part of the struggle for dominance is through continued concern with logical empiricism. Thus, an account of logical empiricism and its weaknesses is crucial to the contemporary battle for the hearts and minds of philosophers of science. Informed philosophers of science, groping toward the future with unsteady steps, therefore, only stand to gain by studying the history of their discipline, especially the role of logical empiricism in it.

Beyond this, it has become increasingly evident that certain of the tales told about logical empiricism are deficient in important ways. Some of the interpretative stories — for example, those that see logical empiricism as “first philosophy,” as engaged in “foundationalist epistemology,” or as espousing a view of logic as a “normative” discipline and thus distinct from psychology — impose upon logical empiricism philosophical perspectives quite at odds with the logical empiricists’ own favored ways of expressing the project. We should, therefore, be very careful about explaining the project in these terms. Conversely, some of the favored vocabulary of the logical empiricists themselves is frequently ignored. Whereas, for example, the early work of the logical empiricists was frequently dominated by questions of the objectivity of knowledge, they are retrospectively seen as concerned only with justification or verification. These issues are not obviously identical, and any simple slide from one to the other threatens to misrepresent the epistemological project of early logical empiricism. Similarly, the rhetoric of a scientific philosophy that is ubiquitous in the early motivational writings of the logical empiricists (and should be, one might think, a matter
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of interpretative interest to naturalistic epistemologists and philosophers of science) is usually simply forgotten.

This problem is due in part to a rather naive historiography of philosophy. Analytic philosophers are not renowned for their attention to nuance in their reading of historical texts or their breadth of knowledge of the context in which those texts were written. Whether this is a failing of analytic philosophy or analytic philosophers need not concern us here. For the logical empiricists the problem is exacerbated by at least two additional factors. First, as the logical empiricists were analytic philosophers themselves, any qualms an analytic philosopher may feel about imposing analytic frameworks on historical figures are ameliorated — Rudolf Carnap, Moritz Schlick, and the others surely share this framework, it is thought. But this is not so. For, on the one hand, the logical empiricists cannot even be said to share among themselves more than a very general scientific orientation (in their own words, eine wissenschaftliche Weltauffassung) in their philosophy. On the other hand, precisely the history of logical empiricism is as responsible as any other development for the founding of contemporary analytic perspectives. But this is something the logical empiricists were groping toward and surely cannot be simply imputed from the word "go" without thereby rendering the importance of the historical development empty. Moreover, it would be hard to see why contemporary analytic philosophers might feel warranted in dismissing certain central features of logical empiricism as utterly mistaken while feeling this theoretical kinship and sense of interpretative transparency with respect to it. The second problem is that in the course of development and particularly with the movement of logical empiricism out of Europe, the terms in which the project was motivated were significantly altered. The logical empiricists were masters of the misleading expression of their philosophical points of view as a way to let others into the project. As Carnap, Hans Reichenbach, and others moved to the United States, they took up native concerns and philosophical vocabularies. In this way the roots of the project were covered over, motivations obscured, and historical links severed.

For reasons such as these, it was decided in the planning and execution of our workshop and this volume that we should concentrate on logical empiricism in its beginnings — the time of the early writings of the future founders of logical empiricism (around 1910 for Schlick and Otto Neurath and other older members, later in the 1910s and into the early 1920s for the younger members such as Carnap and Reichenbach) to the diaspora in the mid-1930s. The mid-1930s were both politically and philosophically crucial — logical empiricism dispersed
into the world at a point in which early debates were shutting down and mature projects (for example, Carnap’s Wissenschqftslogik and Neurath’s encyclopedic vision of unified science) were being promulgated. By placing logical empiricism firmly into the philosophical, scientific, and cultural contexts of its genesis, we felt we could explore features of the project that are little known but should be genuinely interesting to many contemporary philosophers. Further, as an exercise in the broadening of intellectual perspective, it was felt that if current attitudes are that the only good logical empiricist is a dead one, we could at least show that many of the dead logical empiricists were in fact good ones.

