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Notes on Pragmatism and Scientific Realism

CLEO H. CHERRYHOLMES

Professor Ernest R. House's article "Realism in Research" (1991) is informative for the overview it provides of scientific realism. At the outset House tells the reader that he will forgo comparisons between scientific realism and interpretivism, pragmatism, and critical theory in order to focus on "its [scientific realism's] introduction and explication" (p. 2). At the end he poses the question: "How does scientific realism compare with perspectives such as interpretivism, pragmatism, and critical theory?" (p. 9). A note of response is not the place to pursue such comparisons in detail, but a few comments, perhaps, may provide the basis for beginning such comparisons, in this case between pragmatism and scientific realism. Pragmatism and scientific realism share a number of assumptions about science, language, and the world. Both are also opposed to positivism/empiricism. Given their areas of agreement as well as some common opponents, it is surprising that these two schools of thought end up so far apart. The following comments profile a few of their affinities as well as a few dramatic differences that divide them.

The pragmatist camp includes, among others, C. S. Peirce, William James, George Herbert Mead, John Dewey, W. V. O. Quine, Richard Rorty, Cornel West, Richard Bernstein, and, with some give and take, Wilfrid Sellars, Nelson Goodman, Hilary Putnam, and Donald Davidson. The work of Lee Cronbach can also be read as having become increasingly pragmaticized during the course of his career. With the exception of Lee Cronbach, these writers and the versions of pragmatism they have argued were not drawn upon by Professor House. In addition to making an occasional pragmatist argument in what follows, I will juxtapose a few quotations from Richard Rorty to those of House in order to highlight similarities among and differences between pragmatism and scientific realism.¹ Two caveats before proceeding. First, there are many versions of pragmatism, with different points of emphasis, interpretations, and reinterpretations. These comments do not reflect that diversity by any stretch of the imagination; however, at the level of generality that a note of response constrains, I can think of few major disagreements among pragmatists as to the broad themes that are mentioned and outlined. Second, it is not clear that Professor House puts himself in the scientific realist camp. These comments are directed, therefore, at House's discussion of scientific realism and not his advocacy of it, although there are moments when he seems to advocate some aspects of scientific realism.

Before contrasting one version of pragmatism with House's scientific realism, I present a short introduction to pragmatism followed by one brief account of scientific realism. Peirce's pragmatic maxim was perhaps the first ex-

plicit declaration of pragmatism. Here is his 1905 statement of it:

The word *pragmatism* was invented to express a certain maxim of logic The maxim is intended to furnish a method for the analysis of concepts The method prescribed in the maxim is to trace out in the imagination the conceivable practical consequences—that is, the consequences for deliberate, self-controlled conduct—of the affirmation or denial of the concept. (Peirce, 1905, p. 494)

Initially, then, pragmatists sought to clarify meanings of intellectual concepts by tracing out their "conceivable practical consequences." Later, James and Dewey shifted attention to the importance of the consequences of actions based upon particular conceptions. Here is something Dewey wrote along these lines:

Pragmatism . . . does not insist upon antecedent phenomena but upon consequent phenomena; not upon the precedents but upon the possibilities of action. And this change in point of view is almost revolutionary in its consequences. . . . [W]hen we take the point of view of pragmatism we see that general ideas have a very different role to play than that of reporting and registering past experiences. They are the bases for organizing future observations and experiences. (1931, pp. 32–33)

Many research traditions from positivist/empiricist (quantitative) to phenomenological/interpretivist (qualitative) to versions of critical research aim at getting things right; in Dewey's words, they "insist upon antecedent phenomena" in "reporting and registering past experiences." With the exception of critical research, these traditions in different ways maintain that descriptions, theories, and explanations precede values, social policy, and educational practice.² Research in a pragmatic tradition, however, seeks to clarify meanings and looks to consequences. For pragmatists, values and visions of human action and interaction precede a search for descriptions, theories, explanations, and narratives. Pragmatic research is driven by anticipated consequences. Pragmatic choices about what to research and how to go about it are conditioned by where we want to go in the broadest of senses. Values, aesthetics, politics, and social and normative preferences are integral to pragmatic research, its interpretation and utilization.

