

RHETORICAL LEGERDEMAIN IN INTELLIGENT-DESIGN LITERATURE

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Charles Darwin presented his theory of evolution to a scientific community overwhelmingly creationist in temperament. Biology as an organized discipline was in its infancy and consisted of little more than raw descriptions of nature's oddities. The origin of species was not considered an appropriate topic for scientific investigation. Indeed, evolution was hardly original to Darwin; Jean Baptiste de Lamarck and Robert Chambers, among others, had beaten him to it; but scientists wanted nothing to do with the concept. The argument from design, presented by William Paley in his *Natural Theology*, seemed convincing to nearly everyone.

So if Darwin convinced the thinking world of both the reality of evolution and the plausibility of a naturalistic explanation for that reality, it was not because he was preaching to a choir of militant atheists. Darwin achieved his intellectual revolution by presenting compelling evidence, culled from numerous scientific disciplines. The century since has seen his theory confirmed by new data from branches of science he never dreamed of, genetics and molecular biology in particular.

Evolution's critics remain unimpressed, and they offer an endless supply of books, magazines, and religious tracts in defense of their view. For most of the twentieth century, organized anti-evolutionism has been associated with religious fundamentalism. The scientific arguments they raised were amateurish to say the least, causing scientifically knowledgeable readers to dismiss them with amusement. Less amusing was their dishonest use of rhetoric, their penchant for removing quotations from their proper context, and their rank distortions of modern scientific thought.

That school of anti-evolutionism still exists, but several hostile court decisions have reduced it to the level of background noise. Nowadays anti-evolutionism is controlled by a group of eloquent, well-educated academics. The term "creationism" being rather debased, they prefer the title "Intelligent-Design Theory (ID)." Their placid tone and skillful

writing have convinced many that there is now serious, scholarly criticism of evolutionary theory. Press accounts are careful to distinguish ID theorists from the creationists of old.

In part this distinction is appropriate. The scientific arguments ID's raise are quite sophisticated, and require a considerable education to refute. Furthermore, their attacks on science are narrowly focused. Whereas creationists tended to dismiss everything from biology to astronomy to geology, ID aims solely at the explanatory sufficiency of natural selection.

But in another, more important, sense this distinction is not appropriate. In terms of their dishonesty ID's are no improvement over their creationist forebears. Their scientific arguments have been decisively refuted elsewhere. Here I will analyze the rhetorical tricks they use to convert slipshod science into persuasive prose.

1. WHAT IS NEO-DARWINISM?

Many critics of evolution learn their science solely from popular-level, often hostile, treatments of the subject. This allows ID to present a caricatured version of the theory. By knocking over a straw-man they make biologists look foolish and doctrinaire. Understanding what modern evolutionary theory really says is essential for penetrating the fog they disperse.

The modern view of evolution is often called the Neo-Darwinian synthesis, or simply Neo-Darwinism. It is called a synthesis because it unifies the work of several disparate branches of science. As such, it is not a single theory.

The major ideas of Neo-Darwinism can be summed up roughly as follows:

- (1) The history of life on Earth reveals a pattern of descent with modification. Thus, any two species alive today had a common ancestor in the past.
- (2) Organisms produce more offspring that can survive given the limited resources of natural environments. Organisms also show heritable variation. Some organisms possess variations making them more successful at reproduction.
- (3) As a result, favorable variants will accumulate over time, leading to evolutionary change. In particular, complex organs like eyes or wings arise by gradual accretion.
- (4) Evolutionary change is nearly always gradual. Large-scale reorganizations of the genome do not occur in a single generation.

- (5) Macroevolutionary change is the result of numerous microevolutionary events. There is no need to invoke new mechanisms to explain such change.

Statement one is referred to as the hypothesis of common descent. Statement two is a simple empirical fact. The process described in statement three is known as natural selection. Evolution/creation disputes revolve entirely around claims one and three, and when scientists describe evolution as entirely uncontroversial it is these claims they have in mind. Claims four and five, by contrast, generate substantial controversy, a fact ID's seize upon.

Most biologists would not recognize their theory in ID presentations. Consider:

It is sheer dumb luck that alters the genetic message so that, from infernal nonsense, meaning for a moment emerges; and sheer dumb luck again that endows life with its *opportunities*, the space of possibilities over which natural selection plays, sheer dumb luck again endowing the elephant's sensitive nose with nerves and the orchid's translucent petal with blush.

