
CHICAGO JOURNALS

THE PHILOSOPHY OF SCIENCE ASSOCIATION

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Reviewed work(s):
Source: *Philosophy of Science*, Vol. 69, No. S3 (September 2002), pp. S36-S47
Published by: The University of Chicago Press on behalf of the Philosophy of Science Association
Stable URL: http://www.jstor.org/stable/10.1086/341766
Accessed: 05/11/2012 19:56

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Engineering Philosophy of Science: American Pragmatism and Logical Empiricism in the 1930s

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This essay examines logical empiricism and American pragmatism, arguing that American philosophy's embrace of logical empiricism in the 1930s was not a turning away from Dewey's pragmatism. It places both movements within scientific philosophy and finds two key points on which they agreed: their revolutionary ambitions and their social engineering sensibility. The essay suggests that the disagreement over emotivism in ethics should be placed within the context of a larger issue on which the movements disagreed: demarcationism and imperialism.

1. Introduction. Here is something we all have learned: Quine's rejection of the analytic/synthetic distinction was a major blow to the project of the logical empiricists. Quine's argument undercut the distinction that grounded the attitude toward philosophy on offer in logical empiricism—if there is no a priori discipline of logic, the concerns about knowledge and scientific method investigated by logical empiricism were *misunderstood* as logical concerns by that program. Rather than a formal and a priori philosophical foundation for science given in philosophy of science, all the philosopher has to go on is empirical, evidence regarding how science is actually done. Quine's arguments moved analytic philosophy toward naturalism, a posteriorism, and pragmatism. Philosophy has no methods other than those of science, no foundations more secure than

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‡ This essay derives from a talk in the symposium on pragmatism at the Philosophy of Science Association meetings in Vancouver. I am grateful to my fellow symposiasts, Peter Godfrey-Smith and Gary Hardcastle, the chair, Kyle Stanford, and the audience members, especially Ronald N. Giere, for helpful comments.

Philosophy of Science, 69 (September 2002) pp. S36–S47. 0031-8248/2002/69supp-0004$10.00
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science, and no subject matter distinct from science. Quine's pragmatism follows from his rejection of the analytic/synthetic distinction: this collapses Carnap's internal/external distinction and the difference between acceptance of linguistic frameworks for pragmatic reasons and acceptance of claims inside frameworks for evidential reasons. All decisions about what scientific claims to accept, for Quine, are "where rational, pragmatic" (Quine 1980, 46).

There is an historical puzzle embedded in this universally learned philosophical story. The puzzle is presented by Ronald N. Giere:

> Part of our question, then, is: How did a naturalistic pragmatism incorporating an empirical theory of inquiry get replaced by a philosophy that regarded induction as a formal relationship between evidence and hypothesis? In the 1950s, many philosophers of science would have given such a question very short shrift. Many would simply have asserted that pragmatism was mistaken and logical empiricism correct. . . . But such a response will not suffice in the 1990s. Ever since Quine advocated naturalizing epistemology, philosophical sentiment has been moving back in Dewey's direction. So the question now is why philosophers then *believed* that pragmatism was so obviously wrong and logical empiricism so obviously right. (Giere 1996, 347)

Note the terms of this historical conundrum: The move to naturalism and pragmatism in Quine's work is a *return* to Dewey. There is, however, a question to ask before we attempt to answer Giere's own question: When Quine said "I am a pragmatic naturalist" in the 1960s, did he mean thereby to commit to what Dewey was committed to when Dewey said "I am a pragmatic naturalist" in the 1930s? The introduction of Isms is an effort to create maps of possible positions on issues and to announce one's commitment to one or another of those positions. So, when a philosopher introduces a system of Isms it matters what sort of map is being drawn and what sort of commitment is being made. But the Isms involved here, naturalism and pragmatism, are terms whose ambiguity and vagueness should make us leery of assuming that they express philosophical affinities across stretches of time as short as thirty years.