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At a very general level, a pragmatic reading researcher/practitioner might approach issues of reading instruction as follows. He or she might start quite conventionally with a review of research findings. Furthermore, a review of research findings might indicate support for widely different approaches to teaching reading, as different from each other, perhaps, as phonics is from whole-language instruction. Pragmatists willingly concede that reading can be successfully taught in terms of raising achievement test scores by any one of a variety of ways, even by approaches to instruction that seem to be based on contradictory assumptions and arguments. Our pragmatist attends to the research literature because of the opportunities and constraints it suggests about reading instruction. Research findings are important to him or her, in Peirce's words, because of their "conceivable practical consequences—that is, the consequences for deliberate, self-controlled conduct" and, in Dewey's words, because "they are the bases for organizing future observations and experiences." Our pragmatist's focus is on the kind of community he or she wishes to promote and the kind of reading and readers such a community would value and require. In his or her desired community, reading could take any of several shapes: A first approach to reading might be for technical and information-gathering purposes; a second, for aesthetic pleasure in terms of reading poetry and novels; a third, for moral and ethical deliberation about personal behavior and social issues; and a fourth, for criticism—artistic, aesthetic, and political. Beginning with what he or she thinks is known and looking to the consequences he or she desires, our pragmatist would pick and choose how and what to research and what to do. Because some of these strategies work at cross-purposes to his or her desired community and ways of interacting, our pragmatist simply eliminates them as possibilities for his or her classroom. Our pragmatist might choose to ignore or actively oppose, for example, approaches to teaching reading that work against reading for aesthetic pleasure or critical insight. These are some of the revolutionary consequences of pragmatism to which Dewey referred: Not everything that works is desirable, not every belief that is "true" is to be acted upon.

In contrast to pragmatism here is a brief characterization of scientific realism given by Bas C. van Fraassen (1980):

Scientific realism is the position that scientific theory construction aims to give us a literally true story of what the world is like, and that acceptance of a scientific theory involves the belief that it is true. . . . According to the realist, when someone proposes a theory, he is asserting it to be true. . . . The idea of a literally true account has two aspects; the language is to be literally construed; and so construed, the account is true. (pp. 9–10)

This is an ambitious and to some, no doubt, an intuitively appealing view of science. But pragmatists are generally skeptical about the possibility of telling a "literally true story of what the world is like." Pragmatists of whatever camp have many questions to ask of a scientific realist; several are raised below.

Pragmatists agree with the rejection of positivism/empiricism with which House begins. It is arguable that W. V. O. Quine's deconstruction of the analytic/synthetic distinction and his attack on reductionism in "Two Dogmas of Empiricism" (Quine, 1953) provide a stronger counterargument to positivism/empiricism than that put for-

ward by scientific realists. When Donald Davidson's "On the Very Idea of a Conceptual Scheme" (1974) and Richard Rorty's *Philosophy and the Mirror of Nature* (1980) are included, the pragmatist rejection of positivism/empiricism is quite formidable indeed. But it would be a mistake to get caught up in a contest about whether pragmatists or scientific realists mount a stronger attack against positivism/empiricism.³

Pragmatists agree with House's beginning argument, "There is no incorrigible foundation for science such as sense impressions or pristine facts. Rather, knowledge is a social and historical product, facts are theory-laden. . . ." (p. 3). Rorty, grouping Wittgenstein and Heidegger with Dewey, puts a parallel pragmatist point like this:

The common message of Wittgenstein, Dewey, and Heidegger is a historicist one. Each of the three reminds us that the investigations of the foundations of knowledge or morality or language or society may simply be apologetics, attempts to eternalize a certain contemporary language-game, social practice or self-image (1980, pp. 9–10).