David Berlinski, "The Deniable Darwin"

Berlinski acknowledges the existence of natural selection, but completely overlooks its role in crafting complexity. Genetic variation is random, but selection is not. Selection's sieving action preserves the incipient stages of new organs, making it possible for complexity to arise gradually. This statement is typical of ID literature, which seeks to dismiss evolution by presenting it as a theory of chance. Consider that evolutionary biology is the source of thousands of pages of professional journal articles every year. If sheer dumb luck is the sum total of evolutionary theorizing, one wonders what all the verbiage is for.

ID's frequently, and wrongly, present evolution as a theory regarding the origin of life:

In fact, Justice Scalia used the general term "evolution" exactly as scientists use it - to include not only biological evolution but also prebiological or chemical evolution, which seeks to explain how life first evolved from non-living chemicals.

Phillip Johnson, *Darwin on Trial*

The task of evolutionary biology is to explain the origin and development of life.

William Dembski, *Intelligent Design*

Johnson is commenting on the dissenting opinion in the 1987 Supreme Court case *Edwards v. Aguillard*, hence the reference to Justice Scalia. Johnson and Dembski are mistaken; the question of life's origin is logically and empirically separate from its subsequent evolution. This is obvious when one considers the lines of evidence cited on evolution's behalf, which take for granted the existence of some life form equipped with the full complement of known genetic mechanisms. Evolution explains how biological complexity arises from biological simplicity. It is silent on the origin of biological simplicity.

Of course, the two topics are often discussed together. Accepting Neo-Darwinism makes it natural to wonder about life's origin. Many of the theories in this regard bear similarities to Darwinian explanations of evolution. Hence the phrase "chemical evolution." But the fact remains that it is a different theory that is being described.

The fossil record is completely consistent with the hypothesis of common descent; a powerful source of evidence in Darwin's favor. However, tracing specific lines of descent through a collection of fossils is difficult, if not impossible. ID's deliberately confuse these two points:

The horse sequence has proved vexing to everyone who looks at it, and the term of choice is that it's an astonishingly bushy sequence. We have dozens and dozens of species entering the record suddenly and departing from the record just as abruptly as they entered. We don't really know whether the modern horse has ancestral patterns with the dozens of other species that we find in the fossil record.

David Berlinski, *Firing Line* Debate.

Any fossil species is a snapshot into deep time. It tells us that an animal showing certain morphological features existed at a particular time in natural history. It does not come with labels announcing its proper place relative to other fossil species, and it is generally impossible to say with certainty that this pile of bones *over here* is a direct ancestor to that pile of bones *over there*.

From this sensible point Berlinski wishes to conclude that "bushy" fossil sequences can not be used as powerful evidence for evolution, but this conclusion is unwarranted. Evolution makes definite predictions about what sorts of fossils should be found and not found in rocks of a given age. When paleontologists repeatedly confirm these predictions, it constitutes evidence for the theory.

The extant collections of fossil horses may form a bushy sequence, but it is not a chaotic one. There is a clear pattern of morphological change that coincides nicely with what selection would have preserved given the environmental changes going on at that time. It therefore supports evolution.

Evolutionists often cite the patterns of embryological development as indicative of common descent. ID's challenge this by observing that the once popular theory of "ontogeny recapitulates phylogeny" has turned out to be false:

Since Darwin's theory is affirmed regardless of the evidence, and "ontogeny recapitulates phylogeny" is a logical deduction from that theory biology textbooks continue to teach it - though they usually attach von Baer's name to it.

Jonathan Wells, *Icons of Evolution*

Ontogeny refers to the process of embryological development of an organism between conception and birth. Phylogeny refers to evolutionary history. Even before Darwin scientists noticed that the embryological development of wildly different organisms often passed through similar early stages. Von Baer was among the first to observe this pattern, which explains why his name arises in this context.

Ontogeny recapitulates phylogeny was a specific theory developed to explain these observations. It was the brainchild of Ernst Haeckel and was in no way a logical deduction from Darwin's theory. It is also distinct from Von Baer's ideas. Haeckel argued that early stages of embryological development were similar because they recapitulated the shared evolutionary history of the organisms in question. This theory was based in part on the idea that programs of development could be modified only by adding new stages to the end of the program. This idea is now discredited. Wells wishes to conclude that since Haeckel theory is mistaken, there must be no relation between ontogeny and phylogeny. This conclusion is absurd.