Upon reviewing the contributions to this volume, several features of both logical empiricism and the historical approaches taken to it seem notable. These features are interwoven and support the value of a more broadly construed historical approach to philosophy as well as of the philosophy that is here so scrutinized. These features include:  

- an accounting of the broader context of the philosophy of the logical empiricists. This includes taking into account the broader philosophical background to logical empiricism (including phenomenology, Marxism, and neo-Kantianism), but is not limited to this. Methodological features of the contemporary sciences, cultural features of German and Austrian society, and the political context and motivations of the logical empiricists are examined. We achieve a picture less of an isolated movement in philosophy reaching back to eighteenth-century Britain to rehabilitate old-fashioned empiricism than of a modernist movement in philosophy trying to bring the forward-looking technical and problem-solving features of science into philosophy itself.

- a correlative illumination of distinctions among the logical empiricists through consideration of the very distinct scientific and methodological problem situations in which they matured. For example, the broad differences between Neurath’s naturalism and Carnap’s logical philosophy are fairly well known. A consideration of Neurath’s place in political and social-scientific controversies in Austria and Bavaria and Carnap’s place in conventionalist methodological controversies in physics can lead to a better understanding of both the differences in the philosophical concerns of these philosophers and their mutual feeling of philosophical kinship. Moreover, as we both see and begin to understand the differences as well as the similarities among the logical empiricists, we also see the way that certain major themes
dominated the concerns of individual members of the movement throughout their careers.

- a concern to consider the important terms with which the logical empiricists themselves expressed their points of view, motivated their philosophical perspectives, and connected their work to or severed it from other intellectual movements. Thus, in these pages, one sees meditations on terms not considered very important in contemporary analytic philosophy, for example, *Eindeutigkeit* (univocality or uniqueness), or whose importance has changed due in part to changes of cultural significance, for example, "construction" in the particular sense of an *Aufbau*. Similarly, we see how *within this particular period of intellectual history* logic could have been conceived as a methodological and technical tool that at once severs philosophy's tie to metaphysics and connects it fully to science.

- an emphasis — based on taking the terms of the art of the logical empiricists seriously in this way — that certain debates long thought finished can be reconsidered from a different perspective. For example, if the point of the analytic/synthetic distinction within Carnap's own philosophy has been misunderstood, then we can go back again to his texts to see whether his definitions can serve his purposes. Similarly, a more patient examination of the protocol-sentence debate may at once reveal lessons of value for current debates over the observational basis of science and uncover different perspectives regarding the point of such debates. None of this should be seen as an illicit attempt to revive the dead. The point is rather to maximize philosophical perspectives at a time when philosophy of science can little afford to luxuriate in close-mindedness. Also, this can free philosophers of science of a felt need for refutations of logical empiricism and allow them to rest content with rejections. Refuting a philosophy that makes much of its lack of theses and concentrates rather on goals and methods can be fruitless business — far better simply to offer new goals and methods.

In order to facilitate the reader who is interested in particular issues in the interpretation of logical empiricism, the editors have divided the essays into thematic groups. Inasmuch as no grouping of the essays would be wholly "natural," given that the themes have important interconnections, we suggest the reader view the thematic divisions as a way of highlighting important issues and not as erecting hard and fast interpre-
tative categories. The first group of essays concentrates on aspects of the cultural and philosophical context in which logical empiricism arose in the 1920s and 1930s. The second group focuses on questions of science and scientific methodology in this same period. The third group considers the question of what logic was and what it was for in the work of the logical empiricists. The final group considers the question of experience and the empirical basis of science in the work of the logical empiricists.

1. The Cultural and Philosophical Background

Michael Friedman provides a detailed and nuanced rendering of the Auseinandersetzung between Carnap and Martin Heidegger on the philosophical primacy of logic and metaphysics. He presents the shared background of neo-Kantian epistemology motivating both Carnap and Heidegger in the late 1920s and early 1930s and, indeed, the extent to which Heidegger and Carnap agreed on the nature of their philosophical disagreement. By tracing the main lines of philosophical influence of Carnap and Heidegger to competing projects in neo-Kantianism, respectively the Marburg and the Southwest schools, Friedman exposes how these thinkers can be seen as pushing opposing tendencies in the thought of the neo-Kantians. The major problem for the neo-Kantians was how to continue to find an a priori transcendental grounding for objective knowledge of spatio-temporal objects after the rejection of a separate faculty of sensibility and forms of pure intuition. The question becomes one of whether formal logic can play this role, assigned by Kant to transcendental logic. The Marburg school claims that it can, whereas the Southwest school looks for another basis for the transcendental function. Friedman then presents Carnap as radicalizing the Marburg proposal and Heidegger as doing the same for the Southwest proposal.