Pragmatists and scientific realists agree, then, that scientific research always occurs in social, historical, political, and other contexts. Pragmatists and scientific realists draw different lessons from this point of agreement. Pragmatists take seriously the assumption that we are historically and socially situated, that when we read the world we can never be quite sure if we are reading the "world" or reading ourselves whereas scientific realists apparently believe it is possible to "explain the real world" by "discovering more complex layers of reality to explain other levels" (House, 1991, p. 3).

Pragmatists agree that there is an external world independent of our minds; no disagreement here. Perchance some people who do not believe in an external world would call themselves pragmatists. If there are such people, this is not an argument on their behalf.⁴ But pragmatists are curious about how scientific realists know when they are closer to or farther away from knowing "reality." Rorty writes, "How would we know that we were at the end of inquiry, as opposed to merely having gotten tired or unimaginative?" (1991, p. 31). On this point a pragmatist has some questions to put to a scientific realist: How do you know that your "conception or picture" (House, 1991, p. 3 quoting Bhaskar) is of "reality"? How do you know that you know this?

House offers a place to begin addressing these questions. One has a theory or explanation of reality if one can "understand how the entity acts, which must always be in terms of tendencies and probabilities, since events are the outcomes of complex causal configurations, which sometimes cancel each other out" (House, 1991, p. 3). Pragmatists find this and similar answers congenial to their views (another area of agreement between the two schools of thought). A much more general statement along the same lines is at the core of pragmatism: "The pragmatic method. . . is to try to interpret each notion by tracing its respective practical consequences" (James, 1907/1981, p. 26). But scientific realists do not have this pragmatic argument at their disposal because it speaks of consequences, not "reality." Furthermore, to adopt James's criterion is to become a pragmatist. Now for a pragmatic response to the question, how do you know your "conception or picture" is of "reality": Pragmatists do not have an answer; they do not pretend to have an answer. Pragmatists do not know whether our current "picture or

conception" is closer to or farther from "reality" than those that have been abandoned. Furthermore they ask: How could we possibly know one way or the other?

What pragmatists believe is sometimes confused with knowing whether our knowledge is closer to or farther away from "reality." Pragmatists choose some explanations or theories or stories and dismiss others when the former produce results they desire better than the latter. These results could range from predicting the outcomes of experiments to outcomes of programmatic interventions. Does this mean that our accepted explanations and theories are better "conceptions" or "pictures" of "reality," of what is really "real"? The pragmatic response is that we have no way of knowing; our choice simply means that one approach is better than another at producing anticipated or desired outcomes.

If scientific realists were to use this pragmatic argument without becoming pragmatists—if that were possible—it would undermine what appears to be most dear to scientific realists, that they are explaining "reality." If scientific realists were to give up van Fraassen's view that "scientific theory construction aims to give us a literally true story of what the world is like, and that acceptance of a scientific theory involves the belief that it is true," what would distinguish them from pragmatists? Pragmatism denies foundationalism, the view that grounded meaning and truth can be determined once and for all. How would we know if our beliefs described "reality"? It is only by acting on our beliefs and observing the consequences that we would know whether our beliefs worked. But this is a pragmatic test that could yield contrary results on the occasion of a future test. Scientific realists are not interested in consequences or in what is workable, but in "reality." Pragmatists have another question: How is it possible to infer what is "real" from consequences of actions and outcomes of experiments? This is not a question for which pragmatists have an answer. What nonpragmatic criteria of success can scientific realists appropriate to expose what is really "real"?

Another point of agreement—pragmatists share the skepticism of scientific realists that House describes:

It was this kind of thinking, of equating what was experienced (the empirical) with actual events (the actual) with the real (the causal entities) that led in the wrong direction. Things got turned around so that what was real was mistaken to be limited to only what we directly experienced. (Rorty, 1991, p. 4)

Pragmatists believe, however, that scientific realists are insufficiently skeptical and that they should extend their skepticism to the possibility of describing what is really "real." Or, as Putnam (1990) argues, we should give up on the idea of acquiring for ourselves "God's-eye point of view" because, as Rorty comments, "A God's-eye view is one that is irrelevant to our needs and practices" (1990, p. 2). Recall the pragmatist reading researcher/practitioner described above; there are some "objectively" successful approaches to reading instruction, possibly, that work at cross-purposes to or are irrelevant to his or her goals. Our pragmatist will either work to cancel them out or simply ignore them. These decisions are shaped by his or her desires and the consequences he or she anticipates.