Now consider the rhetorical impact of these misconceptions. Presenting evolution as a theory of chance, or as a theory of life's origins, allows ID's to set-up a caricatured evolutionist. No one would explain life's manifold complexity via chance alone, but by presenting this straw-man ID's can look clever when knocking it down. Similarly, ID's capitalize on current ignorance regarding life's origins to imply that evolutionists leave an explanatory hole at the start of their theory. This allows them to appear open-minded, frankly admitting the

existence of open questions, unlike arrogant Darwinists who presume to cover up such things.

They also permit ID's to imply skullduggery among scientists. By presenting discredited ideas as if they represent modern thought they strive to make evolutionists appear blinkered and dishonest.

2. DISTORTIONS OF SCIENTISTS' WORK

The fourth and fifth claims of Neo-Darwinism are the source of considerable controversy. Consider three examples:

- (1) Stephen Jay Gould/Niles Eldredge: Punctuated Equilibrium
- (2) Stuart Kauffman: Self-Organizing Systems
- (3) Jerry Coyne/ H. Allen Orr: The role of mutations of large effect in adaptation.

All three theories have been misrepresented in the ID literature. None of them has anything to do with the validity of common descent or the ability of natural selection to craft complex adaptations. Kauffman's argument is that complex systems can order themselves spontaneously, offering a source of biological order not mediated by natural selection. It is a challenge to claim five. Coyne and Orr argue that mutations of large effect play a greater role in adaptation than Neo-Darwinism generally acknowledges. Thus, it is a challenge to claim four.

To ID's, these are the sorts of gaping theoretical holes scientists are at pains to conceal. They make their point by distorting the nature of these theories, and often lift quotations out of context to support their view. For example:

Jerry Coyne, of the Department of Ecology and Evolution at the University of Chicago, arrives at an unanticipated verdict: 'We conclude - unexpectedly - that there is little evidence for the Neo-Darwinian view: it's theoretical foundations and the experimental evidence supporting it are weak.'

Michael Behe, *Darwin's Black Box*

Sounds bad, doesn't it? Now consider what was actually written:

Although a few biologists have suggested an evolutionary role for mutations of large effect, the Neo-Darwinian view has largely triumphed, and the genetic basis of adaptation now receives little attention. Indeed, the question is considered so dead that few may now know the evidence responsible for its demise. Here we review this evidence.

We conclude - unexpectedly - that there is little evidence for the Neo-Darwinian view: its theoretical foundations and the experimental evidence supporting it are weak, and there is no doubt that mutations of large effect are sometimes important in adaptation.

Jerry Coyne and H. Allen Orr, "The Genetics of Adaptation: A Reassessment"

Gives a rather different impression. Note that Behe altered the quotation to give the impression that an esoteric comment about adaptation was actually a searing indictment of all of Neo-Darwinism.

Behe similarly exaggerates the challenge posed by Kauffman's theories:

Kauffman is one of the leading light in a group of scientists exploring complexity theory - roughly, the idea that complex systems can organize themselves - explicitly as an alternative to natural selection.

Michael Behe, "Fatuous Filmmaking"

Actually, Kauffman's intent is to supplement natural selection, not replace it. Indeed, his work is far more threatening to ID's, since it implies that complex order arises naturally, almost inevitably, without any need for the action of an intelligent agent.

The Gould/Edlredge theory of punctuated equilibrium comes in for particular abuse, largely because Stephen Jay Gould was an especially prominent evolutionist. To hear an ID theorist tell it, punctuated equilibrium exists solely as an ad hoc explanation for the absence of transitional forms in the fossil record. It is commonly said to be an assault on the efficacy of natural selection, or that it is a return to saltationist theories of evolution. Consider just two examples:

Are transitional forms conspicuously lacking at certain points in the fossil record? Punctuated equilibrium comes forward to account for the gap: it happened too fast (only thirty million years or so) to leave enough to be noticed.

Huston Smith, *Why Religion Matters*

Unlike Martin Gardner, I do believe that punctuated equilibrium damages the Darwinian viewpoint; so does everyone else. By compressing the time available for speciation, Stephen Jay Gould has eliminated an accretion of small changes as its mechanism.

David Berlinski, Response to Martin Gardner

Both of these quotations are serious distortions of the theory. Punctuated equilibrium was an attempt to connect modern theories of speciation with the findings of paleontology. Starting in the forties, Ernst Mayr, developed, based on countless field studies, the allopatric model of speciation. In this model speciation occurs when small "founder" populations become isolated from their ancestral stock. Within such populations, gene frequencies can change quickly. In a 1954 paper, Mayr suggested this would lead to a pattern of stasis interrupted by sudden changes in the fossil record. Gould and Eldredge developed this idea into a workable model for paleontologists, and punctuated equilibrium was born.

