Epistemic and Rhetorical Remedies for the Evolution/ Intelligent Design Predicament

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Introduction

By aggressively promoting its explanation of biological origins, Intelligent Design (ID) has generated hot debates over the place of religion and science in public education. These debates have led to challenges of school curricula and policies, forcing the public to investigate philosophical questions such as "What is science?" and "What is the difference between a theory and a fact?" Events have also raised public questions as to whether science has normative agendas implicit in its probabilistic, fallibilistic, and naturalistic methods. Questions have been raised over the normativity of scientific explanations employing randomness, probability, and material causation.

Several years ago, I investigated why the public has such tolerance for what is clearly a re-tooled creationist attack upon science.[1] I was concerned that contemporary science be able to defend its epistemology in language amenable to public understanding. But as I uncovered the epistemological dimension of the conflict, it became clear that there was another important dimension: *the normative*. How could this side of the conflict be mitigated? Here I review both the epistemological and normative conflicts and sketch practical suggestions to ameliorate them.

We have been here before. In 1924 John Dewey expressed surprise that a generation accustomed to scientific and technological progress could also foment an attack on evolution.

> Many of us imagined that a serious attack upon evolutionary views with a revival of pre-Darwinian biology was as improbable as an attack upon the astronomy of Galileo, or a wide-spread and influential campaign in behalf of the Ptolemaic system....Nevertheless, the issue is for the public actual and vital today, in spite of the elapse of a generation in which we prided ourselves...upon the advance of the scientific spirit, and the accommodation of the public mind to the conclusions of scientific inquiries.[2]

Generating this controversy was a public which had been empowered politi-

cally, yet inadequately educated in the scientific method:

> The public...has taken an active part; but the conditions which have enabled the public actively to intervene have failed in providing an education which would enable the public to discriminate...between opinions untouched by scientific method and attitude and the weight of evidence.[3]

Today, public attitudes toward evolution seem little better. Year after year, opinion polls show little change in the public's understanding or acceptance of evolutionary biology. Despite eighty-plus years of scientific and technological advances, Americans are still engaging in pitched battles over the teaching of evolution. Philosophers must investigate the philosophical conditions implied by these facts and the role philosophy can play in addressing them.

I. Epistemological Dimensions

The ID View

The epistemological dimensions of the debate can be summarized briefly. Evolutionary biologists (and educators) face what is arguably just the latest varietal of creationism—usually called "intelligent design" or "intelligent design creationism." Unlike most other creationisms, ID accepts much of evolutionary biology but insists that evolutionary biology fails to adequately explain certain biological structures and processes (labeled "irreducibly" or "specifiedly" complex by ID'ers).[4] They complain that the explanatory tools of evolutionary theory (e.g. random mutation, incremental natural selection) are inadequate to their explanandum. Much as wind, stones, and waves could not account for Paley's watch on the seashore, there are biological phenomena so complex that only an "intelligent designer" can satisfy the requirements of explanation.

While this epistemological claim is controversial, the ID movement goes further, insisting that the "intelligent designer" hypothesis should be taught as *part of the scientific theory*. ID'ers view neglect of their hypothesis as proof of scientists' dogmatic allegiance to *natural* explanations.

The Scientists' View

Scientists insist that theories be testable, revisable, and falsifiable; such prerequisites entail that ID claims cannot be seriously considered since an "intelligent designer" cannot be evaluated scientifically. What data, for example, would prove the existence of a Designer? What would be the

method, measure, or experimental test? Further, what would prevent the multiplication of entities—a Designer for *each and every phenomenon that is too complex for science to explain?* Surely, scientists rebut, no theory of the world should be as complex as the world itself!

The scientific establishment's refusal to accept or teach ID prompts some to demean scientists as godless materialists. Aware that this stance is perceived by some as hostility toward religion, Dr. Eugenie C. Scott, Executive Director of the National Center for Science Education, has argued that science is committed to *methodological* naturalism—explanation by natural causes like matter and energy—which insists on observable and measurable results which produce reliable predictions. This differs from *philosophical* naturalism—roughly the claim that natural law is *all* that exists—a view to which scientists are *not* committed by their identity as scientists. Toward religion, Scott comments, "science in and of itself is neutral....because supernatural forces are outside of what it can consider as causation."[5]

A Philosophical Disagreement

This conflict is philosophical, and much arises from differences over the epistemology central to scientific practice. While there are parallels with earlier debates between religion and science, something here is different. ID may draw upon religious convictions to attack, as atheistic, scientific materialism and mechanism; but the form this attack takes is distinctly epistemological insofar as it employs evolutionary theory as a wedge for revising the basic rules demarcating scientific knowledge and method from other ways of describing experience. This happens, for example, when ID theory violates methodological naturalism while still demanding that the result be called "science." Let me explain.

