Toward a History of Scientific Philosophy

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Throughout the late nineteenth and early twentieth centuries, philosophers of various sorts, including Helmholtz, Avenarius, Husserl, Russell, Carnap, Neurath, and Heidegger, were united in promulgating a new, "scientific" philosophy. This article documents some of the varieties of scientific philosophy and argues that the history of scientific philosophy is crucial to the development of analytic philosophy and the division between analytic and continental philosophy. Scientific philosophy defined itself via criticisms of old-fashioned systematic metaphysics and, in the twentieth century, of Lebensphilosophie. *It offered a modernist vision of philosophy participating in a progressive, problem-solving, piecemeal, and collaborative scientific ethos. The article argues that the rise of scientific philosophy indicates a change of the conception of science as well as philosophy in the late nineteenth century and notes some tensions in the accounts of science offered by scientific philosophers. The article offers some preliminary lessons for the interpretation of logical empiricism and phenomenology as episodes within a larger history of scientific philosophy.*

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> Science is flourishing today and her good conscience is written all over her face, while the level to which all modern philosophy has gradually sunk, this rest of philosophy today, invites mistrust and displeasure. (FRIEDRICH NIETZSCHE)

> The scientific philosopher . . . leaves it to the old-fashioned philosopher to invent philosophical systems, for which there still may be a place assignable in the philosophical museum called the history of philosophy—and goes to work. (HANS REICHENBACH)

When the history of twentieth-century philosophy is written, the most fundamental question will be how there arose a principled distinction between continental and analytic philosophy. This split has become one of the central distinctions in the history of modern western philosophy. Continental and analytic philosophers do not simply disagree about the answers to fundamental philosophical questions. They do not disagree even merely as to which questions deserve to be considered as fundamental. They seem, rather, to disagree as to the nature of the human endeavor that is philosophy and, more particularly, the relation of philosophy to other human intellectual practices. We are, perhaps, still at a point where a rapprochement between the two types of philosophy is largely impossible.[1] The mood is one more favorable to epithet hurling than to mutual understanding. Analytic philosophers see continental philosophy, by and large, as nonsense, frequently characterizing it as "pretentious." Continental philosophers frequently see analytic philosophy as sterile; an abdication of philosophy's appropriate cultural tasks.

It is curious that this division in contemporary philosophy has been exacerbated by perhaps the most fundamental shared feature of the two sides: an impoverished and presentist understanding of the history of philosophy. Philosophers in both camps tell historical stories that serve to reinforce the division through selective and highly interpretative historiography. As someone trained in the analytic tradition, I have both more knowledge of and more detailed objections to the type of stories told about the history of modern philosophy that inform analytic philosophy. Thus, I shall concern myself here largely with

1. Attempts at creating an understanding between continental and analytic philosophers have increased in recent years, although the fruits of these endeavors are more evident in Science Studies, where Foucauldian themes have been taken up by analytically trained philosophers of science such as Ian Hacking (1995), than in general philosophy, notwithstanding the efforts of Richard Rorty (1979), Charles Taylor (1989), and others.

those accounts and with a crucial episode I find missing in them. This episode is the development of a *scientific* philosophy beginning in the mid-nineteenth century.[2]

The History of Modern Philosophy and Analytic Philosophy

Analytic philosophers' understanding of their place in the history of modern philosophy is crucial to their self-conception. The understood place of analytic philosophy within modern philosophy is rarely presented baldly as a list of historical facts but is part of the general ethos of the working world of analytic philosophy. The following is my attempt to approximate this tacit story.[3]

Analytic philosophers point in two directions when asked to identify the crucial elements of their vision of philosophy. First, they point toward eighteenth-century British empiricism. Analytic philosophy has had a generally empiricist cast since its beginnings and is frequently understood by its practitioners to represent the reintroduction of empiricist good sense into philosophy. The empiricist part of the self-conception of analytic philosophers has two principal roots. First, Bertrand Russell (e.g., [1914] 1993, chap. 1) liked to present his (and G. E. Moore's) flight from the idealism of F. H. Bradley around 1900 as a return to empiricism. Russell, of course, came to be seen by analytic philosophers as the hero in the return to British common sense and clear thinking in philosophy. Second, logical empiricism married this Russellian right thinking to the antimetaphysical positivism of Ernst Mach to create the first compelling European version of empiricism.[4]

Second, analytic philosophers point toward Jena, Göttingen, Cambridge, Warsaw, and other centers of work in formal logic in the late nineteenth and early twentieth centuries as the birthplaces of their philosophical practices. Analytic philosophy went beyond traditional

2. This should not be read as an endorsement of the histories told by continental philosophers. Grand historical claims by Edmund Husserl ([1954] 1970), Martin Heidegger (1982), Max Horkheimer ([1937] 1972), and Jürgen Habermas ([1968] 1978), for example, seem to me to be just as misleading and Whiggish as rival analytic histories of philosophy. The beginnings of a diagnosis of why the partisan histories of nineteenth- and twentieth-century philosophy are misleading will be offered at the end of the article.

3. The story is perhaps most explicit in the work of A. J. Ayer (1982), W. V. Quine ([1953] 1961, 1969), and Reichenbach (1951).

4. The main document for the official history of the Vienna Circle is their public call to arms, *Wissenschaftliche Weltauffassung: Der Wiener Kreis* (Neurath et al. [1929] 1973). This document gives a misleading history of the routes by which the members of the Circle arrived at the conception of philosophy therein expounded.

empiricism precisely when its practitioners took up the new technical tools of modern logic developed by Frege, Russell, Hilbert, Tarski, and others. The promissory notes of traditional empiricism—the claim that a language of sensation was sufficient for the expression of all scientific truths, for example—could now be cashed. The new techniques of analysis, definition, and deduction made plausible the view that such projects could now actually be carried out instead of merely gestured at. With the advent of the new logic, philosophy itself finally achieved scientific status; it acquired detailed technical problems to solve and precise and powerful tools for solving them.

Thus, analytic philosophers look forward and backward at once. The epistemological project has been bequeathed by the traditional empiricists. The tools and methods are, however, new, powerful, and utterly general. Analysis of linguistic systems and exposure of presuppositions and contradictions can go forward in any domain of putative judgments.

For analytic philosophers, this positive self-conception is married to a corresponding negative conception of continental philosophy. If analytic philosophy is by and large empiricist in its outlook, it conceives of continental philosophy as being ultimately rationalistic. This is expressed in two general complaints analytic philosophers bring to bear against continental philosophy. First, continental philosophy strives for the type of systematic completeness and hermetic disconnection from other sciences that typified German Idealistic philosophy and connected that philosophy to the metaphysical pretensions of G. W. Leibniz, René Descartes, and traditional rationalists. Moreover, the invocation of intuition by philosophers such as Henri Bergson, as well as Edmund Husserl and other phenomenologists, is seen by analytic philosophers as an attempt to find some oddly ineffable a priori foundation for philosophical knowledge. Neither systematic completeness nor a priori rational foundations for philosophy are worthy philosophical notions for the analytic philosopher.[5]

The technical tools analytic philosophers imported from logic provide another avenue of criticism of continental philosophy. A common trope in analytic philosophers' discussions of continental philosophers

5. This is not to say that a priori rational foundations for certain forms of knowledge, such as mathematics and logic, were ruled out by the founders of analytic philosophy. As I shall note in the text, Russell relied heavily on a primitive logical acquaintance in his account of the a priori status of logic. Sadly, there has been insufficient attention to the sundry roles for intuition and cognate notions such as acquaintance in current scholarship on early twentieth-century philosophy.

is the claim that continental philosophers take surface ambiguities of natural languages to reveal deeply important features of metaphysical reality. Russell's criticisms of Hegel, Bradley, and Bergson (Russell [1914] 1993, chaps. 1, 2) as well as Rudolf Carnap's criticisms of Heidegger (Carnap [1932] 1959) are emblematic of this sort of move. Both Russell and Carnap take their hapless foes to task for presenting metaphysical accounts of linguistic phenomena of natural languages that no decent formal language of analysis would contain. Rather than seeking what Russell and Carnap would consider a better medium for philosophical analysis, Hegel and Heidegger attempt to use linguistic difficulties as evidence for their obscure ontological views. This, according to Russell and Carnap, reveals Hegel's and Heidegger's methodological confusion and indicates, given an adequate language of thought, how metaphysics can, by and large, simply disappear.

