Education and Pragmatic Realism

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In his "The Good, the Bad, and the Ugly: The Many Faces of Constructivism," Denis Phillips tries to provide a clear understanding of the range of various positions involving constructivism. In the first section of this essay, we present Phillips's way of viewing the various forms of constructivism and his framework for comparing the constructivisms. According to Phillips, there is a (very broad and loose) sense in which all of us are constructivists.[1] In the second section, we argue that Phillips has not presented all of the prominent "constructivist" possibilities, for his framework has not provided for pragmatic realism. Although the reinvention of pragmatism is associated with Richard Rorty and Hilary Putnam,[2] Catherine Elgin and Israel Scheffler have also developed a plausible pragmatic realism.[3] We explicate some of the key features of pragmatic realism and then compare it with Phillips's viewpoint. In developing our argument, we use a framework that takes into account the *interrelations* among epistemology, ontology, and (theories of) truth. We draw out some of the educational implications of a plausible pragmatic realism in the last section.

Phillips's Way of Viewing the Various Forms of Constructivism

Denis Phillips starts by claiming that "there is a very broad and loose sense in which all of us these days are constructivists" (*GBU*, 5). As he puts it, most do not believe that individuals (or groups) come into the world with their "cognitive data banks" already prestocked with empirical knowledge or with pre-embedded epistemological criteria or methodological rules. We agree with Phillips that science began from a position of relative ignorance. Somehow or other, it appears that human knowledge is evolving. Furthermore, we believe that he is correct when he says that most do not believe that "most of our knowledge is acquired, ready-formed, by some sort of direct perception or absorption" (*GBU*, 5).[4] We might call this the negative thesis of constructivism. (Phillips also develops a "positive" characterization.)

Phillips repeatedly warns his readers that the various forms of constructivism are complex views, not "single issue" positions, because they address a number of deep problems (*GBU*, 7). Still, he holds that it is possible to spread all of the various forms of constructivism out along *three* different dimensions (or continua, or axes), where each dimension represents one key issue. Phillips says that forms of constructivism that are close together on one issue (or dimension) may be quite far apart on another dimension (*GBU*, 7).

The first dimension is given the label "individual psychology versus public discipline" (*GBU*, 7). According to Phillips, some constructivists, for example, Jean Piaget and Lev Vygotsky, have been primarily concerned with how the individual

learner (or inquirer) goes about the construction of knowledge in his or her own cognitive apparatus. Other constructivists, on the other hand, have been primarily concerned with how human communities (or groups) have constructed public bodies of knowledge, commonly called the disciplines. In other words, this dimension is concerned with the "site of the constructed."[5]

The second dimension, which Phillips thinks is the "most crucial" one, is the dimension "that, in essence, allows one to define a thinker as being a constructivist." This dimension (or continuum) is characterized crudely by the label "humans the creators versus nature the instructor." As Phillips describes it:

> The issue is as follows: When knowledge is constructed (whether in the mind or cognitive apparatus of the individual learner, or whether it is a public discipline), is the process one that is influenced chiefly by the minds or creative intelligence of the knower or knowers, together perhaps with the "socio-political" factors that are present when knowers interact in a community? Or, at the other extreme, is the knowledge "imposed" from the outside; does nature serve as an "instructor" or as a sort of template that the knowing subject or subjects (or community of knowledge builders) merely copy or absorb in a relatively passive fashion? In short, is new knowledge — whether it be individual knowledge, or public discipline — *made* or *discovered*? (*GBU*, 7)[6]

We will return to Phillips's second dimension subsequently.

The *third* dimension has been touched upon earlier. The construction of knowledge is an *active* process, but the activity can be described in terms of individual cognition or in terms of social or political activities. If the view holds that knowledge is acquired automatically or by a predetermined, inflexible routine, however, then it is not a constructivist view. Thus, John Locke's view that (complex) knowledge automatically arises from simple sensory impressions is not a constructivist view.