Friedman notes the extent to which the fundamental cleavage in twentieth-century philosophy between analytic and Continental philosophy derives from just this dispute over the priority of logic or fundamental philosophical insight in grounding objective knowledge. It is remarkable that what began as a local concern internal to a neo-Kantian project could ramify to such an extent and can, subsequently, be read back into the entire nineteenth century. We have here an example of how detailed examination of the historical record can lead to fundamental changes in our view of the structure of the history of modern philosophy. It can also lead to meditations on the current state of philosophy of science and science studies, although Friedman does not do this. It is clear that a number of the sociologists of science working today
use methods derived from the *geistewissenschaflcher* point of view so thoroughly rejected by the logical empiricists. If sociology of science uses methods derived from ethnomethodology and ethnomethodology derives from hermeneutic and phenomenological philosophical perspectives, then we may well be seeing in current debates the faint afterimage of the very disputes to which Friedman draws our attention.

Peter Galison’s essay draws out another unexpected aspect of early logical empiricism. Galison investigates the cultural significance attached to the word *Aufbau* — a word known to contemporary philosophers mainly through the title of Carnap’s first book, *Der logische Aufbau der Welt* (Carnap 1928a). Galison’s research uncovers a political significance to this term in Germany between the world wars. Within the project of logical empiricism, use of this term, therefore, serves to connect it with other intellectual, artistic, and political movements of the time. In this period the term referred primarily to a left-wing, technocratic, modernist rebuilding of society. The old political order having been overthrown by war and/or revolution, the primary concern was to rebuild or reconstruct society using the rational methods and resources of the sciences. After discussing the early political aims of the logical empiricists, Galison notes how those aims were covered over in their movement to the United States.

Nancy Cartwright and Jordi Cat expose a different type of connection between logical empiricism, politics, and political philosophy. They seek to explain Neurath’s use of the curious notion of conceptual Bal-

lungen (congestions, concentrations) in the protocol-sentence debate by connecting it to a crucial use of similar notions in a much earlier debate, which had renewed currency at the time of the protocol-sentence debate. This earlier argument, which raged from the 1890s to the 1910s, was a methodological debate among Marxists about the status of their conception of history. At stake was the scientific status of materialist history and the extent to which it could accommodate the causal claims of religious, artistic, philosophical, or other aspects of history. Cartwright and Cat argue that the notion of complex, or *complexus*, found in the work of Marxist theoreticians Antonio Labriola and Georgy Plekhanov formed the basis for Neurath’s notion of a *Ballung*. They argue further that this notion was crucial to Neurath’s antimethodism as it emerged in his work in the protocol-sentence debate.

Thomas Uebel explores the overall development of Neurath’s philosophy and the interplay between its focus on social science and its political motivations. He first reconstructs the connections and then provides a local historical context within which Neurath came to this view. In this historical account we see the influence of Ernst Mach
and the French conventionalists, but also other, less well-known influences — Austrian and German social theorists and activists such as Ferdinand Tönnies, Josef Popper-Lynkeus, Otto Bauer, and, ultimately, Karl Marx. We are asked to see Neurath as engaged in a self-consciously renewed Enlightenment project of clarified and rationally controlled science serving social ends. Neurath’s social naturalism appears then as a robust theory of science that differs from now current social alternatives mainly in its optimistic stance and explicit political mission.

These essays individually and as a group indicate how wide-ranging the influences on logical empiricism were. Moreover, we see again and again how engaged the logical empiricists were with their political and intellectual contexts. Their projects were far from being merely technical; indeed, the very technical nature of the projects was to be their source of genuine engagement with the empirical realm and, hence, with the social order. A hopeful modernist reliance on science and technology to resolve tremendous social and economic difficulties is everywhere in evidence. This may seem naive to contemporary thinkers, but perhaps the difference between modernist hope and postmodern irony is ultimately the difference between critical engagement and cynical theorizing.