As with all fables, there is something right about the general account analytic philosophers give of their historical place in philosophy. Importantly, however, there are many inaccuracies, misunderstandings, concealments, and conceits. Analytic philosophers' attempts to trace the division of analytic and continental philosophy back to a division between Mill and Hegel or, indeed, Hume and Wolff, falsifies much that was most important to many of the founders of both contemporary schools. Analytic philosophers' consideration of themselves and their opposition to continental philosophy is fundamentally misleading both positively and negatively. On the positive side, their self-conception allows them to adopt a stance that conceals the tensions between the new logical methodology and empiricism. These are not at all easily combined.[6] The founders of analytic philosophy—Gottlob Frege, Russell, Ludwig Wittgenstein—were not empiricists with respect to logical and mathematical knowledge. For Frege and Russell, any account of our knowledge of logical and mathematical truths would have to preserve the a priori character of those truths. Frege was largely silent on the matter of the *Erkenntnisquelle* for logic; Russell spoke continually about acquaintance with logical primitives. The young Wittgenstein attempted, on the other hand, to dissolve rather than to solve this problem. Logical truths were meant to show themselves to be a priori because they were empty of content. Logical

6. Much current work on the history of logical empiricism concentrates on the inherent difficulties many of the early logical empiricists encountered in their joint effort to maintain empiricist epistemology and formalist methodology or semantics. See Friedman (1983*a*; 1983*b*, chap. 1), Thomas Oberdan (1993), and Joia Lewis (1991) for discussions of this problem in the work of Moritz Schlick and Rudolf Carnap.

empiricists generally followed Wittgenstein's lead on this matter, although they turned it ultimately into a point directly about language. Logic was, for Carnap, the mathematics of language.[7] There are famous objections to Carnap's views, presented most forcefully by Quine's famous rejection of the analytic/synthetic distinction (Quine [1953] 1961, 1969), which again raised the question of how to combine technical features of the new logic with a commitment to empiricism.

Negatively, analytic philosophers' understanding of their history misleads them into placing many of the founders of continental philosophy—Husserl, Heidegger, Max Scheler, and others—in a metaphysical tradition in which one can also find Hegel and Leibniz. Beyond the sheer difficulty of finding much that all these authors could possibly hold in common philosophically, this rapid assimilation does the more recent philosophers the disservice of neglecting their principled rejections of German Idealism and, especially, Hegelian philosophy. Hegel's systematic metaphysics was, for example, rejected both in its metaphysical details and in its general conception of the nature of philosophical enquiry by Husserl. In the early twentieth century, the philosophers who came to be considered founders of continental philosophy were as vocal in their rejection of old-fashioned systematic metaphysics as were the founders of analytic philosophy.

Therein lies a tale. The most fundamental difficulty with standard accounts of twentieth-century philosophy is the curious lack of attention one finds within them to the preferred self-conceptions of the authors about whom the accounts are spun. Age-old dichotomies such as rationalism and empiricism are trotted out as if all eras of philosophy must repeat what is itself an impoverished understanding of the relations of Plato and Aristotle, Descartes and Locke, or Hegel and Mill. The era between roughly 1850 and 1940, however, was one that increasingly saw explicit rejections of such dichotomies. More particularly, it was an era in which there was a self-conscious search among philosophers of many persuasions for a new method of philosophy. While not devoid of active interest in the history of philosophy—especially in Back to Kant movements and a renewed interest in Greek philosophy—this period was very much forward-looking. Scholars in several quarters held philosophy in ill repute, thinking it had been superseded or at least embarrassed by the progress of the sciences.

7. The development of a conception of logic capable of doing the philosophical work placed on it by the logical empiricists was long and difficult. For valuable recent discussions, see J. Alberto Coffa (1991), Friedman (1988, 1992*a*), Warren Goldfarb (1996), Goldfarb and Ricketts (1992), and Thomas Ricketts (1985, 1986, 1994).

Throughout Europe and Britain, a central theme of this era was the enunciation of a new *scientific philosophy*.[8]

Thanks in large measure to Russell's ([1914] 1981*b*, [1914] 1993) arguments in the early 1900s, analytic philosophers see scientific philosophy as largely the attempt to institute scientific, primarily logical methods in philosophy. A scientific philosophy is also clearly on display in the various works of the logical empiricists and is celebrated in the Vienna Circle's *Wissenschaftliche Weltauffassung* (Neurath et al. [1923] 1973). What has been less well understood by analytic philosophers is the extent to which phenomenology was also hailed by its early twentieth-century adherents as a new, fully scientific philosophy. For example, Husserl presented phenomenology as a "philosophy as rigorous science" in 1911 (Husserl [1911] 1965). Even early Heidegger firmly placed himself within a tradition of scientific philosophy in his 1925 Marburg lectures, subsequently published as *The History of the Concept of Time* (1985). These philosophers were not alone. Scientific philosophy is a term of art for Franz Brentano ([1866] 1929), Richard Avenarius (1877), Alois Riehl ([1883] 1925), and many others from the 1860s to 1930s.[9]

Attention to the various schools of scientific philosophy during this time period can yield a rather different view of how philosophy was

8. The dates 1850 to 1940 are, of course, fairly imprecise. I want to bracket off a period that ends with the Second World War and the diaspora of intellectuals from Europe. I choose 1850 as the beginning date for the period more arbitrarily, but feel comfortable with the choice, because it approximates the date of Hermann von Helmholtz's famous enunciation of one version of scientific philosophy (see Helmholtz 1855). The project was certainly in bloom by the 1870s, when works by Ernst Mach ([1872] 1911), Eugen Dühring (1875), Franz Brentano ([1866] 1929), and Eduard Zeller (1862) appeared. In 1877 scientific philosophy gained a journal, *Die Vierteljahrsschrift für wissenschaftliche Philosophie*, under the editorship of Richard Avenarius and subsequently Mach. A word of caution is in order here. As Don Howard has reminded me forcefully, much of European academic philosophy in this era was dominated by religious interests. Thus, while I am attempting to foreground a movement in nineteenth-century philosophy that is crucial for understanding twentieth-century philosophy, I do not want to be read as claiming that this movement dominated the scene in philosophy at the time.