Space limitations require that the topic of this essay be highly circumscribed. Henceforth, I shall eschew any discussion of Quine and the "return to pragmatism and naturalism" in order to concentrate on the prior question: Did the American philosophers turn away from Dewey and toward logical empiricism? Giere's history posits such a turning away from Dewey, and Giere himself provides some candidate reasons. I will argue, on the contrary, that logical empiricism and Dewey's version of American pragmatism had affinities along dimensions of philosophical concern that in the 1930s were more important than either naturalism or pragmatism.

I shall do this with a bit of map-making of my own: I shall offer a few dimensions along which twentieth-century philosophical projects diverged. With this map in hand, we shall see that it made sense for Dewey and his followers to ally themselves with logical empiricism; we shall also see one dimension of difference between Dewey and logical empiricism, but along this dimension Quine's work is not a return to Dewey.

2. From Naturalism to Scientific Philosophy. When approaching American philosophy in the 1930s, two interpretative terms should be avoided: pragmatism and naturalism. Of course, these terms appear in the work of American philosophers in the 1930s and are part of the interpretative puzzle for the historian. What the historian must not do is presume at the outset that he knows what his historical actors mean by these terms—and he should not expect that they mean whatever it is that he means by them. The terms are notably vague and ambiguous; it is best to set them aside as historical resources, even as one takes them up as historical topics.

For example, 'naturalism' suffers from an ambiguity of opposites: naturalism has, in various places and times, been contrasted with spiritualism, idealism, formalism, a priorism, humanism, and artificialism. For today's naturalists, 'naturalism' names a commitment to a method that cites only natural processes, and to an ontology that forswears certain sorts of things (for example, disembodied ideas), and to a metaphilosophy that claims philosophy is an empirical science. Ambiguity in the term explains why there is no real community of naturalists, no common project, method, goal, or sentiment.

David Hollinger has noted the poverty of the term 'naturalism' in American philosophy in the 1930s and 1940s:

> The term "naturalism" is probably the least expressive of the labels employed to distinguish twentieth-century philosophers from one another. The ends of naturalistic metaphysics were persistently difficult to define: a philosopher could get away with calling himself a "naturalist" so long as he rejected "disembodied spirits" and exhibited a modicum of interest in science. In fact, the label denoted a subculture more than a philosophical outlook: by the early 1940s being a "naturalist" was virtually synonymous with doing philosophy on Morningside and St. Nicholas Heights. (Hollinger 1975, 126)

This lack of specificity is seen in Ernest Nagel's essay on philosophy in Cambridge, Vienna, Prague, Warsaw, and Lwow, in which he wrote (Nagel 1936, 10) "any one brought up in the atmosphere of analytic naturalism will find himself very much at home intellectually at the places on which I am reporting." 'Naturalism' then disappears as a term in use in the paper.

Naturalism is thus doubly damned as a term for historical interpreta-

tion of American philosophy in the 1930s and 1940s: it meant nothing specific to the historical actors and it means nothing specific to us. As for "pragmatism," the sport of uncovering its ambiguities has been in vogue since Arthur Lovejoy found thirteen pragmatisms in 1908. Moreover, by the late 1930s, "pragmatism" was decreasingly in vogue—Dewey's (1938) *Logic: The Theory of Inquiry* uses the term "pragmatism" not once in over 400 pages. He repeats this omission in his ([1944] 1970) *Theory of Valuation,* his major contribution to *The Encyclopedia of Unified Science.* Even the pragmatists in the 1930s had little use for "pragmatism."

In other essays (Richardson 1997, forthcoming a, forthcoming b) I have argued that there was a philosophical movement in late nineteenth- and early twentieth-century philosophy that is appropriately called "scientific philosophy." I will now use this movement to offer a more explanatory history of the early reception of logical empiricism in North America: only by attending to the characteristic rhetoric of various projects in scientific philosophy will the coming together of Dewey's pragmatism and logical empiricism make sense. My interest here is less philosophical theses and more philosophical commitments, goals, or aspirations. I am interested in the motivational elements of scientific philosophy—the ways the scientific philosophers expressed their intellectual commitments and invited participation in their philosophical projects. The dimensions along which I find a convergence between Dewey's pragmatism and logical empiricism are: the revolutionary ambitions of scientific philosophy and its social engineering sensibility. The difference I will explore is Dewey's insistence that scientific philosophy must have a place for a theory of value, something missing in verificationism and expressivist accounts of value in logical empiricism. I will suggest that this divergence is best approached not as first-order dispute over philosophical theses regarding meaning and value, but as a programmatic difference between demarcationist and imperialist scientific philosophy.