Pragmatists and scientific realists also agree that it is a mistake to distinguish between text and context. Note the

initial similarities but subsequent differences between these statements by Rorty and House. First Rorty:

For us [pragmatists], all objects are always already contextualized. . . . there is no question of taking an object out of its old context and examining it, all by itself, to see what new context might suit it. . . . Once one drops the traditional opposition between context and thing contextualized, there is no way to divide things up into those which are what they are independent of context and those which are context-dependent—no way to divide the world up into hard lumps and squishy texts, for example. (1991, pp. 97–98)

House writes:

A realist conception of causation might see events as being produced by the interaction of a multitude of underlying causal entities operating at different levels. That is, one might construe programs themselves as events which are produced by various causal entities. The program would not be exactly the same from place to place but would differ with the multitude of factors that produce the program—for example different teachers and students. In other words, the program would not be seen as a fixed entity, an "X" in a design, but as itself varying from site to site wherever it is produced. (1991, p. 7)

Again, pragmatists and scientific realists draw different implications from their shared belief in the importance of context. Pragmatists believe the important point is that we should give up the idea that we will ever be able to pin down "underlying causal entities" whereas scientific realists take that as their challenge.

Two other areas of apparent agreement deal with metaphor and alternative factual descriptions. On metaphor, House (1991, p. 5) quotes Bhaskar, who argues that in their explanations and models, scientific realists use "something like a logic of analogy and metaphor." There is much here that is shared with Rorty's following point:

If we extend these two notions ["understanding" and "interpreting"] to mean something like "making use of" or "coping with," then we can say that we come to understand metaphors in the same way that we come to understand anomalous natural phenomena. We do so by revising our theories so as to fit them around the new material. We interpret metaphors. . . by casting around for possible revisions in our theories which may help to handle the surprises. (Rorty, 1991, p. 167)

On alternative factual descriptions, House writes:

Theory is not in a relation of correspondence with reality and does not mirror reality. To provide an explanation is not to provide a mirror of events, a subtle but important distinction. Theory attempts to explain events, and the explanation may be adequate or inadequate. Theory must conform to standards of adequacy established within particular substantive disciplines. Thus the world is known only under particular descriptions and is, in that limited sense, epistemologically relative. (1991, p. 5)⁵

Rorty writes:

Once we dump the idea that the aim of inquiry is to represent objects and substitute the view that inquiry aims at making beliefs and desires coherent. . . the notion that there is truth only about what is *real* gets set aside. So the only

notion of "object" we need is that of "intentional object." An intentional object is what a word or description refers to. You find out what it refers to by attaching a meaning to the linguistic expressions to that word or description. (1991, p. 106)

Pragmatists and scientific realists find themselves on many of the same pages as they read the text of their assumptions. But the story each eventually tells is quite different—interesting and curious.

House flirts with pragmatism, with looking to the consequences, throughout his essay. He writes, "Because a complete causal analysis of a given event is impossible and unnecessary, which causes does one identify as being relevant?" (p. 6). Rorty takes a pragmatist line that takes relevance seriously and argues a related point: "Viewing inquiry as recontextualization makes it impossible to take seriously the notion of some contexts being intrinsically privileged, as opposed to being useful for some particular purpose" (1991, p. 110). Relevance and purposes go together. Without purposes, without being concerned with consequences, it is difficult to imagine how choices about relevance can be decided. When we decide upon purposes, some contexts and some relevances come to the foreground.