9. A word of interpretative caution is in order. Many of the strongest voices for scientific philosophy were German speakers. It is clear that the connotations of *"wissenschaftlich"* in German are different from those of "scientific" in English; in particular, the German term is broader and has, therefore, fewer overtones of direct connection with the exact or mathematized natural sciences. I shall continue to use "scientific" as a cognate word in this article, however. It is a large part of my argument that this term had special significance for the scientific philosophers. Moreover, a number of them (Husserl 1965; Avenarius 1877; Dühring 1875), aware of its general status in German, appended the adjective *"streng"*—strict or rigorous—to *wissenschaftlich* when they felt it was needed.

shaped in the era that ended with the Second World War and how the division of analytic and continental philosophy occurred. I want to illustrate this claim through a closer consideration of some of the elements contemporary philosophers considered integral components of scientific philosophy during this period. After presenting a general account of what was taken to be scientific about scientific philosophy, I shall look into two lessons analytic philosophers need to learn about the early history of twentieth-century European philosophy if they truly want to understand the history of scientific philosophy. The first involves resituating the locus of philosophical interest in logical empiricism. I will argue that many traditional empiricist concerns were not the primary concerns of logical empiricists. Rather, as scientific philosophers, logical empiricists had a different, more radical philosophical agenda.[10] The second is the retrenchment of phenomenology at the hands of Heidegger, a move that developed from his evolving understanding of the scientific nature of philosophy and his historical concerns. Here we shall see a somewhat different account of how the analytic and continental divide took shape.

The Scope and Rhetoric of Scientific Philosophy

The calls for developing a scientific philosophy came from many sides in the late nineteenth and early twentieth centuries. Among those issuing this call we find positivists, neo-Kantians, phenomenologists, logicists, and logical empiricists. These groups diverged in their positive projects within scientific philosophy, but they agreed in a striking manner about both the need for and the general methodology of scientific philosophy.[11]

The notion of a scientific philosophy would have seemed bewilder-

10. The radical nature of the logical empiricists' philosophical agenda has recently been rediscovered by contemporary commentators. My discussion owes much to Uebel (1992, 1996), Cartwright et al. (1996), Galison (1990, 1996), and Friedman (1996).

11. This period of philosophy has been the subject of some important interpretative work in recent years. Principal among the book-length surveys of various themes from this period are Coffa (1991), Dummett (1993), Köhnke (1991), Kusch (1995), and Smith (1994). "Scientific philosophy" is not much of a term of art in these works, however. Smith (1994, pp. 7–9) motivates his book through a discussion of scientific philosophy but unduly narrows the scope of his discussion to the Vienna Circle and its Austrian predecessors. His negative view of German philosophers' contributions to scientific philosophy is unwarranted. If scientific philosophy occurred only at "the fringes" (Smith 1994, p. 9, n. 3) of German philosophy, then German philosophy had many important fringes indeed. The most sustained recent discussion of science as a theme in German philosophy in this time period is to be found in Herbert Schnädelbach (1984, chap. 3).

ingly redundant for early modern philosophers. For these thinkers, philosophy was the sum total of (actual and possible) systematic knowledge. Science was simply another term for this knowledge from principles or from causes. Thus, Descartes's *Principles of Philosophy* ([1644] 1983) was the entirety of his systematic doctrine on any and all topics. Similarly, when Hobbes gave his diagram of the several subjects of science in his *Leviathan*, the highest genus is simply marked "*Science*, that is knowledge of consequences; which is called also *philosophy*" ([1651] 1966, pp. 72–73). Clearly, therefore, the notion of science and its relations to philosophy that informed Husserl, Russell, and the others is not the one that informed Descartes or Hobbes. The twentieth-century project is no longer to sum up all of knowledge under highest principles and then to denominate this as philosophy.

A look at the concerns and motivations of scientific philosophers reveals a project that has more in common with Kant's critical project ([1781/1787] 1965, [1783] 1985). Kant famously begins his critical project in philosophy with doubt. His doubt is, however, not Descartes's global doubt about knowledge in general. Rather, Kant is concerned with a gnawing doubt about one of the putative sciences, metaphysics. Kant expressed his dual concern that metaphysics had not achieved the progress and fruition of the natural sciences and, at least in part, contradicted those sciences—and indeed itself. He warned that the contradictory nature of rationalist metaphysics and in its fitful development represented the very antithesis of a branch of knowledge on the firm path of a science. Thus, he raised his fundamental critical question, "Is metaphysics as a science possible?" (Kant [1783] 1985, p. 24). In attempting to answer his central question, he sought to identify the conditions that make objective knowledge possible—conditions necessary for making a genuine science of objects possible—by considering the nature of just those sciences whose progress had so embarrassed metaphysics—logic, geometry, mathematics, and physics. By critically examining the possibility of scientific knowledge in general, Kant could answer his question about metaphysics. For Kant, transcendental philosophy exposed what it takes to be a science and provided the tools to remake metaphysics in the form of a science (Kant [1783] 1985, pp. 105–10).

This suspicion about metaphysics, frequently generalized to philosophy as a whole, is everywhere in evidence among the scientific philosophers. It was occasioned for them in the first instance by two factors. First, they held a continuing suspicion that the grand systems of German Idealism and related projects were essentially wrongheaded. Those who would be scientific philosophers saw the great systems of

philosophy of the nineteenth century as monuments of philosophical isolation and barrenness. Hegelian metaphysics illuminated nothing about science and was constructed via a procedure that was the antithesis of scientific procedures. It was a grand synoptic view of the world founded, built, and polished by one thinker in splendid isolation. Scientific philosophers' general mood was permeated by suspicion of the results and methods of such philosophizing. Unlike Kant, however, the typical scientific philosopher was less exercised by the attempt to rescue some portion of an independently conceived metaphysics than he was to remake philosophy itself in the image of science.[12]

Second, throughout the nineteenth century there were increasingly active attempts to distinguish philosophers from scientists. In the writings of Arthur Schopenhauer ([1819] 1966), Friedrich Nietzsche ([1885] 1954), Søren Kierkegaard ([1846] 1992), and others, other ideals of philosophical life were presented. The models were largely artistic and religious. For the scientific philosophers, such ideals were contrary to the spirit of the philosophical enterprise in a way akin to Hegel's. Such views were perceived by the nascent scientific philosophers to be self-consciously subjectivist in their orientation, making philosophy a matter of subjective standpoint, individual genius, or personal faith.[13]

Concerns over these aspects of nineteenth-century philosophy can be seen in all of the branches of scientific philosophy. For example, Richard Avenarius's version of positivism begins with criticisms of such views. Avenarius was the first editor of the *Vierteljahrsschrift für wissenschaftliche Philosophie* (the Quarterly journal for scientific philosophy).[14] In his inaugural editorial in 1877, he begins:

12. Thus, the scientific philosophers, even the neo-Kantians, can be distinguished in their attitudes from Kant. They are less concerned with the scientific status of some portion of traditional metaphysics than with the scientific status of something like transcendental philosophy itself. I am indebted here to Eric Palmer, who rightly worried that without a word of caution here I might be read as turning all scientific philosophy into Kantianism, whereas the actual development was more in the other direction.

13. Eric Palmer and Don Howard have both raised serious worries about the readings of Nietzsche and Schopenhauer that place them blandly among such antiscientific philosophers. This is a large topic, well beyond the scope of this article. Here I am content to express the concerns of the scientific philosophers in more or less their own words. Nietzsche is the more central figure in the story. Suffice it to say that Nietzsche was not infrequently taken to be an antiscientific philosopher by both scientific (e.g., Russell [1914] 1993) and antiscientific philosophers (e.g., Scheler [1915] 1955). This is not without warrant, given Nietzsche's vision of a new philosophical ideal—an *artistic* Socrates.