3. Scientific Philosophy in America before Logical Empiricism. Herbert Feigl did not bring scientific philosophy to the United States. Arguments over the scientific status of philosophy had flared in the American context throughout the early twentieth century. Debates on this matter arose in the early meetings of the American Philosophical Association, for example.[1] In order to simplify the debates, I will concentrate on the period in

1. The significance for Morris R. Cohen of the scientific status of philosophy is indicated in the title of Hollinger (1975). The best comprehensive view of scientific philosophy in America before 1930 is Wilson (1990). For more on the relations between the American and Austrian contexts of scientific philosophy, see Richardson (forthcoming a, forthcoming b).

American philosophy between the start of the First World War and 1930 and on three figures: Dewey, Lovejoy, and Morris R. Cohen.

The scientific philosophers in the early twentieth century generally agreed on the following points: Philosophy, like science, had the aim of securing objective truth. Philosophy, unlike the special scientific disciplines, had not been successful in achieving consensus on any of its issues and, thus, was doing badly given its aims. Philosophy, therefore, had to learn from science regarding the means for achieving its aims. Philosophy had to achieve the sort of community and habit of mind exhibited by scientists in other disciplines; scientific philosophers required consensus and collaborative and piece-meal progress toward truth. Agreement on these matters left several key issues open for debate. What the methods of science were, how to achieve a proper philosophical community, what the subject matter of scientific philosophy was, these were all topics of debate.

I wish to focus on two issues under debate that dealt with the philosophical significance of scientific philosophy. The first issue was whether scientific philosophy was a revolutionary break from previous philosophy. The second issue concerned the social importance of scientific philosophy: was the scientific philosopher the pure philosophical theorist or the philosophical engineer? These two issues are conceptually distinct but historically interrelated, especially in the American context. The most salient argument for the revolutionary status of scientific philosophy among the Americans was that scientific philosophy had practical consequences that no philosophy hitherto had had.

Among American scientific philosophers of the era, no one had more revolutionary fervor than did John Dewey. Immediately after the First World War, Dewey elaborated his experimental philosophy in the series of lectures contained in *Reconstruction in Philosophy.* He enunciated a revolutionary project that brought into philosophy an experimental, scientific habit of mind and freed it from "vain metaphysics and idle epistemology" (Dewey [1920] 1948, 124). Dewey's way forward is away from traditional philosophical preoccupations and toward new tasks that are at once properly philosophical and socially transformative:

> The causes remain which brought philosophy into existence as an attempt to find an intelligent substitute for blind custom and blind impulse as guides to life and conduct. The task has not been successfully accomplished. Is there not reason for believing that the release of philosophy from its burden of sterile metaphysics and sterile epistemology instead of depriving philosophy of problems and subject-matter would open a way to questions of the most perplexing and the most significant sort? (Dewey 1948, 126)

Dewey's confidence regarding the ability of scientific philosophy to

transform itself into something socially significant stems from a scientific result, the ontological plasticity of the Darwinian world. Lacking a metaphysical essence, human beings must take responsibility for their own action and characteristics and give themselves new tasks. In Dewey's vision, recent science informs philosophy as precondition, method, and goal:

> Until the dogma of fixed and unchangeable types and species, of arrangement in classes of higher and lower, of subordination of the transitory individual to the universal had been shaken in its hold upon the science of life, it was impossible that the new ideas and method should be made at home in social and moral life. Does it not seem to be the intellectual task of the twentieth century to take this last step? When this step is taken the circle of scientific development will be rounded out and the reconstruction of philosophy be made an accomplished fact. (Dewey 1948, 75–76)