2. Science, Philosophy, and Scientific Philosophy

A more well-known set of influences on logical empiricism came from the mature sciences, especially physics and mathematics. A major impetus to the reappraisal of logical empiricism came early on from highly technical work in philosophy of physics that led to interpretative concerns about how well logical empiricist accounts of the theory of relativity accorded with the content and methods of that theory. While the consensus seems to be that, in fact, the early conventionalism of Reichenbach, in particular, fails to respect the theory it was designed for, still the depth of the technical engagement with relativity was a watershed for the new logical empiricist philosophy of science. The next two essays in our volume speak to the continuing relevance for the contemporary philosopher of science of the early methodological and conceptual debates surrounding relativistic physics.

Thomas Ryckman provides a rich discussion of early attempts by Hermann Weyl and others to extend the general theory of relativity to a unified theory of all known forces. At issue was whether and how the geometrization of forces could be extended beyond Einstein’s account of gravitation. Ryckman contends that Reichenbach’s metric
conventionalism, especially as systematically carried through in his early *Axiomatik der Relativistischen Raum-Zeit-Lehre* (1924), is directed against Weyl’s “unified theory”—in particular, against Weyl’s foundational criticism of accepting rods and clocks as primitive concepts in general relativistic theories of the space-time metric. Among the issues Ryckman discusses in recounting the history of Weyl’s project and objections to it from Einstein, Wolfgang Pauli, Reichenbach and others is, of course, the question of mathematics and its relation to empirical science. Ryckman finds, ultimately, that remnants of neo-Kantian epistemology color Reichenbach’s vision of the methodological situation here—especially in his understanding of the relation between metrical concepts, nonmetrical concepts, and the behavior of physical objects. Despite Ryckman’s negative assessment of Reichenbach’s metrical views, the depth of engagement between logical empiricism and the furthest reaches of theoretical physics of the time is evident, as is the fruitfulness of continued examination of this engagement.

Don Howard provides an object lesson in the multiple connections among epistemological, scientific, and logical points of view in the period of the development of logical empiricism. His topic is the issue of *Eindeutigkeit* (univocality) as it appears in various contexts in that time period. It is an important notion in the foundations of physics, especially for questions regarding the structure of space-time and Einstein’s search for the system of generally covariant field equations. It also occurs as a term of art in various epistemological writings, such as those of the “relativistic positivist” Joseph Petzoldt. Howard’s main interest is the connection that arose between, on the one hand, the physical and the epistemological questions and, on the other hand, the technical questions of uniqueness up to isomorphism of models of axiom systems in Carnap’s work in the mid- to late 1920s. In Howard’s view, we have here an early, little explored attempt by Carnap to convert a methodological or epistemological concern into a question of logic. In this way, the episode gives a snapshot of the early Carnap’s approach to philosophical problems.

### 3. Logic, Mathematics and Philosophy

Logical empiricism would have been impossible without the advent of the new logic of Gottlob Frege and Bertrand Russell. But no univocal view of formal logic nor its role in philosophy can be found among the logical empiricists. Moreover, of course, the myriad advances in formal logic did not leave the way in which logic was to be used in philoso-
The work of Carnap, in particular, was punctuated by changes in what counted as logic, as well as in technical and philosophical resources brought to bear on logical issues. Moreover, Carnap is famous for apparently failing to achieve a central goal of his logical work — a workable definition of analyticity. Perhaps no questions are more fundamental to the interpretation of logical empiricism than what the philosophical significance of logic was meant to be and whether this significance was fulfilled by the formal logics promulgated.

Warren Goldfarb provides a map of the philosophical landscape of the logical empiricists on just these issues up to Carnap’s *Logical Syntax of Language* (1934; trans. 1937). He shows how confused the early logical empiricists were about the nature and extent of logic throughout the 1920s and into the 1930s. Perhaps it is a measure of how fundamental logic was to their philosophical project that they could not even formulate much of a coherent perspective for talking about it until Carnap took over David Hilbert’s metalogical perspective in the 1930s. Goldfarb contrasts Carnap’s view of what is at stake in foundations of mathematics and the role of logic therein with the robustly realist views of Kurt Gödel. He makes the telling point that an account of the foundations of mathematics will be compelling or not based primarily on what one takes the foundational issues to be. The way Carnap seeks to replace certain philosophical questions with technical ones means that he is under no obligation to answer those philosophical questions.