14. Practitioners of a number of other disciplines in German-speaking lands thought of themselves as becoming *"wissenschaftlich"* in the nineteenth century. There arose, therefore, a number of journals proudly bearing the word in their titles. For an interest-

> Among the causes that make difficult the development of philosophy is one that is less noticed but not less powerful, that is, the mistrust with which philosophy is met by those in the so-called "strictly scientific" circles, if not in general any more, at least more generally than it appears from the outside. This mistrust characterizes the final form of the strong movement of reaction that caused a sudden end to the dominion of speculative philosophy. . . . That science lost its scientific credit, because the mocking doubt arose: Philosophy is indeed possible—only not as that which it, according to its essence, claimed, not as *science*. (P. 1)[15]

For Avenarius, this raises the quintessential question for the philosophy of his age: "The legitimate sense of this question can not be: is philosophy possible as, say, poetry or religious absorption or something else similar; for philosophy wants to be in the first instance *science*—nothing more and nothing else. So, our question has for us only the simple sense: 'How is philosophy as a science possible?' Or, more simply expressed: 'How is scientific philosophy possible?'" (1887, p. 2).

This question could be solved by Avenarius only to the extent that he could find a place for philosophy in the system of the empirical sciences. A scientific philosophy must have a subject matter, and for Avenarius this subject matter must, given his positivism, be an empirically given subject matter. In the end, he was led to view philosophy as a general science of the sciences. It takes as its subject matter the given special sciences and the human agent itself in its role as scientist. Philosophical work is the work involved in the unification of the concepts of historically given scientific disciplines. Unity was a presupposition of the very notion of science for Avenarius and philosophy was precisely the science of the highest unity of the sciences. Philosophy is a methodology of the sciences, concluded Avenarius, without which no special science could be fully scientific because it could not exist in full systematic connection with the other sciences. It was the historically given nature of the special sciences and the psychological understanding of methodology that allowed such a methodology of the sciences to be itself an empirical science for Avenarius.

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ing example, see Nyhart (1991), where attention is paid to zoologists' own scientific/systematic struggle that took place somewhat earlier in the nineteenth century. The place of the *Vierteljahrsschrift* within this literary history of "the scientific" is a tale for another day.

15. Whenever there is a standardly available translation of German works, I have used that translation, notwithstanding certain misgivings about some of them. All other translations are my own.

Similar concerns led to similar conclusions among the neo-Kantians. A scientific philosophy for the neo-Kantians also became a general methodology of the sciences. The neo-Kantians were less concerned that this science have a straightforwardly empirical subject matter than was Avenarius because they were not spooked by the possibility of a priori knowledge. Thus, for the neo-Kantians, the preferred understanding of scientific philosophy was a methodology or logic of science, a science of the form of scientific knowledge. Their perceived enemies and, thus, their resulting view of philosophy, were quite similar in many respects to the empirio-criticism of Avenarius and Mach, however.

An early expression of this understanding of the need for and goals of scientific philosophy can be found in the work of Alois Riehl. In 1883, Riehl became a member of the philosophy faculty at Freiburg. In his inaugural address, he presented his view of the present and future of philosophy under the title "Über wissenschaftliche und nichtwissenschaftliche Philosophie" (On scientific and nonscientific philosophy; [1883] 1925). He presented his views as standing in sharp disagreement with systematic and subjectivist philosophy. Philosophy was not a personal testament of systematic insight nor was it an attempt to express an attitude toward, or comprehensive picture of, the world, according to Riehl. These ideas turn philosophy into a matter of "personal experiences," "innate moods," or "private matters" (Riehl [1883] 1925, pp. 232–33). These things could be the subject matter of a science—a branch of human psychology—but, writes Riehl simply, "Philosophy as system and as the theory of *Weltanschauungen* is . . . no science" (p. 233).

As noted above, Riehl sought an object to be the subject matter of scientific philosophy and, via a consideration of the history of philosophy culminating with Kant, found it in knowledge itself: "Knowledge, science itself, forms the object of philosophy" ([1883] 1925, p. 245) The address ends with these resounding tones for the benefit of his new colleagues: "I will endeavor to represent in teaching and writing this view, which we have recognized and delimited as the proper scientific task of philosophy—the *science of knowledge*" (p. 253). Riehl later expressed his views on the nature of scientific philosophy in a way that more carefully distinguishes it from psychologistic and positivist expression of the methodology of science. For example, Riehl writes in 1907:

> The form of science is itself the object of a science, logic, which is one and the same no matter how different the objects of knowl-

> edge are in their character. . . . Logic is an objective science just as is mathematics, which is closely related to it. Misleading, ambiguous explanations of logic as are in fashion, such as science of reason, theory of the laws of thought, etc., cannot change its true nature, and instead of adhering to these words, one should adhere to the practice of the logician. This is everywhere and universally the same: the objective analysis of the form of a scientific connection, not the subjective analysis of the process of thought. (P. 74)

The ideas that logic had its appropriate subject matter in the form of scientific theories and that scientific philosophy therefore consisted of the logic of the objective knowledge found in the sciences gave shape to neo-Kantianism in the early twentieth century. These conceptions were shared by many philosophers, including Bruno Bauch (1911), Paul Natorp (1910), and Ernst Cassirer ([1910] 1953). This was a scientific philosophy that found its methods internal to the conceptual apparatus of the sciences themselves. Each science has its concepts and its conceptual connections; philosophy was understood to be the general logical treatment of these connections. According to this form of scientific philosophy, one does not found scientific knowledge on external, purely philosophical grounds, but, rather, one explains the nature of scientific knowledge through a consideration of the logical structure of the sciences themselves. Logic was taken to be methodologically a priori; without a logical structure, objective knowledge would be impossible.[16]

Scientific Philosophy in the Twentieth Century: Russell and Husserl

Perhaps the two most important voices for scientific philosophy early in the twentieth century were those of Russell and Husserl. Early in the second decade of this century, they each produced a large amount of material designed to motivate and explain their new ways of doing philosophy. While they ended up endorsing very different visions of the positive project of scientific philosophy, their complaints against prior philosophy and their calls for a scientific replacement for it were remarkably similar. Husserl's *Logos* essay, *"Philosophie als strenge Wissenschaft"* ([1911] 1965), and Russell's essay, "On Scientific Method in Philosophy" ([1914] 1981*b*), are striking documents that reveal scientifically inclined minds uneasy with the state of philosophy.

16. There are other groups that could be mentioned here. A full history of scientific philosophy would surely need to pay close attention to the French conventionalists, French neo-Kantians, and many others. A discussion of these groups would go beyond the scope of this article and, alas, the current competence of the author.

Husserl and Russell had common enemies in philosophy. Their enemy is by now a familiar one—the systematizing philosopher who seeks to provide a complete philosophical account of the world at one go. Russell upbraided this enemy frequently by repeatedly drawing a distinction between the synthetic nature of this discredited vision of philosophy and his own proffered view of philosophy as analytic: "The essence of philosophy as thus conceived is analysis, not synthesis. To build up systems of the world, like Heine's German professor who knit together fragments of life and made an intelligible system out of them, is not, I believe, any more feasible than the discovery of the philosopher's stone. What is feasible is the understanding of general forms and the division of traditional problems into a number of separate and less baffling questions. 'Divide and conquer' is the maxim of success here as elsewhere" (Russell [1914] 1981*b*, p. 86). Husserl was just as withering in his criticism of systematic philosophy. After discussing the lack of scientific credentials among philosophical systems hitherto, he raised the following rhetorical questions:

