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Science Within the Limits of Truth

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The October 1990 issue of this publication featured a lively and occasionally fierce debate on the subject of evolution. Initiated by Phillip E. Johnson of the University of California Law School at Berkeley, the debate included responses by a history of science professor (William B. Provine), a museum curator (Gareth Nelson), a biophysics professor (Thomas H. Jukes), and two editors (Irving Kristol and Matthew Berke). Of these participants, it was Berke who especially attempted to draw serious attention to the philosophical dimensions of the issue. Berke's principal point was that "philosophy, rather than science, is the final battleground in the evolution debate . . . insofar as that debate becomes a struggle between naturalism and supernaturalism to have the final say on man's status." The point is well taken, and points to the larger truth that the evolution debate is itself a microcosm of a much broader philosophical struggle, a struggle over the very definition, boundaries, direction, integrity, and even validity of the entire scientific enterprise.

The manner in which this debate has been carried on, if it is truly indicative of the thinking of the participants in it, should trouble–even alarm–those who are concerned for the continued success of the scientific enterprise.

For as has been made vivid by the argument about evolution, two tendencies of thought are between them posing a serious threat to the continued health of scientific endeavor. First, there is the increasing prevalence within the scientific community of naturalistic philosophical beliefs which, if carried to their logical conclusion, would seem to imply a complete debunking of the enterprise. Second, there is a tendency on the part of both naturalistic and theistic scientists to impose their respective worldviews onto the realm of science and hence to distort the logical boundaries of that realm.

The first threat, that from naturalism, directly challenges the presuppositions upon which science as we know it was originally based–presuppositions which, though undoubtedly absent from the consciousness of many contemporary scientists, were quite clearly on the minds of those who pioneered modern science. These presuppositions concern both nature the observed and man the observer. Nature was assumed to "occur" in regular patterns. Earlier scientists such as Isaac Newton premised this assumption on a prior one that nature was created by an "orderly" God closely resembling if not identical to the God of the Bible, who, having a fixed character, was presumed to have created nature with the same kind of essential order or stability. From this premise, it was concluded that nature was worthy of being observed seriously.

Having been deemed worthy of such observation, can an object, in fact, be observed? Is the observer capable of observing it? That depends on his relationship to the object. When the object is nature, it would appear that man must be sufficiently detached or removed from it to be able to discover genuine truths about its operations. Hence the second major presupposition that would seem necessary in order for scientists to proceed with well–grounded confidence is this: man the observer is not entirely immersed in nature the observed. Though long out of vogue within the philosophy departments of major universities, this presupposition of an existent subject/object relationship has for its detractors an especially annoying habit of regularly rearing its unwanted but formidable head in the real world. Words like "objective" and "objectivity" are inescapably premised upon the existence of such a relationship. When, for example, we deem a judge to be "objective," we mean that he, the subject, is sufficiently detached from the parties and their respective interests, the object. If his interests lie with either side, if he stands insufficiently outside of the parties' respective interests, it is understandably assumed that he may not handle the case in a manner conducive to the emergence or discovery of truth. Similarly, if man is intrinsically incapable of standing sufficiently outside of or transcending nature, logic would appear to dictate that the validity of his assertions concerning it could be called into question.

Absent this assumption of an existing subject/object relationship, it would seem that science cannot be ultimately practiced with a great degree of confidence. But on what grounds may we properly assume that a part of man can, in fact, transcend nature? The traditional answer has been that the same Deity who had created nature the observed and hence transcended it had placed in man the observer a similar kind of transcendence. It is no mere coincidence that science as we know it today began in the Judeo–Christian

West and not the pantheistic East. Man's confidence in his ability to transcend nature and hence discover truths concerning it ultimately depends upon his rejection not only of dogmatic naturalism but of pantheism's attribution to Deity of complete immanence, in favor of a Western attribution to Deity of a transcendent character.

