



Dialogue: Reply

Legitimacy and Scope of "Naturalism" in Science

Thorson Replies ...

Theological concerns were raised about my claim that God's transcendence with respect to creation means we cannot "catch him at it" ...

The person who crawls into "no-man's-land" contested by warring parties can expect to be fired upon, and my two-part essay on 'naturalism' is such a venture. Theological concerns were raised about my claim that God's transcendence with respect to creation means we cannot "catch him at it" in the routine, mundane affairs of the natural world with which science deals. Other responses were concerned with science and philosophy of science. A third class of respondents defends the "intelligent design" hypothesis. Certainly, my essay argues that "intelligent design" (ID) as it stands is not "naturalistic" as I argue legitimate science must be, and it offers a different proposal for thinking about biology, which *is* "naturalistic." Defenders of "ID," therefore, are bound to disagree with my arguments. However, a good number of respondents find my arguments against "intelligent design" in *science* clear and convincing.

I am particularly grateful to Thaddeus Trenn for his concise and careful summary of my most important conclusions, which he has restated and in some cases amplified. I hope Trenn will pursue some of the "deep structure" questions further. I am glad he did not focus on possible weaknesses of my arguments, but saw the overall strength and integrity of the position advanced.

Loren Haarsma and Peter Vibert understand my main intentions correctly and their endorsement of the general argument is encouraging. Haarsma thinks I might agree with Michael Behe that "systems with interlocking complexity could not have evolved 'naturalistically'" (p. 29). This is not the case. Rather, I argue that thinking in terms of a logic of function may offer better understanding of such organizational features.

Two earlier articles that I wrote on related topics may help to clear up the theological misunderstandings:

(1) "Fingerprinting God? Divine Agency and 'Intelligent Design,'" in *CRUX*, a quarterly journal published by Regent College, Vancouver, BC (*CRUX*, XXXVI, no. 2 [June 2000]: 2-9). There I argued conclusions like those presented here but introduced the subject by *first* appealing to theological concerns beyond science. In particular, I stressed that biblical faith entails belief that God sometimes "intervenes" in the course of otherwise "natural" events. In such cases, reasonable judgment concludes that divine agency has been shown openly (and, on God's part, *deliberately*). Miracles (including answered prayer, in memorable cases at least) are such "interventions" (and are not amenable to scientific inquiry); but the regular phenomena and order of biology (or physics) are "mundane" or "natural," and "intervention" is not a concept appropriate to *scientific* explanation. Those who think I argue that divine agency can *never* be recognized/identified in human experience should read the *CRUX* article.

(2) "Constructing a Legitimate Natural Theology," essay #18 in J. I. Packer and Loren Wilkinson, eds., *Alive to God: Studies in Spirituality* (Regent College 1992; Downers Grove, IL: InterVarsity Press, [1992], 225-38). In this essay, I argue that natural theology is legitimate, but should be distinguished from natural science. It may persuade some critics that I affirm validity of *theological* reflections on creation.

Haarsma rightly points out that extraordinary features of the universe emerging from scientific investigation might not have "naturalistic" explanations in *every* case; instead, they might *correctly* point us beyond the limited framework of scientific under-

standing. (A physicist thinks immediately of the remarkable “fine-tuning” aspects of the universe in the standard cosmological model, or “Big Bang theory.”) Of course, scientific judgment is relevant, since resolutions based on further inquiry may be possible. My argument in the essay is consistent with Haarsma’s point. Some features of the universe which science describes do not have further *scientific* explanation; we must say as Newton did: *hypotheses non fingo*—I do not make hypotheses.

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I have certainly not argued in this essay, nor would I claim, that the doctrine of divine transcendence precludes either (1) a valid knowledge of God as a rationally convincing fact of human experience, or (2) the reasonable, *objective* conclusion of Christian thought *about creation*, that it is the purposed handiwork and design of God. However, such knowledge is *not* accessible on the “naturalistic” terms of reference for science. Some respondents have unduly *extrapolated* from claims regarding what “naturalism” means, to an existentialist or neo-orthodox interpretation of the theology behind such claims—e.g., Thomas Finger mistakenly infers that “theological knowledge, for Thorson, deals (only) with persons and relationships” (p. 32). I fully agree with Finger’s statement of important orthodox elements in Barth’s idea of transcendence. However, Finger has interpreted a “soft” claim about implications of transcendence in relation to mundane knowledge of creation, as a very “hard” one, which I do not hold. What I actually argued is: In relation particularly to scientific inquiry, transcendence means that God and God’s agency in creation cannot be subjected to scrutiny by the *unrepentant and autonomous* rational powers of humans. To those analytical/synthetic powers, God’s presence and agency within creation remain “ineluctably mysterious” apart from revelation received *and* believed. The terms of reference for science—particularly that its truth-claims are universally accessible to all persons, regardless of their condition—deal only with that kind of scrutiny, and the knowledge of which it is capable. Michael B. Foster’s arguments make this case very clearly (p. 11, note 23). Austin Farrer’s specific philosophical case against the possibility that the “scientist” of his dialogue (p. 11, note 22) could ever systematically analyze the “metaphysical joint”

where divine agency affects things is pretty airtight—and I would happily argue that point with James Sire.