Revolutionary rhetoric of a scientific philosophy overcoming metaphysics and epistemology on the road to more pressing problems was not common among scientific philosophers in the United States. Morris R. Cohen, in his 1929 American Philosophical Association Presidential address, assimilated the goal of philosophy to the goal of science (Cohen 1930, 128): "the work of the philosopher, like that of the scientist, [is] part of humanity's organized search for universally ascertainable truth, a truth that can withstand partisan contention and critical doubt." Nevertheless, Cohen, explicitly taking issue with Dewey, offers a more conservative scientific philosophy:

> When the public at large is urging us, on the authority of our leading representative, Professor Dewey, to abandon the technical problems which occupy philosophers and to go back to the problems of men, it is surely opportune to insist in all seriousness that we shall never help humanity very much by neglecting our own special task, the only task for which we are as philosophers properly trained. It is true, of course, that in science as in the arts technical problems tend to become too complicated, and it is often advisable to retrace our steps and to find a new path and to find a new path through our tangled difficulties. But the value of a new approach is to be tested by whether it enables us to see the old problems in a new light. (Cohen 1930, 130–131)

For Dewey scientific philosophy finds new tasks, while for Cohen it finds only new methods and paths for old tasks. For Cohen the problems of scientific philosophy are those of earlier philosophy, for Dewey the connection is in occasioning conditions: scientific philosophy is *caused* by the same human facts as all philosophy, but neither its specific tasks nor its methods are continuous with those of earlier philosophy.

This divergence between Dewey and Cohen regarding revolutionary scientific philosophy already suggests their divergence regarding its practical significance. Cohen's scientific philosophy is technical and esoteric, theoretical rather than practical. He contrasts "technique" with "vision," arguing for more of the former and less of the latter in philosophy. Dewey's scientific philosophy is practical and is motivated by the technological triumphs of science:

> When chemical fertilizers can be used in place of animal manures, when improved grain and cattle can be purposefully bred from inferior animals and grasses, when mechanical energy can be converted into heat and electricity into mechanical energy, man gains power to manipulate nature. Most of all he gains power to frame *new* ends and aims and to proceed in regular system to their actualization. Only indefinite substitution and convertibility regardless of quality render nature manageable. The mechanization of nature is the condition of a practical and progressive idealism in action. (Dewey 1948, 71–72)

Dewey's stress is ever on the practical problems of life, now to be attacked by a scientific philosophy imbued with a spirit of engineering. He may, indeed, be the first explicit advocate of social engineering:

> The experimental logic when carried into morals makes every quality that is judged to be good according as it contributes to the amelioration of existing ills. And in so doing, it enforces the moral meaning of natural science. . . . Natural science loses its divorce from humanity; it becomes humanistic in quality. It is something to be pursued not in a technical and specialized way for what is called the truth for its own sake, but with the sense of its social bearing, its intellectual indispensableness. It is technical only in the sense that it provides the technique of social and moral engineering. (Dewey 1948, 172–173)

Dewey's socially conscious engineering philosopher contrasts with the temper of the scientific philosopher as presented in Arthur Lovejoy's American Philosophical Association Presidential address. Lovejoy's philosophers exhibit the virtues not of the social engineer but of the theoretical scientist:

> If philosophy *is* to be treated as a science, but a science still in the making; if it is agreed that it is worth while for society to maintain a small body of men for the purpose of ascertaining, with as much care and exactitude as possible, what can be known about certain of the largest and most difficult questions that present themselves to the human intellect–then society must not confuse this purpose with a wholly different one, that of furnishing impressive, imaginative, edifying,

> emotionally stirring, popular discourse about these same problems. (Lovejoy 1917, 146)

This divergence of attitude between Dewey, on the one side, and Cohen and Lovejoy, on the other, toward a social engineering role for scientific philosophy stems in large part from a divergence in diagnosis of the ills of unscientific philosophy. For Lovejoy and Cohen, the unscientific philosopher lacks discipline, and thus probity, and is more contemptible than powerful. For Dewey, the unscientific philosopher has power and plays a role in propping up an unjust social order. For Cohen and Lovejoy, a theoretically stagnant community of philosophers is an embarrassment, for Dewey it is a barrier to the progress of humanity.