Thus far, it has been shown that a philosophical case can readily be made for the assertion that the validity as well as origins of science derive from the assumption of the validity of Western theistic premises. Nonetheless, as Phillip Johnson and many others have noted, most evolutionary biologists appear to have accepted uncritically the worldview of naturalism. If it is indeed the case that absent theistic assumptions, the scientific enterprise can ultimately be called into question, then by embracing naturalism, these biologists are effectually sawing off the branch upon which they are currently sitting. If naturalism is true, then all branches of the sciences, evolutionary biology included, could in the long run be in serious trouble.

Science, however, has faced, is facing, and will continue to face a far more obvious threat than that posed by the particular philosophical beliefs of scientists. It comes from a particular vocal group of naturalists on one side and a much smaller but equally noisy lot of creationists on the other, both of whom have increasingly been declaring their respective philosophical views not merely to be true but to be true in a specifically scientific sense. Those who have incurred the bulk of the media's wrath, or more commonly, ridicule, have of course been the creationists. Though it is entirely legitimate for a scientist, or anyone else, to present philosophical or theological arguments against naturalistic evolution, it cannot properly be claimed that such arguments are themselves scientific ones. Here we have the blind spot of creationism, for if we define science as the study of nature, then to offer an opinion concerning what lies outside of it is to step entirely outside of the scientific realm.

Even if all scientists declared evolution to be entirely errant, creationism could be taught as a science only in terms of what it denies, namely, that there is sufficient evidence for evolution. What it affirms–specifically, the creation of nature by a Supreme Being who transcends it–cannot represent itself as science. A creationist may argue eloquently and persuasively for the existence of a transcendent God. He may argue, as I have attempted to do, that the presuppositions behind science are ultimately theistic. But when he does so argue, he is speaking not the language of science, but rather of logic, philosophy, or theology. This is said, to be sure, not in denigration of these fields: for if Western theists are correct, then such fields are arguably of greater importance than science. But for the sake both of truth and continued human progress, the integrity and independence of science ought to be preserved against those who would compel it to state, as *scientific fact*, that something exists outside of its sole field of study, which is nature.

Equally dangerous to science, however, if not more so, are those naturalistic scientists who play essentially the same game as the creationists, i.e., seek to lend credibility to their particular worldview by attempting to clothe it in scientific garb. It must be emphasized that even if what they believe is true and we theists are wrong, it is no more affirmable as science than creationism. The naturalists' assertion that nature encompasses all that exists can be neither verified nor falsified through its study. In other words, science by definition has boundaries, and when they speak *as* scientists, people simply cannot address the question of whether or not anything exists outside of nature.

Every scientist, then, be he a pantheist like Fritjof Capra, a naturalist like Carl Sagan, or a Western theist like Robert Jastrow, has an ethical and professional duty to guard the scientific realm from being infiltrated by philosophy or theology and to restrain it in turn from infiltrating these and other fields. In recognition of the boundaries derived logically from its very definition, science must both defend itself from invasion by, and at the same time resist the temptation to invade, other fields.

In centuries past, science's boundaries were continually threatened with invasion by the forces of institutionalized religion. One of the most egregious examples of this was the persecution of Galileo at the hands of the seventeenth–century Roman Catholic Church, which imprisoned him for his apparent sympathy for the heliocentric theories of Copernicus. For students of the history of science, this shameful incident is etched indelibly in their minds as an example of the bullying of science by those having an apparent stake in the upholding of a particular religious worldview.

In contrast, the past hundred years have witnessed an exactly opposite phenomenon, the effort at imperial expansion by certain naturalistic scientists. Buoyed by a self–confidence that, paradoxically, can only be justified by the theistic premise of man's capacity to transcend nature, these scientists began subjecting man himself to an increasing amount of scientific study. In light of the fact that man is located within nature, it is not in retrospect surprising that many of the results have been extraordinarily beneficial. We have come a very long way from the not–so–distant past when physical life on earth was for humanity as a whole "nasty, brutish, and short," as Hobbes succinctly put it. The findings resulting from the scientific study of man have ushered in a period of unparalleled progress, especially in the form of enhanced physical health and material abundance for hundreds of millions of people. But as man became increasingly the object of this kind of study, science eventually arrived at a crossroads. As man was indeed a part of nature, scientific study of him was, as we said, legitimate. But the question inevitably arises, is *all* of man located within nature? And science is by definition unable even to address this question.