A relevant point here is that I think in the framework of an epistemology of personal knowledge, claiming faith or “responsible commitment” by persons is entailed in holding *all* knowledge. Michael Polanyi made pioneering contributions toward this epistemology in *Personal Knowledge* (1958). Implications for thinking about faith, theology, and theological knowledge have been discussed by many people, notably by Lesslie Newbigin in some well-known works in the 1990s. I do *not* accept the rationalist position in epistemology, metaphysics, and theology still uncritically maintained by many evangelicals, and validly criticized by T. F. Torrance (in *Reality and Evangelical Theology*) and more recently by Mark Noll (in *The Scandal of the Evangelical Mind*). However, my position neither makes me an existentialist in respect to theology, nor implies that valid inferences about God’s work cannot be drawn by people from created things.

[I may comment parenthetically here on Richard Bowman’s remarks on the philosophy of science and the unspecified/unspecifiable nature and future of the enterprise. Since I share Polanyi’s view of science, I neither conceive it as a closed system of laws and principles nor argue that in this essay (cf. my essays on Polanyi in *PSCF* in the 1980s).]

I thank Willem Drees for endorsing my aim to restore a right view of “naturalism” in science. I agree that the history of science is more complex than my essay suggests, and that insights based on secular readings of the “Book of Nature” have helped to reshape later Christian thinking about creation (and some classical theological problems). However, those wider issues were not my focus. I agree with Drees that real humility is a quality often lacking as much in theological tradition as in modern secular culture. However, I do not share Drees’ agenda for a “bottom-up” approach to religion starting from scientific understanding. While I “take science seriously,” I understand Christian faith and the knowledge it claims to offer to be based on *revelation* centered in the person of Jesus Christ. In theology, that implies foundational priority for Scripture, given careful exegesis—and a certain priority for a *theological and spiritual understanding of creation* such revelation privileges. (That is what I think the biblical creation accounts are mostly about.)

Willem Drees and biophysicist Catherine Crouch both thought my criticism of “extreme Darwinism” unfair. I *was* speaking of professionals, not just scientism. Many great scientists communicate a materialist belief as well as valid scientific knowledge in their writing. Among them are G. Gaylord Simpson, Richard Lewontin, Jacques Monod, Stephen J. Gould, Ernst Mayer, and, among the physicists, Steven Weinberg. As a young scientist, I did not believe the great achievers and thinkers in our enterprise could be



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uncritical of their own philosophical assumptions; but in time I realized that all alike based their lives on presuppositions of some kind, in many cases much less carefully examined than my own—and even sometimes were arrogantly sure that the world in which they and their thoughts counted for so much was the only world there is. Settled views of influential people can shape a limiting viewpoint and underlying mindset which tacitly influences/controls the scientific community's norms. That is not so much a matter of outspoken or explicit dogma; rather, it is manifest in closed attitudes to the open creation in which we really live. Success in science (as in all human endeavors) tends to bring pride along with a selectively closed mind—both a collective and individual phenomenon.

Phillip Johnson has made a helpful distinction between a "weak" and a "strong" evolutionary hypothesis. The "weak" version is that variety and complexity of biological systems today have somehow resulted from biological descent according to principles of genetic inheritance with modification; all biological forms are then related on some phylogenetic tree. In the "strong" version, this plausible and fruitful working hypothesis turns into something quite different. Not only is the above the case, but in addition we know that the adequate *mechanism* to account for this is (a) chance mutation, (b) natural selection, and (c) incremental change over time; it remains only to work out the details. Item (c) is not in happy agreement with the fossil record, and Gould, for example, has other ideas. Proponents of the "strong" view insist on it as a working explanation *not* because it really is very convincing, but because *a priori* they do not choose to think outside the metaphysical world view adequate to physics—materialist, mechanist, and reductionist. Since God created the world, lots of other things and levels of organization besides physics are possible—and some of them can be explored by the organized common sense and experienced judgment that really lies behind science.

I agree that existence of a functional logic embodied in living systems does not *necessarily* show that a "purely physicalist account" of such logic cannot be given. However, the task is formidable: to show how an organizing logic of purpose and

function is logically derivable from pure mechanical causality. I plead (as Polanyi and Elsasser did) for an attitude to the problem which leaves the range of possible scientific explanations more open than many evolutionary biologists are willing to do. I stand by the claim that the evolutionary biology community is heavily biased *a priori* in favor of purely physical, mechanistic accounts as the only "real" or "objective" explanations for what we see. To me this bias seems most evident in the appeal of most prominent evolutionary theorists to chance mutation (i.e., the *null hypothesis*) operating at a purely mechanical level as essential to the "explanation." As a physicist, I have always considered that unless it is shown to be robustly justified by the inevitable (and therefore often relatively trivial) character of the results derived (e.g., as in statistical mechanics), invocation of the null hypothesis is really the admission of poverty in an explanatory paradigm.