It is perhaps surprising that Phillips does not give an example of a constructed "epistemological criteria or methodological rule." We believe the following will do nicely. Charles S. Peirce, John Dewey, and Israel Scheffler have argued that the concept of "probability" has come to play an increasingly important role in scientific thinking (as well as in everyday activities). But this concept was not innate; it was largely created (in its present form) in the early 1600s and was developed more fully in the twentieth century by scientists and mathematicians.[7] The concept is not without its own problems, but it still seems to play an important role in inquiry. Popperians do not regard probability as centrally related to theory "testing" in the widest sense, for they hold that the most probable theory is likely to be the *simplest*. Popperians hold that good science should develop and test theories that are *rich in content* so that our understanding of the world is deepened. Still, the Popperian has no need to deny the other ways in which probability is a useful term. The concept of probability is plausibly taken to be *constructed*.

Given his way of viewing the various constructivisms, one can see why Phillips might plausibly claim that Popper's philosophy is situated about in the middle of the dimension two continua. According to Phillips, Popper's theory of the growth of public bodies of knowledge can be roughly summarized as "man proposes, nature disposes." For Popperians, a tentative theory is a creation of human intellect. They

claim that there is no logic of discovery and that science just needs to allow for pluralistic and wide-ranging inventiveness. The logic of justification (that is, sophisticated falsifying) pertains to the error elimination accomplished by nature (*GBU*, 9).

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A BROADER WAY OF ORGANIZING CONSTRUCTIVISMS

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In his section on "the range of constructivist authors," Phillips presents Immanuel Kant as a noteworthy constructivist author. Indeed, one should agree that Kant is a paradigm case of a constructivist! According to Phillips, for Kant "the cognitive apparatus (in particular our 'category-governed modes of synthesis' in the case of natural science, as one commentator put it) was responsible for *shaping our experience*, and giving it causal, temporal, and spatial features" (*GBU*, 6, emphasis added). Such a remark talks only about the shaping one's experience. The reading does not mention that Kant's major point was ontological: Kant held that the objects of our knowledge are (partly) constructed by the (universal) categories (concepts) of humans. Like Aristotle and Locke, Kant believed the world had a law-like structure. In contrast to Aristotle and Locke, however, Kant held that the only way to account for our knowing the (universal) laws is to posit that humans have (a priori) universal concepts. (We shall return to post-Kantian themes.)

Like Locke and Kant, Popper held that the (physical) world is governed by laws. For Popper, the ultimate purpose of science is to "find" those laws. Yet Popper held that the particular "formulation" of the laws that one has at any given time are to be regarded as mere conjectures! These are never to be regarded as (simply) true. Popper meant to oppose both Aristotle's essentialism (the world has definite, fixed structures *and* the human mind can discern them) and Carl Hempel's inductivism (the world is governed by laws *and* the "inductive methods" can discern them). Popper called his position "modified essentialism":

> I do not think that we ever describe, by our [conjectural] universal laws, an *ultimate* essence of the world. I do not doubt that we may seek to probe deeper and deeper into the structure of our world or, as we might say, into properties of the world that are more and more essential, of greater and greater depth.[8]

For Popper, the (ultimate) essences of the world are really unknowable, but we can somehow come to approximate these "laws" and structures through the work of science, which, he maintained, involves (sophisticated) falsification (and verisimilitude). Yet he held that in no way whatsoever do human concepts "colour or mould" the real laws (structures) in the world. One might characterize Popper's view in this way: in the very long run, science will converge onto the "ready-made" real laws. According to him, "the rationality of science is essentially bound up with its *progress*, with the ever-renewed discussion of the relative merits of new theories; it is bound up with the *progressive* overthrow of theories."[9] Popper regarded the (real) laws (and structures) of nature as totally fixed, ready-made, and completely independent of any input from human inquiry.[10]