Unfortunately, all too many advocates of science, both professionals and amateurs, presumed that science knew the answer. Naturalism came to be affirmed as axiomatic, and metaphysical or theological premises concerning man contemptuously dismissed as obsolete and hence irrelevant. In short, man came to be seen in his entirety as a creature of nature, and all assertions with respect to his transcendent capacities were peremptorily denied.

The effects on Western civilization of this imperialistic expansion have been both far–reaching and calamitous. So far–reaching have they been that it is no exaggeration to assert that the modern age can be most easily characterized as the time in which the penetration of virtually all fields of human endeavor has been accomplished on science's purported behalf by naturalists. And so calamitous have they been that despite recent worldwide successes in the political realm, Western civilization has yet to reverse or even stem the tide of cultural decay attendant on them.

The effects of the venturing of science beyond its borders come under the categories of determinism and relativism. As for determinism, naturalism's widespread acceptance in both the natural and social sciences implied that man, seen as a being completely subject to the chain of cause–and–effect that runs throughout nature, possesses no free will. The resultant denial of personal responsibility for thoughts, attitudes, and conduct has in a variety of ways affected the intellectual and academic disciplines from sociology, psychology, and criminology to political science, history, and the humanities. Even a cursory comparison, for example, of works of history written in this century with those written in centuries past provides an astonishing contrast, particularly with respect to discussions on the causes of various wars. In seeking to explain the commencement of armed conflicts among nations, writings from our century are far more likely to emphasize "environmental" causes, such as, of course, economics, than the free–will decisions of various leaders or the power of ideas. The implicit premise behind this "environmental," i.e., deterministic, analysis is that man is entirely submerged in the cause–and–effect processes of nature.

That such analysis is, to say the least, incomplete, can easily be demonstrated by even the most elementary critical scrutiny. If, for example, it is asserted that World War I was in large part caused by the economic rivalry between Great Britain and a newly emergent Germany, the question immediately arises as to why a divergence of economic interest between two nations would in itself result inexorably in their proceeding to fight each other, thus tearing apart both their respective societies and economies. Without turning to basic assumptions concerning the limitations of human nature, the power of ideas and attitudes, and, ultimately, the existence of free will, any explanation of the causes of war will ultimately be unsatisfactory.

The prevalence of determinism is even more evident in the field of psychology. In earlier decades, both Freudian psychoanalysis and Skinnerian behaviorism were examples of the widespread embrace of determinism on the part of psychologists. Though Skinner is the most obvious example of adherence to a particularly "hard" determinism, the ideas of Freud and many others had deterministic implications as well. The comparatively recent popularity of cognitive behaviorism, with its implicit nod to free will in its emphasis on the importance of beliefs, concepts, and ideas as well as environment in influencing human attitudes and conduct, shows that in some circles determinism is being somewhat moderated. Nevertheless it remains true that, with the exception of sociology, psychology has been more influenced by naturalistic (and hence deterministic) presuppositions than any other field in the social sciences and humanities. The result, especially where psychotherapy is involved, has been a serious deemphasis on personal responsibility. Moreover, for some years now a "pop" version of psychological determinism has been spreading throughout our culture, making a large contribution toward the undermining of an ethic of personal responsibility.

Which is to say, the adverse effects of determinism have in no sense been confined to the academy. The increase in virtually every form of social pathology throughout the West, especially in the latter part of this century, may in no small part be attributable to the steady erosion of the belief in free will. The characterization of criminals as primarily victims of their environment, a notion that has become increasingly popular among public policy analysts and social critics since the 1950s, is the clearest example of the erosion of this belief. Though the idea of criminal as victim does seem to be falling somewhat out of fashion–possibly because certain policy analysts and social critics have themselves experienced some of the increasingly widespread criminal behavior–it is interesting to note that more and more offenders have become conversant with and adept at the rationalizing language of determinism. Prison rehabilitation experts have duly noted the difficulty of breaking through the numerous rationalizations of inmates who refuse to accept any kind of responsibility for what they have inflicted upon themselves or others.