Thomas Ricketts surveys the development of Carnap’s use of analyticity from *Logical Syntax* to *Introduction to Semantics* (Carnap 1942). He argues that Carnap’s early enthusiastic adoption of Alfred Tarski’s technique for defining truth makes no sharp break with the project of *Logical Syntax*. In *Logical Syntax*, Carnap, on semitechnical grounds, rejects truth as both semantically intractable and otiose for the logic of science. Tarski’s semantic approach showed Carnap how to overcome these difficulties. Ricketts argues that this technical development brings great conceptual difficulty, however; the move to semantics blunts the force of Carnap’s diagnosis of metaphysics as confusion engendered by lack of appreciation for the distinction between the formal and material modes of speech. Richard Creath points to a different difficulty in the relation of analyticity to logical truth in *Logical Syntax*. He notes that Carnap’s definition proceeds from a distinction between logical and descriptive vocabulary to a definition of logical truth to a definition of analyticity. But Creath argues that the definition can lead to there being languages with no logic — no class of logical vocabulary and no logical truths. He argues that this may be a principled failure. While this may seem more bad news for analyticity, Creath proposes a change
in view — that rather than following Carnap in explaining analyticity in terms of logical truth, we should explain logical truth in terms of analyticity. In this way, we can, according to Creath, keep what is epistemologically right about the notion of analyticity without engaging in a hopeless explanatory exercise with respect to it.

4. Experience, Empirical Knowledge, and Empiricism

It seems the most natural thing in the world to say that the logical empiricists were empiricists. Indeed, this claim is largely true. But the precise way in which they were empiricists is hard to capture. This is because in large measure their concern in empirical knowledge was not so much verification and evidence as objectivity, and there they took a generally formalist line that was very hard to square with empiricism of any kind, let alone hard-core verificationism. In this way, too, the logical empiricists were more subtle (and, perhaps, more confused) than rigid common stories about their philosophies allow. Moreover, the shape of the protocol-sentence debate indicates there were deep divisions among the logical empiricists about how to characterize empiricism and what a commitment to empiricism amounts to. The final group of essays explores some aspects of this situation.

Joia Lewis Turner’s essay is a meditation on Schlick’s conceptual difficulties with maintaining his views of the conceptual nature of scientific knowledge while sustaining a connection between knowledge and experience. She notes that Schlick was adamant in denying that pure sensory experience — or, to use his term, “intuition” — was knowledge at all. This raises a completely general question of how to connect the conceptual knowledge of science to such experience. Turner claims that Schlick’s epistemological precursors in this view were others trained in physics rather than philosophy, principally Herman Helmholtz and Max Planck. She then turns her attention to three ways in which Schlick attempted to explicate the difference between sensory intuition and conceptual knowledge and explain their connection. Turner argues that none of these attempts was particularly successful. She ends by noting Schlick’s movement toward thinking that his difficulty was an empirical one — that is, that his analysis would only have to account for a de facto distinction between knowledge of a shared empirical world and private sensation. He would not have to give general philosophical grounds for the possibility of such shared knowledge. In this spirit Turner offers some more up-to-date theorizing from cognitive science that bears on the issue that concerned Schlick.
Thomas Oberdan offers another consideration of Schlick, concentrating on Schlick's point of view in the protocol-sentence debate. Oberdan contends that questions about the role of Konstatierungen (affirmations) in conferring certainty to the basis of empirical knowledge misrepresent the main import of Schlick's mature view. Oberdan argues that, in the end, Konstatierungen were meant mainly to guarantee the connection between language and experience. This was crucial to Schlick in his attempt to give a semantic account of language that countered Carnap's syntacticism. Oberdan claims that the main difference between Carnap and Schlick was over the question of the relation of linguistic conventionalism and empiricism—contact with the empirical world is constitutive of genuine language for Schlick but not so for Carnap. Thus, a semantic empiricism was more central to Schlick's philosophy than to Carnap's.

Finally, my contribution is meant to illuminate the development of Carnap's philosophy of empirical knowledge in the 1930s. It is perhaps too infrequently noted that Carnap argued against the whole project of epistemology during these years and offered logical empiricist philosophy of science as a replacement for epistemology. I argue that he was led to this conclusion by tensions in his own account of epistemology in the Aufbau. Once again the vexed issue of the relation of Carnap's empiricism to his logical work is raised. I claim that until his paper "Testability and Meaning" (Carnap 1936-37), Carnap had no coherent way to be an empiricist; in that paper he gives an account of empiricism as commitment to a restricted range of the logically admissible languages.