Let us return to Kant and the post-Kantians. On Kant's view, the laws and objects of the world are the joint product of the (noumena) world and the a priori concepts humans allegedly have. Post-Kantians typically make two major adjust-

ments to Kant's views. First, they reject the claims that there is a transcendental self and that the real person has such a priori concepts. The concepts are largely the collective social products of the specific, concrete, preforming forms of life into which the person has been enculturated.[11] Each generation of inquirers naturally, informally, and tacitly enculturates the next generation of individuals. The process of preformation (whereby one group of persons in a sense constitutes the next set of individuals) is by and large tacit and unconscious; it goes on behind persons' backs. In Anglo-American philosophy, this basic line of thought was first developed by Ludwig Wittgenstein.[12] Second, post-Kantians generally see the forms of life as having a history: the concepts, norms, and values change over time. Thinking itself is regarded as being historicized. Persons are regarded as having, not natures, but histories; persons are (in a sense) constituted by the preformative traditions.

Once these two major post-Kantian adjustments are made, how might one plausibly conceptualize pragmatic realism? We take Catherine Elgin and Israel Scheffler to be pragmatic realists.[13] Here we draw upon the work of Catherine Elgin, who calls herself a "social constructivist" (*ME*, 114, 123).[14] We believe that her essay "The Merits of Equilibrium" provides a nicely articulated and quite plausible account. First, we note that Elgin clearly rejects the correspondence theory of truth: "Truth…is not a matter of correspondence between sentences and a reality whose structure is independent of systematization. For any structure reality may have is imposed by a system that is informed by interests, objectives, and standards" (*ME*, 141; see also 105 and 127). She asks us to consider a situation in which we have found two systematizations of a domain that are equally great as judged by the cognitive (or epistemic) values of inquiry.

> Consider two comprehensive physical theories: T1 which explains events by appeal solely to specks; T2 explains the very same events by appeal solely to swells. Specks and swells may be thought of as analogous to the particles and the waves of contemporary physics. The theories are implacably opposed. Swells neither constitute nor are constituted of specks.…T2's ontology has no room for specks: T1's is equally inhospitable to swells.…Both theories, we may suppose, are empirically and theoretically adequate. They answer to the evidence B past, present, and future. Being elaborations of the same initially tenable commitments, they accord equally with our antecedent understanding of physical reality and the methods of investigating of it. They achieve an equal balance of simplicity, predictiveness, elegance, and explanatory power. Indeed, so well do they conform to our cognitive desiderata [our epistemic values] that we would not hesitate to accept either as true, were it not for the availability of the other. (*ME*, 138–139; see also 135)

One of the features of the traditional correspondence theory of truth is that in a given domain only one theory can be true, for the true theory will *mirror* the way the world really is. We could, Elgin has argued, accept the view that either T1 or T2 is true in the correspondence sense, but we would never know which one is the uniquely true one. Such a view leads to skepticism since, as traditionally understood,

> Truth is a property of interpreted sentences. And interpretation requires dividing a realm into entities, kinds, relations, and the like, and the correlating terms with the constitutions of the realm the division demarcates. Truth then is not independent of the systems we construct. For, as we have seen, it is those systems that individuate the objects and fix the referents of our terms. But multiple systems may share a realm and impose different orders on it. One

system partitions that physical realm into specks; another partitions it into swells. Independent of both systems, there are neither specks nor swells. (*ME*, 140)

In Elgin's view, then, what sentence *can* be asserted to be true in a given realm depends upon the conceptual system one is using. Similarly, what can be asserted to exist in a given domain depends upon the conceptual system one is using. As Elgin has put it, truth and ontology are "relative" to a system.

We think there is much in Elgin's views that can be plausibly defended. There is one notable difference, however, between Elgin's view and a typical pragmatic realist view. Elgin has "relativized" the attributions of truth to a conceptual system because attributions of truth or falsity arise within a conceptual system. How might the pragmatic realist interpret this global situation? In a given domain of inquiry, suppose we have found that there are two equally great (as judged by the epistemic values) theories. The pragmatic realist can plausibly say that each of the theories *maps*, equally well, the domain of inquiry. It is well-known that different kinds of maps can "map" the same region in different ways. If the realist wants to talk metaphorically here, he can say that each theory *fits* the domain equally well. Since the correspondence theory has been rejected, it is possible to have more than one theory "fit" — that is, map — a domain equally well.