In the first sentence of his section on "Implications for Educational Research," House again displays his pragmatist sympathies: "What difference do these considerations make to educational research?" (p. 6)⁶ Here is one last example from House about the way pragmatists and scientific realists share the same insight yet end up far apart: "There is little doubt that the Humean or regularity theory of causation on which the standard view is based is incorrect. However, no one has succeeded in defining a satisfactory alternative position" (p. 9). Pragmatists fully agree. Pragmatists also believe that we would be better off if we stopped asking questions about laws of nature and what is really "real" and devoted more attention to the ways of life we are choosing and living when we ask the questions we ask. Here are two extended comments by Rorty on these issues:

People have, oddly enough, found something interesting to say about the essence of Force and the definition of "number." They might have found something interesting to say about the essence of Truth. But in fact they haven't. This history of attempts to do so . . . is roughly coextensive with the history of that literary genre we call "philosophy"—a genre founded by Plato. So pragmatists see the Platonic tradition as having outlived its usefulness. This does not mean that they have a new non-Platonic set of answers to Platonic questions . . . but rather that they do not think we should ask those questions anymore. When they suggest that we not ask questions about the nature of Truth and Goodness, they do not invoke a theory about the nature of reality or knowledge of man which says that "there is no such thing" as Truth or Goodness. Nor do they have a "relativistic" or "subjectivistic" theory of Truth or Goodness. They would simply like to change the subject. (1983, p. xiv)

Pragmatists would like to drop the idea that human beings are responsible to a nonhuman power. We hope for a culture in which questions about the "objectivity of value" or the "rationality of science" would seem equally unintelligible. Pragmatists would like to replace the desire for objectivity—the desire to be in touch with a reality which is more than some community with which we identify ourselves—with

the desire for solidarity with that community. They think that the habits of relying on persuasion rather than force, of respect for the opinions of colleagues, of curiosity and eagerness for new data and ideas, are the *only* virtues which scientists have. They do not think that there is an intellectual virtue called "rationality" over and above these moral virtues. (1991, p. 39)

Pragmatists, among other things, are anti-representationalists (Rorty, 1990), anti-essentialists (Rorty, 1990), anti-foundationalists (Quine, 1953), fallibilists (Rorty, 1980); they look to the consequences (James, 1907/1981), are pluralists (Dewey, 1931), are democrats (Dewey, 1931), are cultural critics (West, 1989), draw no hard distinction between text and context (Rorty, 1991), and value community (Dewey, 1917). At least one pragmatist believed that the aesthetics of everyday life is integral to pragmatism (Dewey, 1934/1980, chap. 3). Pragmatists come under many descriptions and in many guises. Pragmatists have portrayed themselves as liberal ironists (Rorty, 1989), critical naturalists (Shapiro, 1990), and critical legitimists (Connolly, 1987). Others have called for a critical pragmatism (Cherryholmes, 1988), pragmatic pluralism (Hassan, 1987), prophetic pragmatism (West, 1989), or democratic-socialist-feminist pragmatism (Fraser, 1989) or have suggested the possibility of a dialectical pragmatism (Garrison, 1991).

As described by House, scientific realists begin with many assumptions that are remarkably similar to those asserted by pragmatists, yet scientific realists end up far removed and distant from pragmatists. If scientific realists were to give up the idea of describing, accounting for, explaining, and theorizing about what is really "real," then they would become indistinguishable, perhaps, from pragmatists.⁷ In any case, if scientific realists wish to remain distinct from pragmatists, then they must come up with nonpragmatic criteria for success; they must tell us how we can infer from observations of consequences to "reality" by describing some post-pragmatic criteria of success. One reading of these similarities and differences is that in their search for "reality," scientific realists are romantics and pragmatists are realists, albeit of a different version from scientific realists, who believe the search for "reality" is a misguided and impossible search. Even if we came upon a True account of what is really "real," we would be at a loss to recognize it as True.