Catherine Crouch and Gordon Mills, who argues for "ID," both wonder whether analogical arguments about the "explanation" of DNA/RNA are appropriate. The analogy has been widely used since the 1950s when the structure and chemistry was first worked out; I heard it as a Ph.D. student at Caltech. Crouch correctly says that the idea of a functional logic is not particularly new, but is alive and well in biological research. However, research biologists need to recognize *philosophical implications* of the fact that a logical organization working toward particular achievements really is not *physics*, although the biosystems embodying it can be given a parallel physical description, i.e., are also physical systems. I thought the analogy with the digital computer clarified that obvious point. Polanyi was the first to say all this long ago in *Personal Knowledge*. The dismissive attitude of far too many biologists, however, is displayed in Ernst Mayr's unfair description of Polanyi's ideas as "vitalism" (cf. p. 21, note 15).

Crouch wonders how thinking in terms of a functional logic would help address the problem of origins. My short answer is that I do not know—and did not intend any particular view. However, here is an argument a physicist will appreciate. We have been doing physics with a reasonable methodological framework for about 350 years, and

have not formed a half-decent theory of physical origins until the last few decades (I think the standard model qualifies). It is a reasonable inference that the problem of *biological* origins is probably too hard to tackle first. What is needed is learning to think in such terms about lots of less challenging and more accessible problems, as was done for centuries in physics within its proper paradigms.

Thomas Finger, Elva Miller, and James Sire comment on the metaphor of "Adam naming the animals" in Genesis 2:19ff as a theological paradigm for science, and William Hawk also raises issues related to it. I think the metaphor is apt; its picture of science contrasts with a rather different picture, drawn exclusively from Genesis 1, based on *imago Dei*, and giving primacy to reason as presumptively divine in its essence. Of course, the second account of creation is not unrelated to the first one; its perspective is complementary—from within creation. Some further comments may help resolve issues raised by Sire and others:

1. Genesis 2:19ff offers an *affirmative* theological basis for science. I presuppose that enterprises *not* implicit in the servant's mandate of Genesis 2:15 cannot be given theological legitimacy.
2. Sire depicts Adam's "creaturely" naming as informed and indeed sustained by an awareness of a divine Presence, figuratively "at his side"—a view in full harmony with mine. The text powerfully conveys divine interest in the human enterprise. My essay on natural theology stresses this sustaining role for *Christian* understanding in creative thinking about science, and note 9 on p. 21 mentions the remarkable insight of James Clerk Maxwell as an instance of just such faith-sustained creativity.
3. I affirmed "naturalism" in *science* on the ground first that Adam's names for creaturely things themselves are *appropriately* framed in *creaturely terms of reference*. This contrasts clearly with the idea long entrenched in medieval thinking about nature, and derived from traditional Christian readings of Aristotle, that "true" explanations for natural phenomena must ultimately be derived from *a priori* theological or rational principles, while explanatory paradigms framed from within the created order itself can at most "save the phenomena." As historical study shows, the rise of modern physical science depended on changing that evaluation.
4. Science is still a possible enterprise for *fallen* humanity, without resolving all the spiritual problems resulting from alienation from God, based on what theologians have called "common grace." The creative rational activity manifest in science is an exercise of gifts not totally ruined by sin.
5. However, such creaturely rational powers are limited; in particular, they are unable to "name" God or discern God's agency in creation on an *autonomous* basis. Such knowledge depends on revelation and entails personal reconciliation to God. The Pentateuch's consistent view that God cannot be "named" by autonomous reason assumes humanity's fallen condition; Foster's argument that limits on scientific knowledge arise from the requirement that it be accessible to all persons *in their present condition* has the same effect.
6. Sire speaks warmly of "Christian" scholarly enterprises distinct from the secular ones now carried on. He is on firm territory if he argues that for the social disciplines, the arts and letters, "naturalism" of the kind I advocate for science is evidently *not* appropriate, or is severely limiting; and, that fruitful development of these disciplines benefits from a Christian theological context openly affirmed. On the other hand, it is questionable how a "Christian" physics would differ from the physics we already have. On the contrary, I am convinced that in physics, a policy of "naturalism" has really been vital to its proper development—as Christian physical scientists well understand. Physics on the old naturalistic terms of reference familiar to us does not (so far) appear to be broken, and therefore does not need fixing. It is conspicuous that those who really know physical science well agree with this assessment (and this includes many proponents of "ID" in biology); Sire should consider the tacit implications of this fact for his argument. Perhaps the noetic power of sin has had as much influence on theological reasoning in some cases as it has had on secular scientists. Certainly, that is my view of the phony kind of science young-earth creationism has spawned.
7. I think of biology as a transitional area lying between physics and discourses dealing more directly with human life and thought, where "naturalism" as an appropriate/adequate framework is a viable possibility. I have opted for "naturalism" and against the introduction of a surrogate deity or his design as legitimate *biological* hypotheses, while agreeing that valid theological reflections can and should be made about biological findings. I see a serious credibility problem in demanding that biology be a privileged activity explicitly presupposing belief in a divine agent. Formulating a "naturalistic" alternative is a "soft" compromise; it permits an enterprise already found effective to some degree to continue on extended terms of reference *similar to but richer than* those proper to physics. After all, beetles are interesting objects of inquiry to all kinds of people, many who have no atheist axe to grind, although they do not know the Lord. The hypothesis that biology may have organizing principles described by a logic of achievement does entail some shift from a materialist world view toward richer understanding. I think it is a shift credible for the scientific community; and offers a context in which scientists who are Christians can use creative insight. On the other hand, it seems to me that many persons, who argue "intelligent