Our Table 1 shows that Phillips's framework only attends to the first two rows that involve the individual-group and active-passive dimensions; it fails to draw out the issues associated with ontology and theories of truth. Our Table 2 draws out the contrast between the Phillips-Popper modified essentialism (a traditional realism) and pragmatic realism.

Table 1. Comparison of the Phillips-Popper View and a Pragmatic Realist View

	The Phillips-Popper View	The Pragmatic Realist View
Concepts, theories, conjectures	The important ones are created.	The important ones are created.
Epistemic criteria (e.g., probability)	These are socially constructed.	These are social-historical constructions.
Science	Science is "progressive" and objective.	Science is not "progressive"; still, it is epistemically and ontologically objective.
Real entities and (law-like) structures (in the physical realm)	*Real* entities and structures have ready-made essences (inherent structures) independent of human inquiry.	*Real* entities and structures — at best posits always at risk — are in a sense constructed.
Rationality	Rationality is limited to deductive logic.	The styles and norms are constructed (e.g., probability).

Table 1 (*cont.*)

	The Phillips-Popper View	The Pragmatic Realist View
Theory of truth	It accepts the *extensionality* and *bivalence* of Alfred Tarski's conception as required for inquiry; it accepts the correspondence (mirror) theory.	Extensional logic and bivalence are not required a priori for the human sciences; it is relatively implausible that they *fit* the domain; this view adopts the *mapping* account of truth.
Persons (agents)	Popper defended a methodological individualism but never developed a theory of institutions.[15]	Persons are *constituted* by the preformative cultural traditions (practices).

Table 2. Popper's Modified Essentialism versus Pragmatic Realism

	The Popperian View ("modified essentialism")[16]	The Pragmatic Realist View
Feature 1	There is a physical realm of the universe that exists independently of and predates human inquiry.	It is a posit of human inquiry that there is a physical realm of the universe that exists independently of and predates human inquiry.
Feature 2	The physical realm consists of a fixed, invariant (basic) set of real objects, properties, and (nomic) relations. Popper holds that we can never "describe, by our universal laws, the ultimate essence of the world"; nevertheless, he is a "metaphysical realist" and an "epistemological optimist," for the "verisimilitude" of our theories can increase.[18]	What the world is like is a question that only arises within a (man-made) conceptual-theoretical framework. There is no a priori reason for thinking that there is a uniquely adequate conceptual framework; it is likely that there is more than one. Science does not require nomic invariances; human inquirers are free, epistemic agents.

EDUCATIONAL ISSUES FROM THE PRAGMATIC REALIST VIEWPOINT

Our purposes have been to expand Phillips's framework and explicate the plausible pragmatic realism of Catherine Elgin. What are some of the educational implications of a pragmatic realist view?

Suppose that one of the goals of education is to help students acquire knowledge. In a revised version of Bloom's taxonomy, Lorin Anderson and David

Krathwohl (among others) have, yet again, taken knowing to be mere recall.[19] Indeed, almost all state departments of education have put in place assessment programs that treat student knowledge as mere recall. Since we stand by the traditional philosophical rendering of the term "knowledge" (roughly, "justified true belief"), we find it rather difficult to carry on a critical discourse with educators and teachers (who also tend to take knowledge to be mere recall). The traditional realist and the pragmatic realist should join forces here to help stop the corruption of viable educational terms. Yet if one is a postmodernist who rejects the correspondence theory of truth, then one will reject the traditional realist. Here the pragmatic realist can offer the sensible postmodernist a position that rejects the correspondence theory while still developing a useful theory of truth, the mapping account, which can allow for more than one true conjecture in a domain, but which can also explain and justify why several conjectures are false. Pragmatic realism can offer a plausible view in contrast to the wildly implausible idealisms (or subjectivisms) so widespread today.