> For with this blunt emphasis on the unscientific character (*Unwissenschaftlichkeit*) of all prior philosophy, the question immediately arises whether philosophy is to continue envisioning the goal of being a rigorous science, whether it can or must want to be so. What is this new revolution supposed to mean to us? Some sort of departure from the idea of a rigorous science? And what meaning should be given to the "system" for which we yearn, which is supposed to gleam as an ideal before us in the lowlands where we are doing our investigative work? A philosophical "system" in the traditional sense, like a Minerva springing forth complete and full-panoplied from the head of some creative genius, only in later times to be kept along with other such Minervas in a silent museum of history? Or is it to be a philosophical system of doctrine that, after the gigantic preparatory work of generations really begins from the ground up with a foundation free of doubt and rises up like any skillful construction, wherein stone is set upon stone, each as solid as the other, in accord with directive insights? ([1911] 1965, p. 65)

It is clear from such passages as these that Russell and Husserl concluded that "systems" provide the wrong model for genuine scientific work. Systems present philosophy as the product of a lone creative genius who, through sheer insight, could penetrate into depths of the greatest intellectual problems presented to the human race and solve them. For Husserl and Russell this was clearly not how science gets

done. Science worked on big problems by dividing them into small problems. The many small problems were attacked by a cadre of workers who could rely on the findings of others and apply them in new areas. The unscientific nature of systematic philosophy was exhibited by its lack of progress and this lack could be diagnosed in terms of this mistaken vision of knowledge. In Russell's work, this line of reasoning was explicit: "Philosophy, unlike the sciences, has hitherto been unprogressive, because each original philosopher has had to begin to work again from the beginning, without being able to accept anything definite from the work of his predecessors. A scientific philosophy such as I wish to recommend will be piecemeal and tentative like the other sciences" ([1914] 1981*b*, p. 85). In Husserl also we can see an intrinsic contrast between the subjective nature of philosophical systematizing hitherto and genuine science. Husserl's vision of science differed from traditional philosophy in that "Science . . . is impersonal. Its collaborator requires not wisdom but theoretical talent. What he contributes increases a treasure of eternal validities that must prove a blessing to humanity" ([1911] 1965, p. 149).

Moreover, for both Husserl and Russell, philosophy became a distinct science through the acquisition of its own distinct subject matter and distinctive techniques for dealing with and solving problems related to this subject matter. What the subject matter and attendant techniques were was an area of great divergence, but for each of them, philosophy was to become a contentful, technical science. As hinted at in the quotations above, for Russell, logic was the essence of scientific philosophy:

> Philosophy, if what has been said is correct, becomes indistinguishable from logic as that word has now come to be used. . . . On the one hand it is concerned with those wholly general statements which can be made concerning everything without mentioning this or that thing, predicate or relation. . . . On the other hand, it is concerned with the analysis and enumeration of logical *forms*, i.e. with the kinds of propositions that may occur, with the various types of facts, and with the constituents of facts. In this way logic provides an inventory of possibilities, a repertory of abstractly tenable hypotheses. ([1914] 1981*b*, pp. 84–85)

Consistent with this view, Russell devoted many pages of the essays he wrote in this period to delineating the logical forms of the relations of propositional attitude. The idea was to have a precise analysis of the logical structure of the propositions that are expressed in sentences such as "Bertrand believes that Edmund is the author of *Logical Investi-*

gations." Such sentences have famous logical peculiarities, such as failure of substitution of co-referring terms, and Russell's multiple relation analysis stands as an early attempt to understand their logical structure. Other topics on Russell's agenda were analyses of causal judgments, a general theory of definite descriptions, and the like.[17] Russell desired to present problems for the consideration of philosophers and to proffer techniques for handling them. After surveying the practices of modern analytic philosophers—especially the practices of philosophical logicians and formal philosophers of language—we can only conclude that Russell's hope of founding a philosophy that operated like a technical science has been at least partially realized.

Husserl's scientific philosophy was not formal logic. Rather it was a new science of pure consciousness called "phenomenology":

> With this we meet a science of whose extraordinary extent our contemporaries have as yet no concept; a science, it is true, of consciousness that is still not psychology; a phenomenology of consciousness as opposed to a natural science about consciousness. But since there is no question here of an accidental equivocation, it is to be expected beforehand that phenomenology and psychology must stand in close relationship to each other, since both are concerned with consciousness, even though in a different way, according to a different "orientation." This we may express by saying that psychology is concerned with "empirical consciousness," with consciousness from the empirical point of view, as an empirical being in the ensemble of nature, whereas phenomenology is concerned with "pure" consciousness, i.e., consciousness from the phenomenological point of view. ([1911] 1965, p. 91)

Phenomenology also has a distinct subject matter, pure consciousness, and associated techniques for acquiring knowledge of that consciousness. Indeed, Husserl's very distinction between empirical and pure consciousness depends utterly on the coherence of the philosophical technique of phenomenological *epoche*. Only through this technique of bracketing the connection of mental acts and contents to the material world can the object of phenomenological consideration be found at all. Once this is achieved, the detailed business of the phenomenological description of the various acts of the mind can begin.[18]

17. On these topics, see, among other works, Russell ([1905] 1973, [1911] 1981*a*, [1913] 1983, [1914] 1981*b*, [1914] 1981*c*).

18. As one of the anonymous referees pointed out, this is a very sketchy and incomplete account of phenomenology. Neither the details of Husserl's phenomenological per-

The Science of Scientific Philosophy and the Science of Hegel

Whatever one may think about the merits of Russell's and Husserl's criticisms of Hegel and other systematic philosophers at the level of methodology, it is clear that a good deal of the criticisms would simply pass Hegel by. That is to say, Hegel would find himself in agreement with the scientific philosophers that if philosophy was to be anything, it must be a science. The disagreement between Hegel and the scientific philosophers lies in their implicit understandings of what it took to be a science. The objections to systematic philosophy from the second half of the nineteenth century onward were remarkable in the unanimity of their modernist sensibilities about science. The scientific philosophers saw science as an intrinsically collaborative project, built by workers relying on the methods and results of their fellows, striving to produce clear, intersubjectively understood and accepted results. The other side of this collaborative project was made explicit by Russell above. Scientific philosophers were to be specialists in a narrow range of philosophical problems and concerns.

After the First World War, especially in Germany and Austria, these modernist sensibilities came increasingly to the fore in an explicitly political way. Scientific philosophy then stood opposed to a new enemy, a *Lebensphilosophie* associated with Oswald Spengler ([1918] 1939) and Max Scheler ([1915] 1955) that sought to remove the preeminence of concerns with reason or rationality in philosophy.[19] Especially in the work of the Vienna Circle and Reichenbach's Berlin group, scientific philosophy became an explicitly socialist, technocratic project to the production of rational, expert knowledge to be used in the service of society's needs.[20] The principal architect of this view was Otto Neurath, for whom the unity of science was an expression of the collective nature of scientific knowledge and a necessary element in the rational shaping social life. As the Vienna Circle wrote in its public debut: "The scientific world conception is characterized not so much by theses of its own, but rather by its basic attitude, its points of view and direction

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spective nor its connection to formal, material, and transcendental logic in his work nor its connection to general ontology and the analytic of Dasein in Heidegger's work can be given here.

19. At least one contemporary historian of philosophy, Richard Müller-Freienfels (1923), took the dispute between scientific philosophy and philosophy of life to be the main theme of philosophy in the early twentieth century. For recent discussions of the place of *Lebensphilosophie* in the development of twentieth-century philosophy, see Schnädelbach (1984, chap. 5) and Kusch (1995, chap. 8).