The divergence of attitudes toward scientific philosophy and its social responsibilities exhibited here is at its sharpest in the vexed relations between Bertrand Russell and Dewey. Russell is the theoretical and technical scientific philosopher par excellence. He is also perhaps the most acute proponent of the account of the social import of scientific philosophy that Dewey rejected. Writing just before the First World War, in the Harvard lectures in *Our Knowledge of the External World,* Russell elaborated his conception of logic as the technical method of scientific philosophy. Russell's remarks on scientific philosophy stressed the abstractness of such philosophy; the social lesson to be learned is that philosophy has little to do with the practical problems of life:

> The theoretical understanding of the world, which is the aim of philosophy, is not a matter of great practical importance to animals, or to savages, or even to most civilised men. . . . Philosophy is not one of those pursuits which illustrate our affinity with the past: it is a highly refined, highly civilised pursuit, demanding, for its success, a certain liberation from the life of instinct, and even at times, a certain aloofness from all mundane hopes and fears. (Russell [1914] 1993, 36–37)

After convicting Spencer and Nietzsche of substituting human wishes for metaphysical facts, Russell returned to the importance of the civilized disconnection between scientific philosophy and human practical desires:

> The philosophy, therefore, which is to be genuinely inspired by the scientific spirit, must deal with somewhat dry and abstract matters, and must not hope to find an answer to the practical problems of life. . . . Many hopes which inspired philosophers in the past it cannot claim to fulfil; but other hopes, more purely intellectual, it can satisfy more fully than former ages could have deemed possible for human minds. (Russell 1993, 40–41)

Such remarks were anathema to Dewey, and exchanges between Dewey

and Russell tended to be somewhat shrill. Russell considered that Dewey's pragmatism might be American commercialism in philosophical clothing, while Dewey remarked on his own restraint in not making the counter-suggestion that Russell's dry, technical philosophy might be the expression of a decadent English aristocratic sensibility. Such remarks point to more than strained personal relations between the leading Anglophone scientific philosophers of the early twentieth century, they point to Dewey's suspicion of epistemologies that trade in notions such as the pure intellectual joy of disinterested pursuit of truth while doing nothing to make this joy available to more than a relatively few human beings:

> The belief that a theory of knowledge which in its origin was inherently a leisure class theory has influence in justifying the state of society in which only the few are thus privileged [to know the delight of gaining genuine knowledge], hence in perpetuating the latter condition, *is* a part of my complete theory. If that be commercialism, I do not know what humanism would be. (Dewey 1939, 529n)

4. Logical Empiricism and American Pragmatism. On these two issues,the revolutionary nature of scientific philosophy and its social engineering sensibility,the logical empiricists were close kin to Dewey and his acolytes. The revolutionary rhetoric of logical empiricism is well-known—even conservative logical empiricists such as Moritz Schlick understood it to be a decisive turn in philosophy. This is evident in the introductory essay of *Erkenntnis,* which Schlick titled "Die Wende in Philosophy" ("The Turning Point in Philosophy"). There Schlick noted the jumble of philosophical systems, and wrote:

> I refer to this anarchy of philosophical opinions which has so often been described, in order to leave no doubt that I am fully conscious of the scope and weighty significance of the conviction that I should now like to express. For I am convinced that we now find ourselves at an altogether decisive turning point in philosophy, and that we are objectively justified in considering that an end has come to the fruitless conflict of systems. We are already at the present time, in my opinion, in possession of methods which make every such conflict in principle unnecessary. What is now required is their resolute application. (Schlick [1930/1931] 1959, 54)

Such revolutionary rhetoric was ubiquitous: the scientific methods of logical empiricism will create the conditions of philosophical progress. Old projects in metaphysics, epistemology, and ethics are discarded and new projects in logic and the clarification of concepts are instituted.