Notes

1. Within the Anglo-American context, this reappraisal began in earnest early in the 1980s, particularly in writings of Alberto Coffa and a number of authors whose interest in the history of analytic philosophy was stimulated by Burton Dreben (including Michael Friedman, Warren Goldfarb, Thomas Ricketts, Peter Hylton, Bill Hart, and Richard Creath). This period also saw the opening of the major collections in the Archive for Scientific Philosophy in the Twentieth Century at the University of Pittsburgh, which has greatly facilitated research into the founding figures of logical empiricism. In recent years, the work has increased in pace with the publication of major books by Joelle Proust (1986), Alberto Coffa (1991), Thomas Uebel (1992b), and Thomas Oberdan (1993) as well as important edited volumes (such as Rescher 1985; Uebel, ed., 1991; Bell and Vossenkuhl 1992; Haller and Stadler 1993; Stadler 1993) and dedicated journal issues (Noûs [December 1987]; Synthese [October/November 1992]; Erkenntnis [July 1992]). In part this is due to happenstance, especially the Schlick-Neurath centennial of 1982 and the
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Carnap-Reichenbach-Zilsel centennial of 1991, but it also reflects a genuinely emerging
reawakening of philosophical interest in the writing of the logical empiricists.

2. This dominance of logical empiricism was greatly facilitated by the early volumes
of Minnesota Studies in Philosophy of Science. Thus, it has been a matter of considerable
poignancy for the contributors to this volume that it appears in the very same series.

3. Particularly interesting examples of this can be found in the first chapters of Suppe

4. In this they resemble nothing so much as the early broadcasts of Saturday Night
Live. Just as Chevy Chase continually informed his audience that Franco remained dead,
so too do today’s philosophers of science seek to soothe us with the thought that logical
empiricism remains moribund. Thus, logical empiricism remains alive in philosophical
memory chiefly by the significance of its death. (I take the death of logical empiricism to
be a social fact of analytic philosophy — few, if any, consider themselves to be continuing
the project. It should be obvious that I do not believe that philosophical death in this sense
entails lack of intellectual vitality; neither does the entailment go in the other direction.)

5. Perhaps we should add a third: the logical empiricists in general evinced little
interest in history of philosophy and notably little interest in history of science. Thus,
they played a role in creating the interpretative and hermeneutic shallowness of analytic
philosophers, almost guaranteeing their own very subtle perspectives would be given very
unsuitable treatment. But, one might argue that more has been made of logical empiricism’s
allegedly antihistorical approach than is strictly warranted; Zilsel and Neurath, especially,
had highly developed interests in history of science. Moreover, early work connecting
logical empiricism with the history of modern physics by Frank and Reichenbach was
arguably extremely important for facilitating the reception of logical empiricism in North
America. Such work may misconceive the “role for history” in philosophy of science, but
it does not ignore it.

6. Conjointly these features might be called “the riches of historicism” and indicate
the introduction of somewhat more nuanced historiography into the history of analytic
philosophy.

7. This connects to the strangely little-understood lesson of the history of rejections
of metaphysics that one must pay close attention to what is being rejected and what the
argument for the rejection draws upon. This can lead us finally away from the twin errors
of thinking that all rejections of metaphysics are ultimately identical and ultimately “just
more metaphysics.” Very few antimetaphysicians are such bad philosophers that they can
be legitimately accused of relying in their arguments against metaphysics on the very
metaphysics they are arguing against.

8. Thus, this historical work can serve as part of an attempt to revitalize what we
dearly hope is yet living.

9. Of course, one can refute any particular version of logical empiricism by showing
that its goals are unattainable by its methods. This has been attempted with more than
a small measure of success, but usually is done best by those who have first made a
substantial interpretative effort to uncover these goals and how the methods are meant to
fulfill them. In giving examples of this strategy I would point, for example, to Ricketts
1982 and Friedman 1992a. Some of the essays in this volume also exhibit this strategy —
especially the essays by Ricketts and by Ryckman.

10. The most important example of this work is Friedman 1983b.