20. On this aspect of the philosophy of logical empiricism, see Uebel (1992, 1996) and, especially, Galison (1990, 1996).

of research. The goal ahead is *unified science*. . . . From this aim follows the emphasis on *collective efforts*, and also the emphasis on what can be grasped intersubjectively; from this springs the search for a neutral system of formulae, for a symbolism free from the slag of historical languages; and also the search for a total system of concepts. Neatness and clarity are striven for, and dark distances and unfathomable depths rejected" (Neurath et al., [1929] 1973, pp. 305–6). This sensibility is also found in the writings of other members of the Circle. For example, the preface to Carnap's *Der logische Aufbau der Welt* ([1928] 1967) contains a rejection of poetic views of philosophical work and offers this in its place: "We, too, have 'emotional needs' in our philosophy, but they are filled by clarity of concepts, precision of methods, responsible theses, achievement through cooperation in which each individual plays his part" (p. xvii). Of course, it is not only logical empiricists who subscribe to this vision of scientific philosophy and its relation to the intellectual and economic crises in Europe after the war. This is one of Husserl's major themes throughout his mature writings. Thus, for example, we find him writing:

> The skeptical pessimism and the shamelessness of the political sophistry which so ominously dominates our age, and which only uses socioethical argumentation as a disguise for the egotistical goals of a degenerate nationalism, would not be possible at all if the community's concepts, which have arisen naturally, were not, despite their naturalness afflicted with dark and unclear horizons and with intricate and hidden implications whose clarification lies complete beyond the powers of untrained thinking. Only rigorous science can provide us with reliable methods and sound results; it alone can thereby provide the preparatory theoretical work on which a rational reform of culture depends. ([1923] 1981, p. 327)

Within this modernist sensibility, that which is an expression of individual genius is considered hopelessly subjective and, consequently, the antithesis of scientific knowledge. By standing opposed to reliance on genius in philosophy, scientific philosophy participated in a more general nineteenth-century movement toward what Lorraine Daston has termed "the ideal of aperspectival objectivity": "Aperspectival objectivity was the ethos of the interchangeable and therefore featureless observer—unmarked by nationality, by sensory dullness or acuity, by training or tradition, by quirky apparatus, by colourful writing style, or by any other idiosyncrasy that might interfere with the communication, comparison and accumulation of results. . . . Subjectivity became

synonymous with the individual and solitude; objectivity, with the collective and conviviality" (1992, p. 609). This ethos can be found throughout the writings of Husserl, Russell, Carnap, Neurath, and other scientific philosophers.

The work of Daston, Steven Shapin (1991, 1994), Peter Galison (Daston and Galison 1992), Theodore Porter (1992, 1995), and others indicates that this notion of objectivity in science was neither the only possible one nor, more importantly, the only one to be found in the history of science. In fact, aperspectival objectivity stands in contrast to a more directly ontological understanding of objectivity as capturing reality. Metaphysical objectivity is a matter of matching theories to an independently structured world. In this sense, then, the rejection of realist metaphysics by logical empiricists was a triumph of aperspectival objectivity over metaphysical objectivity. Carnap stresses this contrast himself in the final sections of the *Aufbau:* "Realism, as an explicit thesis, . . . is not permissible; it must be corrected so as to become 'objectivism': the regular connections . . . are objective and are independent of the will of the individual" ([1928] 1967, p. 287).

More crucial to the history of scientific philosophy, Daston points to a different ethos found in eighteenth-century science. In the eighteenth century, according to Daston, scientific information flowed through a small number of narrow channels, usually personal friendships. Within such networks, the quality of the information was tied to the presumed quality of the person who was reporting the finding. As Daston writes:

> Far from embracing the ideal of the interchangeable observer, seventeenth and eighteenth-century scientists carefully weighted observation reports by the skill and integrity of the observer. . . . Reports of scientific findings, particularly in the empirical sciences but sometimes even in mathematics, were emphatically cast in the first-person singular, for the skill and character (and occasionally social status) of the reporter were often as crucial to judging its worth as its contents. . . . Impersonal communication and a refined division of labour were the exception rather than the rule, and the ideal of the interchangeable observer would have exercised little attraction for observers proud of their hard-won qualifications and alert to minute differences in the qualifications of others. (1992, p. 610)

This is a more aristocratic, more *gemeinschaftlich* notion of science and the scientific community than is the one that animates the writings of the scientific philosophers. In essence, this conception of scientific

knowledge and its production asks us to consider the possibility that science is not for everyone; at the very least, the scientist requires training and skill beyond the ken of the ordinary person. Perhaps she also needs insight beyond that which is available to the "man in the street." Hegel's account of science and, therefore, his conception of the ways in which philosophy can and should be scientific fit more naturally into this conception of science. Hegel writes, for example: "Philosophy by its very nature is esoteric; for it is neither made for the masses nor is it susceptible of being cooked up for them. It is philosophy only because it goes exactly contrary to the understanding and thus even more so to 'sound common sense,' the so-called healthy human understanding, which actually means the local and temporary vision of some limited generation of human beings" (Hegel [1802] 1958, p. 185; quoted in Heidegger 1982, p. 14). As Daston's discussion indicates, the endorsement of this view in no way need stand in the way of endorsing a conception of philosophy as science. Indeed, for Hegel, philosophy was the systematic study of the phenomena of reason, a realm of ultimate truth beyond the ken of the average person, and yet the most scientific pursuit of all. When Hegel gave his books titles such as *Science of Logic* ([1812–16] 1929), this need in no way be construed as subterfuge or as indicative of an idiosyncratic and indefensible notion of the nature of science. Rather, Hegel's science was science as conceived in his times, a science separated off from what was merely local or common and knowable only to the rare intellect.[21]

This is the first fruit of a historical study of scientific philosophy. It exposes the adoption of a new sensibility about science by philosophers deeply committed to assuring the problematic status of philosophy as science. Instead of a harking back to the foundationalism of Descartes or Hume, the scientific philosophy of Husserl and Russell is in the first instance the expression of a new conception of philosophy predicated on a new conception of science. On this account it is not at all incomprehensible why later scientific philosophers such as Neurath were chary about using the term *philosophy* at all. For, according to their own self-conception, scientific philosophers of the logical empiricist stripe were not attempting one last shot at a traditional project of foundational empiricism or even "first philosophy." They were, rather, reorienting the notion of philosophy itself based on a new conception of any legitimate knowledge-producing enterprise.

21. Hegel makes the esoteric nature of metaphysics his first line of defense against Kant's criticisms in the introduction to the *Science of Logic* (1929). Kant's commonsense (!) attacks on metaphysics were bound to miss the true nature of scientific metaphysics, according to Hegel.

Logical Empiricism as Modernist Philosophy of Science

There is considerable irony in the terms that constitute scientific philosophy's call to arms in the work of Russell and Husserl. As we have noted, one of the chief themes of the call to a scientific philosophy was the intrinsically social character of science—science was conceptualized as a collaborative discipline in which each coworker provided a small bit of the whole by relying on the similarly piecemeal results of his fellows. Solitary geniuses need not apply. This appeal to collaboration and communitywide communication is, however, not a theme within most of the methodologies of scientific knowledge promulgated by the early twentieth-century scientific philosophers.

Russell's epistemology, for example, was robustly and necessarily individualistic—the solitary thinker had to construct the world from his own private sense data.[22] Indeed, Russell's scientific philosophy has one great principle: "The supreme maxim of scientific philosophizing is this: Wherever possible, logical constructions are to be substituted for inferred entities" (Russell [1914] 1981c, p. 115). The problem with inferred entities is that, as inferred and not constructed, they are not analyzable into terms with which we have acquaintance. As such, any judgment containing them cannot, strictly speaking, be assigned a meaning. Russell's scientific philosophy, therefore, was motivated by a sensibility about scientific knowledge that disappears inside the account of knowledge offered by that philosophy.