Assume that an adequate approach in educational research ought to have a plausible ontology, epistemology, and theory of truth. If one turns to educational research, then the surprise is that the major thinkers have no place for, nor any understanding of, the virtues of pragmatic realism. A few examples will have to suffice here. In a book that some claim is the most frequently cited reference work in education PhD programs, Michael Patton basically draws a contrast between traditional realism (which he claims holds the correspondence theory of truth) and Egon Guba and Yvonna Lincoln's "social constructivism."[20] Although, like Elgin, Guba and Lincoln call their position "social constructivism," the two approaches are quite distinct. Patton at times seems happy to accept Guba and Lincoln's theory of truth, which contends that truth is what some group holds to be true. Neither Patton nor Guba and Lincoln seem to have any idea that such a group-epistemic reductionism is incoherent and self-defeating.

Patton himself, a very sound and practical educational evaluator, is quite troubled by all the talk about rejecting realism (with its correspondence theory of truth). So he comforts himself with Thomas Schwandt's claim that nowadays we all are realists.[21] But this claim is indefensible, if only because it fails to distinguish between the two forms of realism: traditional realism and pragmatic realism. Once such a distinction is drawn, then it is false or misleading to assert that we are all realists. At any rate, we offer "pragmatic realism" to such thinkers as Patton and Schwandt in order to help them find a plausible and viable research framework.

More can and needs to be said here, but we hope to have given some good reasons for thinking that (the reinvented) pragmatic realism might offer a new and plausible "constructivist" approach for educators in their attempt to get clear about a viable conception of knowledge.

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1. D.C. Phillips, "The Good, the Bad, and the Ugly: The Many Faces of Constructivism," *Educational Researcher* 24, no. 7 (1995): 5–12. This work will be cited as *GBU* in the text for all subsequent references. See also D.C. Phillips, "An Opinionated Account of the Constructivist Landscape," in *Constructivism in Education: Ninety-Ninth Yearbook of the National Society for the Study of Education*, ed. D.C. Phillips (Chicago: National Society for the Study of Education, 2000), 1–16.

2. For their mature views on pragmatism, see Richard Rorty, *Philosophical Papers*, vol. 3, *Truth and Progress* (Cambridge: Cambridge University Press, 1998); and Hilary Putnam, *Words and Life*, ed. James Conant (Cambridge, Mass.: Harvard University Press, 1994). For a critical review of these developments, see Joseph Margolis, *Reinventing Pragmatism* (Ithaca, N.Y.: Cornell University Press, 2003). Margolis is also a pragmatic realist.

3. See Israel Scheffler, "Introduction," in *Inquiries: Philosophical Studies of Language, Science, and Learning* (Indianapolis, Ind.: Hackett Publishing, 1983), where he first develops his "pluralism." See also Israel Scheffler, "Part VI: Symbol and Reality" in *Symbolic Worlds* (Cambridge: Cambridge University Press, 1997); and Israel Scheffler, "A Plea for Pluralism," *Erkenntnis* 52 (2000): 161–173. See Catherine Z. Elgin, "The Merits of Equilibrium," in *Considered Judgment* (Princeton: Princeton University Press, 1996), 101–145; and Catherine Z. Elgin, *Between the Absolute and the Arbitrary* (Ithaca, N.Y.: Cornell University Press, 1997). Elgin's essay "The Merits of Equilibrium" will be cited as *ME* in the text for all subsequent references.

4. See, for example, Noam Chomsky, who attributes a *universal* formal structure of language to humans, and J.A. Fodor, who attributes a *universal* set of "basic" concepts to persons. These thinkers oppose all forms of illicit privilege, yet they think that the resources that remain can support *universal truths*. Noam Chomsky, *Rules and Representations* (New York: Columbia University Press, 1980); and J.A. Fodor, *Representations* (Cambridge, Mass.: MIT Press, 1981).

5. This is our terminology.

6. We focus on science. How this dimension works for mathematics is a question for another day.

7. See Ian Hacking, "Language, Truth and Reason," in *Rationality and Relativism*, eds. M. Hollis and S. Lukes (Cambridge, Mass.: MIT Press, 1982), 48–66; Ian Hacking, *The Emergence of Probability* (Cambridge: Cambridge University Press, 1975); and Ian Hacking, *The Social Construction of What?* (Cambridge, Mass.: Harvard University Press, 1999). In this last work, Hacking argues that nature does not have an "inherent" structure (see 80–84, 99).