It has been less well noted that progress in logical empiricist scientific

philosophy had important social consequences. Otto Neurath, Philipp Frank, Rudolf Carnap, and others believed that traditional projects in metaphysics were not simply nonsense, but nonsense with a political agenda: talk of transcendent values served to confuse people, propping up illegitimate structures of political authority with stories that no one could understand. The rejection of metaphysics had political consequences; it was a rationalizing and modernizing social movement. In the work of Neurath this political point was most fully expressed:

> For the proletarian front, the technique of the [class] struggle and the interests of propaganda coincide with high esteem for science and the overcoming of metaphysics. . . . The proletariat appreciates science properly only as a means of struggle and propaganda in the service of socialist humanity. Many who came from the bourgeoisie are worried whether the proletariat will have some feeling for science; but what does history teach us? It is precisely the proletariat that is the bearer of science without metaphysics. (Neurath [1928] 1973, 297)

This social point of the rejection of metaphysics is also expressed in the work of Carnap, who also found a modernizing social engineering project at the heart of the philosophical agenda of logical empiricism in Vienna.[2]

In the late 1930s and early 1940s, then, the social good of a radically scientific philosophy was a common preoccupation of Dewey's pragmatism and the logical empiricism. Both movements were engaged in conflict with a conservative, religiously-oriented philosophy (the Protestant establishment of the United States, the Catholic *Weltanschauungsphilosophie* of Austria) that served to legitimate certain social values and political structures. In those large cultural conflicts, both Dewey and the Vienna Circle spoke in favor of a scientific orientation and habit of mind. Internecine battles over naturalism or pragmatism were of little relevance in an era where allies within a revolutionary scientific philosophy were needed.[3]

5. A Tension between Pragmatism and Logical Empiricism. Of course, even early on neither the logical empiricists nor the American pragmatists thought the two projects were *identical.* One area of difference involved the proper philosophical account of values. Dewey's *A Theory of Valuation* was a frontal assault on emotivist accounts of value judgments. Dewey presented the problem in psychosocial terms—he combated emotivism on the ground that it exacerbates the divided subjectivity of modernity, a

2. Another aspect of the engineering sensibility of Carnap's philosophy of science is explored in Richardson (2000).

3. On cultural conflicts in American academic life in this period, see Hollinger (1996), especially Chapters 5 and 8.

problem responsible for modern irrationalism and requiring scientific solution:

> The hard-and-fast line which is supposed by some to exist between "emotive" and "scientific" language is a reflex of the gap that exists between the intellectual and the emotional in human relations and activities. . . . The *practical* problem that has to be faced is the establishment of cultural conditions that will support the kinds of behavior in which emotion and ideas, desires and appraisals, are integrated. (Dewey 1970, 444–445)

In a 1941 manuscript, C. I. Lewis also located a distinction between pragmatism and positivism in their accounts of the scientific and evaluative:

> For the pragmatist, there can be no final division between 'normative' and 'descriptive'. . . . Knowledge—so the pragmatist conceives—is for the sake of action; and action is directed to realization of what is valuable. If there should be no valid judgments of value, then action would be pointless or merely capricious, and cognition would be altogether lacking in significance. (Lewis 1970, 112)

The issues of cognitivism and emotivism in early twentieth-century moral theory cannot be discussed here, so I will limit myself to one suggestion: The difference between logical empiricism and pragmatism on this issue is most interestingly interpreted as the crucial case of a general rhetorical difference in the two programs. We may call the rhetoric of logical empiricism *demarcationist:* the point was to demarcate the proper role of science and to find the scientifically acceptable replacement for a core of traditional philosophy. Traditional moral theory is exposed as a metaphysically confused account of value to be set aside; the role of value is clarified as non-theoretical and non-cognitive—a matter of action, not belief. Dewey's characteristic rhetoric is *imperialist:* the point is to bring scientific rigor into all areas of philosophical concern. Moral theory is to be made scientific through the inculcation of the scientific habit of mind in the moral realm.

Attention to scientific philosophy uncovers themes that animated projects in early twentieth-century philosophy and that drew disparate movements together or pulled them apart. Reference to demarcationism and imperialism does nothing to resolve the disputes over emotivism in ethics, but it helps explain the significance of them. Moreover, reference to the larger themes allows us to see the recent history of American philosophy not as a turning away from and back toward Dewey. On the practical issue of the integration of the evaluative and the cognitive, Quine's work neither advocates nor exemplifies a return to Dewey. Quine's philosophical interests and persona, rather, represent the division of philosophical labor

inscribed in logical empiricism. With Quine, a theoretical commitment to pragmatism lost both its practical dimension and its social consequence.

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