When ID theory proposes a hypothesis like an "Intelligent Designer," it proffers an idea unlike every other scientific hypothesis because it cannot be tested or revised. When ID insists scientists include this oxymoronic hypothesis, ID reserves for its proposition a kind of "free rider" status because the proposition is exempted from the self-scrutiny central to the scientific method.[6]

In essence, an "intelligent designer" is a posit, not a hypothesis. It is an item of faith, not a scientific explanation. Interestingly, this allows us to predict the behavior of ID theorists: since faith items are intrinsically immune to proof or disproof, we can know that when ID'ers encounter evidence implying "not-Designer" (e.g. randomness or chaos) they will reject it outright. As John Capps puts it, the ID approach to hypothesis "at

the very least...is unable to make a useful contribution to inquiry; at worst, it is diametrically opposed to inquiry in the first place."[7]

At bottom, the question is whether science can incorporate a divine explanatory cause and still be "science." ID's details make little difference; its theorists can stipulate most of evolutionary biology, but so long as they insist science accept supernaturalistic causes, they violate science's deepest methodological commitments. For this reason—not because scientists are atheists or secular bigots—science must exclude ID from serious consideration and, more important, from science education.[8]

Facts, Values, Warrant, and Truth

Obviously, I believe that ID is not science. Nevertheless, there is still unresolved public antagonism regarding the conflict between ID'ers and their scientific/pedagogical opponents. Politically, it is clear that scientists' condemnation of ID is inadequate to settle the epistemological or normative situations. In philosophical response, I will first describe a way of looking at truth that may eliminate one source of conflict; second, I will briefly describe two strategies to loosen the normative deadlock.

Warrant, not Truth

When inquiry is seen as converging, even asymptotically, upon "the answer," it is implied that the goal is something definitive and final: the "truth." This truth is, by its nature, self sufficient. Insofar as science and religion see knowing under this rubric, they are bound to find mutual antagonists in one another.

Another way to describe inquiry (and its products) is contextually and instrumentally. On Dewey's model, searches for knowledge seek *warrant* and *satisfaction*—not truth—as their goals. Such instrumental inquiry aims, like traditional science and religion, for *durable* propositions; this is not an epistemology of expedience or convenience. What is special about warrant, in contrast to truth, is that it is a concept meant to reflect the fact that specific inquiries arise as responses to situated needs; these needs, as components of the situation, already carry within them some of the specific criteria necessary to satisfy the demands of inquiry and enable action. (Facts and values are co-relational ingredients of inquiry and, so, do not have to be forced back together at a much later stage.) This is relevant because science and religion are in conflict, in part, because of the separation of fact and value. For example, evolution appears to exclude normative questions from its account of the origins of life; as a response, ID attempts to re-insert value

by positing the "Designer hypothesis."

Instrumentalist inquiry, then, does not separate fact and value. No problem is ever purely epistemic—we reason and act in an arena of values. Since it is our need to act in the world that originates theories of *all* kinds, instrumentalism argues that the warrant we seek for propositions is always tested, eventually, by an action we will take *in the world* and *with real consequences*. Whether we are warranting a proposition about the birth of a star or a savior, the warrant's test lies in future experiments. In short, warrant already includes the normative and factual aspects.[9] Instrumentalist knowledge does not aim at truth; it seeks to warrant propositions that resolve the problematic situation which led to the need for inquiry *in the first place*. The ultimate validation of a claim or proposition's warrant are eventuating actions and operations relevant to the problem at hand.

Instrumentalism and the Dogmatisms of Science

If instrumentalism argues that inquiry can produce no ultimate answers, then the message of epistemological moderation to religion is obvious: knowledge is provisional. Less obvious, perhaps, is that instrumentalism carries the same message for science in slightly different language.

Science's conceit is that its general enterprise is to discover the natural world as it "really is." Instrumentalists point out, often using the history of science itself, that scientific inquiry is like all inquiry: an organic process growing from (and returning to) living problems. In practice, science dynamically interacts with a changing and value-laden world. This is one kind of interaction among many, though science's power to predict and control creates widespread misimpressions about the magisterial and final nature of its judgments. If scientists want to correct this, they must vigilantly remind themselves that their conclusions about things and events can carry no imprimatur of final natural kinds or essential traits.