8. Karl Popper, "The Aims of Science," in *Objective Knowledge: An Evolutionary Approach* (Oxford: Clarendon Press, 1972), 196.

9. Karl Popper, *Realism and the Aims of Science*, ed. W.W. Bartley III (Totowa, N.J.: Rowman and Littlefield, 1983), 58 (emphasis added).

10. Popper may have held that real structures are *required* to make science sensible. Others have argued how such a claim is indefensible; see Nancy Cartwright, *How the Laws of Nature Lie* (Oxford: Clarendon Press, 1983), and Bas C. van Fraassen, *Laws and Symmetry* (Oxford: Clarendon Press, 1989).

11. Michel Foucault, Hans-Georg Gadamer, and, in his later work, Ludwig Wittgenstein share this theme.

12. The key term is "*lebensformen*," or *forms of life*. See Ludwig Wittgenstein, *On Certainty*, ed. G.E.M. Anscombe and G.H. von Wright (Oxford: Basil Blackwell, 1969). Wittgenstein had, of course, no interest in history.

13. Scheffler has written: "Such connectivity of theory and practice, affirmed by pragmatism, rings true to me and inclines me toward that philosophy — in its broad outlines at least, and despite my criticisms elsewhere of its specific formulations." See Scheffler, *Inquiries*, xiii. For more on Elgin's position, see Elgin, "The Merits of Equilibrium," and "Postmodernism, Pluralism, and Pragmatism," in *Between the Absolute and the Arbitrary*, 192–199. It is beyond the scope of this essay to consider the dispute between Nelson Goodman and Israel Scheffler about whether, underlying diverse world versions, there is *one world* or many. See, for example, Scheffler, "Part VI: Symbol and Reality."

14. See also Elgin, *Between the Absolute and the Arbitrary*, 7.

15. Popper holds that "rational human behaviour…is something *intermediate* in character between perfect chance and perfect determinism — something intermediate between perfect clouds and perfect

clocks." Karl Popper, "Of Clouds and Clocks," in *Objective Knowledge*, 228. See also his "On the Theory of the Objective Mind," in *Objective Knowledge*, 191–205.

16. See Popper, "The Aims of Science."

17. See Elgin, "The Merits of Equilibrium"; Scheffler, "Part VI: Symbol and Reality"; Rorty, *Truth and Progress*; and Putnam, *Words and Life*.

18. See Popper "The Aims of Science." For a critical review of Popper's early work, see Clifford A. Hooker, "Philosophy and Meta-Philosophy: Empiricism, Popperianism, and Realism," in *A Realistic Theory of Science* (Albany: SUNY Press, 1987), 61–107; for a critical review of Popper's later work, see Clifford A. Hooker, "Reason and the Regulation of Decision: Popper's Evolutionary Epistemology," in *Reason, Regulation and Realism* (Albany: SUNY Press, 1995), 113–176. As Hooker notes, his own "evolutionary, naturalist, realist meta-philosophy" is a good meta-philosophy for any *pragmatic realism*.

19. Lorin W. Anderson and David R. Krathwohl, *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (New York: Longman, 2001).

20. See Michael J. Patton, *Qualitative Research and Evaluation Methods*, 3d ed. (Thousand Oaks, Calif.: Sage, 2002); and Egon Guba and Yvonna Lincoln, *Fourth Generation Evaluation* (Newbury Park, Calif.: Sage, 1989).

21. Thomas A. Schwandt, "Three Epistemological Stances for Qualitative Inquiry: Interpretivism, Hermeneutics, and Social Constructivism," in *Handbook of Qualitative Research*, 2d ed., eds. Norman K. Denzin and Yvonna Lincoln (Thousand Oaks, Calif.: Sage, 2000), 189–214. Schwandt's use of the term "social constructivism" is not closely related to Elgin's use of the term.