The same irony would appear to affect the writings of the logical empiricists, especially Carnap's work in epistemology in the 1920s. Carnap's *Aufbau* took Russell's maxim (cited above) as its motto and appeared to work firmly within the same epistemological tradition.[23] This interpretation, however, is misleading—an artifact more of how the *Aufbau* has been read than of what it says. Carnap's project differed from Russell's along many lines. Most important for understanding its place in scientific philosophy, I think, is acknowledging Carnap's very different motivation for developing a constructive epistemology.

Carnap, unlike Russell, took objectivity to be the quintessential concept of epistemology.[24] Thus, Carnap's problem was not how to show how all knowledge could be reduced to individual sensation but how, given that knowledge started with sensation, it could become objec-

22. This is the External World Project as enunciated in Russell (1993).

23. This was the standard reading of the *Aufbau* for decades. It most firmly is associated with Quine (1961, 1969) and Nelson Goodman (1963).

24. This insight has been stressed by Friedman (1987, 1992*b*). It also has been a main theme in recent interpretative work on early Carnap by Alan Richardson (1990, 1992, 1997) and Werner Sauer (1985, 1993).

tive—how agreement and disagreement could be genuinely possible. Carnap's central problem, much more than Russell's, grew out of an understanding of science as a public, communicative endeavor. Similarly, Carnap's solution to his problem—that logical form provides the conditions of objective judgment—connected his work to that of the neo-Kantians and, ultimately, of Kant. Thus, his project showed a broader range of influences within scientific philosophy than did Russell's.

Beyond this, the centrality of conventionalism within logical empiricism indicates that its practitioners held a greater concern with social aspects of knowledge than did Russellian or traditional empiricists. Conventionalism, for the logical empiricists generally, was all about achieving agreement on meanings, measures, or standards, for the purpose of reaching general agreement in judgment. One of Carnap's longest discussions of conventions appears in the context of an early exposition of how physicists make decisions that allow them to develop standard and transportable temperature scales.[25] To be sure, the negotiations that led to their particular decisions are explicitly left out of Carnap's epistemology, precisely because such decisions are preconditions of the possibility of objectivity and justification; they are "pragmatic" and not "theoretical."[26] But, looked at in this way, the discussions of conventionalism in Carnap, Reichenbach ([1928] 1958), and, ultimately, in Duhem ([1906] 1991) and Poincaré ([1902] 1952) invite a theoretical interest in the social processes by which such decisions are reached within a community of experts and suggest a place for a sociology of science.[27]

Moreover, within logical empiricism there was an explicit sociology

25. This is in Carnap (1926). For discussions, see Edmund Runggaldier (1984) and Richardson (1997).

26. This distinction was stressed by Carnap for roughly the last forty years of his career. An early discussion is in his book ([1934] 1975). Later, it became the distinction between internal and external questions, as in Carnap ([1950] 1956).

27. I do not want to be misread as claiming that all the mentioned authors themselves were interested in such social processes. As Don Howard has reminded me, there were large differences in Poincaré's and Duhem's attitudes toward what constituted the basis for coming to a conventional agreement. An illuminating general discussion of Reichenbach's point of view is found in Sklar (1973). An alternative view that ties Reichenbach's claims more directly to aspects of the theory of relativity is found in Friedman (1994). The connection between social processes studied in sociology of science and conventional decisions is clear in the work of Harry Collins and Trevor Pinch (1993). It is also suggested in Galison (1987) from a somewhat different point of view but in a way that connects to Carnap's and Popper's conventionalism regarding protocol statements. This way of connecting logical empiricism and sociology of scientific knowledge was first suggested to me by Steven Shapin, who attributed it to David Bloor.

of science of a sort, worked out by Otto Neurath. Neurath's work was fairly unique within the community of scientific philosophers given his explicitly social understanding of epistemology. Thus, in Neurath's work no tension appears between the sensibilities about science he uses to polemicize in favor of a scientific philosophy and those he discusses while doing scientific philosophy. Neurath wished to replace with a suitably scientifically useful project of reasoned cooperation in pursuit of social goals. The social and political nature of Neurath's scientific (replacement for?) philosophy has been stressed recently by Thomas Uebel (1992) and Nancy Cartwright (Cartwright et al. 1996). As Cartwright et al. wrote, "We begin with a philosophical problem: how are choices to be made when claims compete? We are given a practical answer: persuade, educate, negotiate; in the end, decide and act. The point is, it is an answer. Neurath worked throughout his life to show that it would work; indeed must work, for it is all we have. We must think about our problems, negotiate with our opponents, make our choices and see to it that they are carried through" (1996, p. 252).

Here is one potential fruit of a serious history of scientific philosophy: Logical empiricism seems to have been read as if it were nothing but old empiricism in fancy logical dress. This reading has undervalued the centrality of the public character of objectivity in the various projects of the logical empiricists. Viewing logical empiricism as one (or several) episodes in a more general project of scientific philosophy—a philosophy that explicitly adopted a social understanding of the scientific process in its motivational moments and in some aspects of its systematic understandings—reorients us toward, and gives us new ways of thinking about, the reasons for the concern logical empiricists had with scientific objectivity, conventionality, and the rational solution of social problems.

Scientific Philosophy and Phenomenology

One question we must return to is the general question of how philosophy came to be divided into analytic and continental camps in the twentieth century. Given how close the founders of analytic philosophy were to the founders of phenomenology in their understanding of the spirit of the philosophical enterprise, the question becomes perhaps even more pressing. Here, too, further consideration of the understandings of science expressed by scientific philosophers in the twentieth century seems to be of some help. Perhaps not surprisingly, the crucial figure in this story appears to be Heidegger.

Heidegger's work in the 1920s exhibits an interesting development

when viewed within the history of scientific philosophy. Throughout this period, Heidegger motivated his philosophy by considering its relations to science and *Wissenschaftlichkeit*. His thought shows a movement from the forward-looking, modernist rhetoric found in Husserl, to the older, more gentlemanly conception of science found in the early modern period. This seems to be the result of his increasingly historical view of the relation of his philosophy to philosophy as done since the Greeks. During the 1920s, Heidegger became less interested in a new conception of philosophy and more interested in showing his philosophy to be the fruition of thousands of years of thought.

Heidegger began his 1925 lecture course in Marburg with a lengthy, interesting, and clear discussion of the movement of scientific philosophy (Heidegger 1985, chap. 1). Within Heidegger's history, the main heroes of scientific philosophy were Brentano, Wilhelm Dilthey, and Husserl. His summation is very much like Husserl's view:

> To summarize: In the middle of the nineteenth century a well-defined scientific philosophy gained prevalence. The expression "scientific philosophy" has a threefold sense. This philosophy characterized itself as scientific:
>
> 1. Because it is a philosophy of the sciences, that is, because it is a theory of scientific knowledge, because it has as its actual object the fact of science.
> 2. Because by way of this inquiry into the structure of already given sciences it secures its own theme that it investigates in accordance with its own method, while it itself no longer lapses into the domain of reflection characteristic of the particular sciences. It is "scientific" because it acquires its own domain and its own method. At the same time, the method maintains its security by its constant orientation to the factual conduct of the sciences themselves. Speculation aimed at world views is thereby avoided.
> 3. Because it seeks to give a foundation to the various disciplines that are directed toward consciousness through an original science of consciousness itself, a *psychology*. (1985, pp. 18–19)

Here we have a statement in which Heidegger places himself within a tradition extant only since roughly 1865. By placing himself within the tradition of scientific philosophy, Heidegger could direct his thoughts toward questions of scientific knowledge. By reacting against specula-

tive metaphysics, Heidegger could follow Husserl in formulating a new science of phenomenology.