But Professor House and the scientific realists could be right about these things, and I and other pragmatists could be wrong. If that is how it turns out, then I will follow their lead, but in doing so, I will retain and act upon at least two pragmatist tenets: Do not block the road to inquiry, and look to the consequences.

Notes

I thank David Cohen, Jay Featherstone, and David Labaree for comments on an early draft of these notes.

¹I repeatedly go to Rorty because he is the foremost contemporary advocate of pragmatism and he writes particularly clearly about it. Rorty's pragmatism is distinct in various ways from that of Peirce, James, Dewey, Quine, Davidson, or West, but statements by these and other pragmatists could have been substituted for some of the quotations taken from Rorty. In 1981 Quine addressed the question of what common beliefs and assumptions pragmatists share. He concluded that only two general tenets set pragmatists apart; they hold to behavioristic semantics and "the doctrine of man as truth-maker" (p. 37). He agreed with each. If

these two convictions can be said to be more or less at the center of the web of pragmatic beliefs, it can be shown that each of the pragmatic positions I argue herein are linked to them. Several excellent introductions to the development of pragmatism and its assorted versions are available. For someone new to pragmatism, a treatment characterized by clarity and conciseness is John P. Murphy's (1990) *Pragmatism: From Peirce to Davidson*. H. S. Thayer's (1984) *Meaning and Action: A Critical History of Pragmatism* is a classic because of its thoroughness and insight. Last but certainly not least is Cornel West's (1989) *The American Evasion of Philosophy: A Genealogy of Pragmatism*, which sets pragmatism in the context of American culture over the last 150 years.

²This is a minor point possibly, but to the contrary, values and preferences always precede research activities and interpretations. This is how it works. Research choices, designs, and findings are expressed by statements; statements are actions; actions result from decisions; and decisions cannot be made without reference to values.

³House notes that scientific realists reject positivism. But what about empiricism? On empiricism, van Fraassen (1980) writes, "To be an empiricist is to withhold belief in anything that goes beyond the actual, observable phenomena, and to recognize no objective modality in nature. To develop an empiricist account of science is to depict it as involving a search for truth only about the empirical world, about what is actual and observable" (pp. 202-203). Thus, it appears that House's account of scientific realism rejects van Fraassen's account of empiricism.

⁴I hope that such people have others around them who will advise them to get out of the path of an on-coming bus if they should find themselves directly in its path as well as to warn them away from other dangers.

⁵It would be helpful for the reader if House would distinguish between Bhaskar's desired "picture" and his own undesired "mirror."

⁶Professor House's implicit and repeated allusions to various pragmatist ideas is reminiscent of a comment William James made about a Leipzig chemist in 1907:

I found a few years ago that Ostwald, the illustrious Leipzig chemist, had been making perfectly distinct use of the principle of pragmatism in his lectures on the philosophy of science, though he had not called it by that name. "All realities influence our practice," he wrote me, "and that influence is their meaning for us. I am accustomed to put questions to my classes in this way: In what respects would the world be different if this alternative or that were true? If I can find nothing that would become different, then the alternative has no sense." (1907/1981, pp. 26-27)

⁷Going back at least as far as Bertrand Russell's (1919) essay review of John Dewey's "Essays in Experimental Logic," it is arguable that many British philosophers are wont to misjudge American pragmatists and pragmatism. After discussing at length and relentlessly misinterpreting Rorty's pragmatism, Bhaskar (1989), a major authority on scientific realism for House, surprisingly expresses a rather close affinity with one aspect of Rorty's thought as well as pragmatism in the concluding sentence of a chapter entitled "Rorty, Realism, and the Idea of Freedom":

As for philosophers, if they follow the sounder part of Rorty's advice and give up the search for permanent a-historical compulsive foundations of knowledge . . . they may find that by focusing on the historical arts and sciences and the other social practices, as they are, have come down to us and may yet develop, there is more than a little critical underlabouring to do . . . (p. 179)

According to Bhaskar, "To underlabour. . . [is to] illuminate and empower the project of human self-emancipation" (p. vii).

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