Besides the tendency to conflate experimental science with metaphysical realism, scientists' greatest hubristic temptation lies in the worship of methods and concepts. Dewey calls the conceptual resources with the most enduring use and value for science "directing conceptions." ("Death," "race," "gender," and "mass" are all examples of directing conceptions.) For public and scientist alike, these concepts seem ultimate; yet examining the actual inquiries generating (and revising) these concepts will show nothing ultimate here at all. In actual practice, concepts are as aggressively reevaluated and revised as are microscopes, drills, and all the other physical tools of experimental science. This actual and ongoing reconstruction of

science's conceptual instruments should remind scientists not to offer up scientific "directing conceptions" dogmatically—not least because such dogmatism renders useful "directing conceptions" inert. In other words, dogmatism deprives concepts of their capacity to be revised so they may remain available to function in new inquiries. About this, Dewey writes,

> Directing conceptions tend to be taken for granted after they have once come into general currency. In consequence they either remain implicit or unstated, or else are propositionally formulated in a way which is static instead of functional. Failure to examine the conceptual structures and frames of reference which are unconsciously implicated in even the seemingly most innocent factual inquiries is the greatest single defect that can be found in any field of inquiry. Even in physical matters, after a certain conceptual frame of reference has once become habitual, it tends to become finally obstructive with reference to new lines of investigation.[10]

Taking stock, then, of the epistemological dimension of the debate, it is important for anyone seeking to ameliorate the conflict between science and ID to make the following things clear:

> (1) ID proponents must be made to recognize that their proposal of a Designer is not innocuous and its rejection by scientists is done neither from caprice nor discrimination; scientists reject the proposal because it constitutes a dramatic assault upon science's core epistemic values.

> (2) Scientists must recognize their own dogmatic tendencies, particularly when they forget that deeply corroborated and experimentally verified scientific "truths" are not secular gospel but fallible, warranted pivots for action which may someday be revised or overturned entirely. Scientists must grasp that scientific dogmatism, while secular, can be as injurious to inquiry as religious dogmatism.

> (3) Instrumentalism proposes a conception of inquiry and truth not premised upon a radical separation of fact and value. Instrumentalism affirms the legitimate assumption of normative elements in scientific inquiry while still retaining the scientists' insistence upon experimental testing and empirical verification (of a non-positivistic kind).

II. Normative Dimensions

Moving Beyond Epistemology

It is tempting to believe the impasse between scientific and religious

disputants could be resolved by carefully reiterating the assumptions and operating principles of the scientific method. As philosophers, our professional habit is to pronounce that the ID-Evolution clash just needs a little more "clarity." Such pronouncements are either simplistic, hubristic, or both. For while clarity occasionally harmonizes diverse perspectives at the level of philosophical theory, this clash is happening at the level of practice, too. This is not a Scholastic contest over abstract concepts, but one involving the goals and viewpoints embedded in the concepts. The problem is that for both ID and evolutionary biology, the goals and viewpoints thought most important are *only achievable given the exclusion of the other's goals and viewpoints*. This impasse is full-blown.

Total Attitude

Given that mitigation of ID/Evolution conflict is, at best, stalled epistemically, it becomes sensible to look beyond just epistemic factors. Larger common ground must be sought. One way of establish such "common ground" is to develop what John Dewey called a philosophical "total attitude."

> [T]he demand for a "total" attitude arises because there is the need of integration in action of the conflicting various interests in life.... [W]hen the scientific interest conflicts with, say, the religious, or the economic with the scientific or aesthetic, or when the conservative concern for order is at odds with the progressive interest in freedom, or when institutionalism clashes with individuality, there is a stimulus to discover some more comprehensive point of view from which the divergencies may be brought together, and consistency or continuity of experience recovered.[11]

The goal sought in a "total attitude" is perspectival; it is a standpoint in which philosophical accounts of "knowledge," "truth" and "scientific method" are important but not sufficient for resolving social problems. This is because a total attitude arises from—and returns to—lived experience, which is suffused with normativity.

Skepticism about achieving a total attitude in the ID-Evolution clash should be expected. Both sides have deeply angered (and in some instances, insulted) the other; in addition, the frames employed by both sides seem, prima facie, to be irreconcilably at odds. In Dewey's view, however, hope is justified. Even among the most disparate groups, he writes, in "certain fundamental respects the same predicaments of life recur."[12] The commonality of these predicaments can be searched for, highlighted, and used rhetorically to provide the basis for a practical, educative perspective—a "total attitude" which can provide new ground for the construction of new

bonds of community.

Two Practical Steps

I will conclude by briefly proposing two practical steps which could contribute to the creation of such a "total attitude."

(1) One step toward a total attitude would renew emphases upon educational approaches which are self consciously imaginative and hypothetical. When education trains children to be imaginative and experimental, they learn consciously to embrace those habits of inquiry which are both useful *and* fallible. The process of inquiry itself is validated and understood as a quest for both solutions *and* better questions. Such training facilitates total attitude because it is, by inception, exclusionary of dogmatisms. In contrast, pedagogies placing a premium upon memorization and authority ("outcomes") foster isolation and exclusivity rather than communication and collaborative experiment. Such regimentation contributes to greater social dis-association and factionalization; an "anti-scientific" temper is just one resulting dysfunction.