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design" as the proper resolution, opt in the end for a "Christian" biology privileged by explicitly theological presuppositions. This is particularly true if they are exclusively preoccupied with issues of biological *origins*; in that respect they are as unreasonably limited in their focus as old-style young-earth creationists.

I am not sure what Sire means by "methodological naturalism," which he thinks I have rejected. The "naturalism" argued is methodological, since it is adopted only for the enterprise of science, but its metaphysical options are richer. *Contra* Sire, I do not repudiate metaphysics; we all and at all times carry some around with us. However, views on metaphysics are often notoriously influenced by what we think we know or control in this world, and I did not think that the best biblical way to legitimate "naturalism." Instead, I followed the more epistemological line of thought reflected in Boyle's surprising advocacy of "mechanical philosophy," even while he believed ultimately in absolute divine sovereignty and its agency in creation.

William Hawk thinks the ideas regarding new "functional logic" paradigms in biology remain *mechanistic*. I do not think this is quite correct; these paradigms do commit us to the idea that a limited kind of *telos* is manifest in biology, though its mundane operation is "natural" rather than ascribed to divine agency. Hawk also argues that this "naturalism" is, in its turn, as vulnerable to misappropriation by unbelief as the old purely mechanistic naturalism was. He is right. I am sure Boyle would be aghast if he could see what has been made of his "mechanical philosophy" by generations of unbelief; but he saw the possibility in the ideas of his contemporary Thomas Hobbes and clearly rejected them. This proposal about the scope of "naturalism" in biology risks perversion *in the same way that Boyle's naturalism did*; that is the fallen world in which we live.

Responses by William Dembski, Gordon Mills, and Elva Miller need brief comment. The position of the essays is clear *vis-à-vis* "intelligent design." I have said that I accept *natural theology* as a legitimate reflection on the same truths which science can discover, and not limited by "naturalism." In Part II,

I stated my belief that design in biology is a reasonable natural theological inference.

I often read Mills' interesting articles in *PSCF*, appreciating their scientific thoroughness and caution, but questioning how the systematic understanding he proposes to construct on the scientific facts necessarily leads a strict "naturalist" to his theological reading of those facts. I do not know how the ideas of Part II might bear on his work. I think of his papers as a combination of scientific and natural theological discussion, but without convincing arguments that the theological interpretation follows from the science. We disagree on the legitimacy of intelligent design as a *scientific* idea.

I do not know how to reply to Miller's comments, since I do not follow her argument that detecting intelligent design is normal scientific methodology.

Dembski concedes that the paradigm change proposed goes in the *right direction* by asserting that more than physics is objectively manifest in biosystems. I agree with him that in the so-called *cognitive sciences*, we do and should appeal to the idea of intelligent design as a legitimate and objective aspect of reality. In cases he cites, the entities studied are known artifacts of creature intelligence. But it begs the question to claim the same idea is appropriate to biology; beetles are not intelligent *themselves*. Since the implied intelligence to which Dembski ascribes design is not creaturely but *divine*, he is asserting that the divine fingerprint *is* detectable by rational analysis, independent of faith or repentance. I do not believe that and have said why in my essay.

Dembski also wants "functional logic" to do everything he thinks "ID" can do. I never intended that. In particular, I have not attempted to argue anything much about biological *origins*. Part II's proposal is not a "category mistake" but a different and more modest policy—and one directly relevant to the actual research situation.

I thank respondents for many helpful insights or clarifying questions. These essays are intended to provoke work on a constructive project, not to lay down a definitive position closed to future modification. ◇