Heidegger's mood changes in the wake of *Being and Time* ([1927] 1962), however. During and directly after its publication, Heidegger began to lecture more and more on the history of philosophy. Moreover, he began to express the relation of his project, now conceived as fundamental ontology, to historical philosophy in very different terms. Adopting an old conception of science as simply systematic knowledge, Heidegger argued in his *Basic Problems of Phenomenology:* "That philosophy is scientific is implied by its very concept. It can be shown historically that at bottom all the great philosophies since antiquity more or less explicitly took themselves to be, and as such sought to be, ontology. I gave historical proof of this in my courses of the last two semesters, one on ancient philosophy and the other on the history of philosophy from Thomas Aquinas to Kant" (1982, p. 12). The notion of science here cannot be the one the Husserl recommended sixteen years earlier. Only by adopting a more traditional conception of science could Heidegger hope to show that all great philosophers had sought to establish philosophy as a science of Being. Although Heidegger continued to use the phrase "scientific philosophy" in the introductory sections of *Basic Problems of Phenomenology,* he argued that the phrase was redundant, scientific philosophy was simply philosophy (cf. 1982, p. 12).[28]

Moreover, Heidegger's ontology assumed a more lordly stance with respect to the special sciences by the end of the 1920s. While Heidegger still saw philosophy as to be striving to be the science of ontology, he now claimed that ontology or metaphysics could raise questions that go beyond all special scientific rigor. Through its sole engagement with the Nothing, metaphysics goes beyond any other science. The existential moment in which Dasein confronts the Nothing combines with the recovered historical conception of science to reintroduce a metaphysics beyond the ken of science: "Metaphysics is the basic occurrence of Dasein. It is Dasein itself. Because the truth of metaphysics dwells in this groundless ground it stands in closest proximity to the constantly lurking possibility of deepest error. For this reason no amount of scientific rigor attains to the seriousness of metaphysics. Philosophy can never

28. The redundancy of the phrase "scientific philosophy" for Heidegger during this time period is clear in the way he likens that phrase to the phrase "round circle" in his *Einleitung in die Philosophie* (1996, pp. 16–18), a collection of lecture notes from his Freiburg seminar in 1928–29. I am indebted to one of the anonymous referees for pointing out this passage to me.

be measured by the standard of the idea of science" ([1929] 1977, p. 112).

Here we see various pathways by which the historical study of philosophy informed and reoriented the field of phenomenology. Moreover, it was precisely the metaphysical elements of the historical figures that took on the largest import for Heidegger, because their writings were now being read as being texts that presaged the development of phenomenology. Thus, whereas Hegel was superseded by Russell, Husserl, and the logical empiricists, he was subsumed by Heideggerian phenomenology. This was not because Heidegger viewed himself as carrying forward Hegel's project so much as he viewed Hegel as straining toward his own project. Interestingly, Husserl also became more and more concerned with tracing the relations of phenomenology to historical figures in western philosophy. As he came to see the importance of historical issues in the foundation of knowledge, however, Husserl began to feel that his own work was not the fruition of scientific philosophy but its ending: "Philosophy as science, as serious, rigorous, indeed apodictically rigorous science—*the dream is over*" (Husserl [1954] 1970, p. 389).[29] Given Husserl's rejection of historicist methodology during his more forward-looking days in the 1910s, his denial of the project of establishing a workable scientific philosophy can apparently be attributed to his increasingly historicized understanding of how western philosophy developed:

> Now in our epoch everyone has in his surrounding world, in the practical realm of general availability, a science of history and in particular a scientific history of philosophy; or rather, belonging as a preliminary stage to general history itself and to every sort of special history is a scientific preliminary interpretation and critique of the literary and other documentation of the historical past—which is our past and that of the historian who belongs within our "we." Once again: *What is,* what must be, *the significance of this for the philosopher who thinks for himself?* Is the work lost that he, unconcerned about scientific historical study, has done under the guidance of, through the use of, his "unhistorical," untrue Plato, etc.? (Husserl [1954] 1970, pp. 393–94)

A History of Scientific Philosophy

Much of contemporary philosophy is guided by two ways of conceiving the relation of the history of philosophy to philosophy in general.

29. This portion of Husserl (1970) was written in 1935.

The first view is that the great historical figures are all to be understood as having striven to be what we are today. This view was, as we have seen, raised to the status of a principle in Heidegger's historiography. It also informs much analytic thinking about the history of philosophy, which sees the great historical figures struggling to enunciate the problems discussed today. The other theme is similarly presentist and Whiggish—philosophy as traditionally conceived is over and good riddance.[30] This view is more the view of contemporaries of Heidegger such as Neurath.

Whatever the general merits of such views, they also exhibit a great deal of irony. They are, as much as anything, products of scientific philosophy itself. Whether scientific philosophers conceived of scientific philosophy as having been the implicit goal of all prior philosophy or as having changed the nature of philosophy utterly, scientific philosophers implicitly and explicitly rejected any idea of a historically changing place for philosophy in the life of the culture. Scientific philosophers' scientific aspirations—a philosophy with its own particular subject matter, problem situations, and technical solutions, jointly sought by an international community of coworkers—have blinded their successors to many of the actual historical roots of their discipline in nineteenth- and early twentieth-century philosophy. I have offered a different direction based on taking seriously the history of scientific philosophy itself. Philosophers in the nineteenth and early twentieth centuries continually sought a place for philosophy in the new intellectual, cultural, and academic order by stressing its scientific credentials. They did this by adopting a modernist conception of science and importing it into philosophy. I have tried to indicate ways in which attention to the importance of scientific philosophy, especially in the era from the turn of the twentieth century to the Second World War, can reform our vision of the place of philosophy in the contemporary academy and contemporary life.

According to the view I am offering, a central element of the history of twentieth-century philosophy is and has been discussions among the philosophical schools as to how or whether philosophy should model itself on contemporary science. It is a difficult history (as befits a difficult subject), since attention has to be paid not only to the official accounts of science given by the schools but also to the different sensi-

30. The Whiggish element of this view is, of course, that it is contemporary (anti)philosophers who have discovered the poverty of all prior philosophy and who expertly tell us that there are no philosophical experts. I would only suggest that a more appropriate view is that there is no single "traditional conception" of western philosophy either to be celebrated or overcome.

bilities about science expressed in their more polemical or motivational writings. Similarly, attention must be paid to the range of options that the schools found available to them, relative to which a scientific philosophy was either chosen or rejected. Ultimately, such a history may reveal a central element in our culture's struggle to find out just to what extent human life, including human aspirations and ideals, can be placed into the hands of scientific experts.

I have highlighted some issues that I believe show promise of being illuminated from a perspective on recent history of philosophy that takes scientific philosophy as its focus. Precisely how illuminating such a history can be is, of course, unclear at the outset. I suspect that the only way to test this perspective is to follow MacIntyre's (1984, p. 47) advice and attempt to write the history of philosophy in this way and either succeed or fail.[31]

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31. A history of scientific philosophy seems to be fit into Daston's (1994) account of historical epistemology. In any case, I certainly agree with her assessment of one of the merits of such historical work: "Given the rarity of creative metaphysicians in any age, all conceptual alternatives to how we currently think are a welcome enrichment to our constrained philosophical imaginations" (p. 284).

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