It is worth pointing out that public's failure to think in these ways (to think "scientifically" in its fullest sense) cannot simply be blamed upon dogmatic religious educators. In Dewey's view, the cultural tendency to fix belief with anti-empirical methods comes from more ubiquitous sources:

> There is a considerable class of influential persons, enlightened and liberal in technical, scientific and religious matters, who are only too ready to make use of appeal to authority, prejudice, emotion and ignorance to serve their purposes in political and economic affairs....[Then] they...sit back in amazed sorrow when this same habit of mind displays itself violently with regard, say, ...to the animal origin of man.[13]

We have met the enemy, and he is us; while scientists may presume that religious dogmatists are fomenting revolts against evolution, other causes are at play. Blame for public incompetence to think inquirentially must be shared with *any* educated individual whose personal or professional proclivity is to take argumentative short-cuts for selfish gain. Responsible inquiry must be modeled—it takes a village—and so the inculcation of the public's scientific temperament requires reform of how citizens persuade, govern, and educate their children.

(2) A second step toward creating total attitude would involve new efforts to overcome factionalization and parochialism by building community—or at least "communal perspectives" that aim to transcend periodic conflicts (such as ID/evolutionary science). Forging community requires establishing

conjoint activities with objectives that are consciously communicated and shared. In a recent example, pro-choice and pro-life groups bridged some differences by agreeing that teen pregnancy is a problem. Collaborating to address that problem engendered the formulation of new, shared ideals—and a larger perspective—that helped attenuate other sources of acrimony.

This step is not the old bromide of "inclusion" or "toleration." Groups in conflict must engage in ways that include sympathetic appreciation of the other's point of view. They must strive for the kind of "objectivity" formed from "an other's perspective" rather than from "God's eye point of view." This perspectivist goal, like the instrumentalist's "warrant," seamlessly blends the normative and the epistemic elements and provides, perhaps, a strategy which can heal contemporary divides.

Notes

[1] Hildebrand, David, "Does Every Theory Deserve A Hearing? Evolution, Creationism, and the Limits of Democratic Inquiry." *Southern Journal of Philosophy* XLIV: June 2006, pp. 217-236.

[2] Dewey, John, "Science, Belief and the Public" (MW15:48). Note: standard references to John Dewey's work are to the critical (print) edition, *The Collected Works of John Dewey, 1882-1953*, edited by Jo Ann Boydston (Carbondale: Southern Illinois University Press, 1969-1991), published in three series as *The Early Works* (EW), *The Middle Works* (MW) and *The Later Works* (LW). "LW5:270," for example, refers to *The Later Works*, volume 5, page 270.

[3] MW15:49

[4] Here, Michael Behe is the ID theorist I have in mind is. See *Darwin's Black Box* (New York: Free Press, 1996).

[5] Scott, Eugenie, "The Creation/Evolution Continuum," National Center for Science Education: Defending the Teaching of Evolution in Public Schools, 2000, <http://www.ncseweb.org/resources/articles/1593_the_creationevolution_continu_12_7_2000.asp> (23 June 2005)

[6] As John Capps puts it "Not only does [scientific] methodological naturalism account for the importance of observability and hence empirical testing, but it is itself a testable and revisable hypothesis." See Capps' "Achieving Pluralism: Why AIDS Activists Differ from Creationists." In *Dewey's Logical Theory: New Studies and Interpretations*. Edited by F. Thomas Burke, D. Micah Hester, and Robert B. Talisse. With a Foreword by Larry A. Hickman. (Nashville: Vanderbilt University Press, 2002), 256.

[7] Capps, "Achieving Pluralism," 257.

[8] See the AAAS's October 18, 2002 statement, "Resolution on Intelligent Design Theory." Published in *News Archives*, "AAAS Board Resolution on Intelligent Design Theory," November 6, 2002. URL: http://www.aaas.org/news/

releases/2002/1106id2.shtml (Accessed 10 January 2008).

[9] For example, if I say that I was "warranted" in pulling the plug on the sparking toaster we are not just referring to some "truth property" assuring us that this will keep our toast un-burnt. We are referring to a whole complex situation with certain factual details and certain normative stakes already embedded—the "warrant" of the proposition behind our action is indexed to that whole situation. On the other hand, if we talk about "pulling the plug" on a life support machine, we understand that this is a radically different situation, and so the level of warrant needs to be commensurate with the facts *and values* involved.

[10] LW12:501

[11] MW9:336

[12] MW9:337

[13] MW15:50