As we have seen, free will is not the only thing denied by naturalism. As naturalism is affirmed, transcendence is denied, and with it the existence of absolute or objective standards. Affirmed is a thoroughgoing relativism that has come to pervade virtually every area of life. Nothing seems immune from this onslaught. Even defining the nature of a given field of study has become an increasingly difficult and frustrating endeavor. Western culture has been plunged into seemingly endless debates about what is art, or what is philosophy, or what is theology, and over and over again those who stirred such debates arrived at the answer that there are no answers. That such an idea is self–contradictory seemed only to confirm it.

The process of draining logic and meaning from everything came to full fruition in the 1960s and 1970s, when it began to be felt profoundly in the daily lives of many Americans, with such things as the proliferation of "alternative lifestyles," the diluting or jettisoning of academic standards at every level, the increasing inability of the legal system to make in practice sufficient or consistent distinctions between victim and victimizer–among many others too familiar to all of us us to need spelling out. Determinism and relativism have together made a lethal contribution to the cultural decay.

It is no coincidence, then, that creation science and the emergence of the Religious Right as a social force should have come together in the 1970s and early 1980s. Both were essentially a backlash against the crisis of decadence wrought by naturalism's legacies of determinism and relativism. While the Religious Right sought in various ways to combat these legacies, creationists specifically attacked the root of the problem, naturalism itself.

Unfortunately, both employed the wrong kinds of arguments for the respective areas in which they engaged their opponents. As Richard John Neuhaus emphasized in *The Naked Public Square*, the Religious Right improperly employed essentially private arguments and language of special Revelation in the public realm. With equal impropriety, the creationists often employed the thought and language of religion and philosophy in their area of concern, the study of nature. Thus while they have, as have the Religious Right, usefully called into question the harmful influence of the naturalists, when it comes to the well–being of science they are probably as much a hindrance as a help. They appear to be no more respectful of science's proper boundaries than are their naturalistic opponents. While all too many naturalists seek, as we have seen, to expand these boundaries, the creationists, knowingly or not, advocate their shrinkage.

The inherently necessary borders of science could best be protected in the future if all scientists were to agree to draw a clear, careful, and inviolable line between scientific and philosophical/religious truth–that is, if they would conscientiously seek to avoid making purportedly scientific statements concerning questions whose answers lie beyond the scope of scientific inquiry. How scientists ultimately handle the evolution controversy in all its aspects may provide a clue as to whether they are authentically concerned about scientific integrity or whether they merely wish to advance their respective philosophical agendas, be they naturalistic or theistic. It would certainly be welcome, not only with respect to the interests of science, but to those of society in general, if scientists of all stripes began truly to respect the limits of their own enterprise.

By now, however, even this would not by itself be enough. For it would still be the case that a disproportionate number of scientists remain dogmatic naturalists, and their denial of human transcendence would still threaten the very basis of confidence in the efficacy of the scientific enterprise. This issue would so far no doubt appear to most scientists and scientific devotees to be a rarified one addressed chiefly by people of an incorrigibly philosophical bent. But it is simply a matter of time before others, especially those naturalists who insist upon unflinching and brutal intellectual honesty with themselves, carry the logic of naturalism to its inevitable end and ask the perhaps unconsciously dreaded questions: How can we be objective if as naturalists we have rejected the very basis upon which to believe in objectivity? And if we cannot in fact be truly objective, then who is to say what is science or, for that matter, anything else?

What will happen then? Facing these questions, will naturalists undergo a serious change of worldview? It is, naturally, quite impossible to predict. But if they do not recognize the consequences, in both thought and practice, of the present state of their beliefs, we whose bent is philosophical rather than scientific may be forgiven for worrying about what the scientific future holds.

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