We can now see why the quotations above are so misleading. In the fossil record transitional forms at the species level are rare, but they exist in large numbers at higher taxonomic levels. That this should be so is a consequence of punctuated equilibrium, not the reason for its development. Smith's comment about "thirty million years" is truly pathetic; it is a number he simply made up.

David Berlinski is mistaken in both of his major claims, and it is worth noting that Gould himself rejected them unambiguously. First, punctuated equilibrium addresses the tempo and mode of evolution. It says nothing about mechanisms. By itself it poses no threat to classical Neo-Darwinian ideas regarding natural selection. The "punctuations" referred to in the theory are rapid only relative to the much longer periods of stasis. They are plenty long enough for selection to account for the observed changes.

Darwin believed that paleontologists should confirm evolution by finding series of insensibly graded fossil forms. The record generally does not document such change, a fact he had to address. He argued that the absence of transitional forms was an artifact of the extreme imperfection of the fossil record, a sound answer that would be endorsed by many evolutionists today.

Not necessarily the correct answer, however. Gould and Eldredge argue that Darwin was mistaken in believing that insensibly graded fossil series were the logical conclusion of his theory. Darwin erred because he had no sound estimate of the age of the Earth, no working model of speciation, no knowledge of the physical basis of heredity, and no information regarding the extent to which paleontologists could resolve the ages of fossils. He was also at pains to stress the gradualism of his model as a contrast to the dominant catastrophism of his day.

All three challenges discussed here remain controversial, but even if they are right in every particular the resulting theory would still be Darwinism. They are interesting for another reason, however. Anti-evolutionists are fond of claiming the professional journals are closed to them because of editorial bias against work critical of Neo-Darwinism. Yet these theories, along with countless others, have all been hashed out in academic journals. Contrary to ID protestations, journal editors thrive on controversy; it brings much needed attention to the journals they edit. They simply require the heretic to have something other than ignorance and obfuscation to offer in defense of his theory.

3. DISTORTIONS OF SCIENTIFIC METHODOLOGY

If ID's wish respectability to be conferred upon their ideas, the test they must pass is simple: Go discover something. Show how your methods and theories lead to the discovery of useful insights about nature. This is a test evolution has passed for more than a century.

Such success will elude ID, because its scientific arguments as a smoke-screen. In reality it is the intellectual foundation for a movement that wishes to have supernatural explanations be considered a part of science. Berkeley law professor Phillip Johnson is particularly passionate on this point. The following quotations are representative:

On the other hand, modernists also identify science with naturalistic philosophy. In that case science is committed to finding materialistic explanations for every phenomenon - regardless of the facts.

From *The Wedge of Truth*

By skillful manipulation of categories and definitions, the Darwinists have established philosophical naturalism as educational orthodoxy in a nation in which the overwhelming majority of people express some form of theistic belief inconsistent with naturalism.

From "Evolution as Dogma"

Darwinists know that the mutation-selection mechanism can produce wings, eyes, and brains not because the mechanism can be observed to do anything of the kind, but because their guiding philosophy assures them that no other power is available to do the job. The absence

from the cosmos of any Creator is therefore the essential starting point for Darwinism.

From *Darwin on Trial*

Johnson would have you believe all the field studies, laboratory experiments, professional journals, conferences, books, magazine articles, and countless hours of toil spent by dedicated researchers in the tedium of day-to-day scientific work are all just planks in a grand scheme to promote atheism to the world at large. The scope of his attack is truly breathtaking. First he blithely accuses scientists of allowing their philosophical presumptions to blind them to the facts. Then we learn that a monolithic band of Darwinists has, merely by playing semantic games, managed to thwart the will of the American public. The deal is sealed by claiming that scientists have rejected creationism a priori, despite the countless books and articles scientists have devoted to the subject.

Johnson is wrong because he fundamentally misunderstands the nature of science. It is true that scientists reject supernatural explanations when doing their work. This is for entirely pragmatic reasons; there is no reliable means for testing supernatural explanations against data, making them useless for practical purposes. This is referred to as methodological naturalism. It makes no assumption about how the world actually is. Metaphysical naturalism, by contrast, is the explicit statement that natural forces can account for everything. Were a poltergeist to invade a laboratory and perform miracles in defiance of all physical explanation, metaphysical naturalism would be utterly defeated. Methodological naturalism would shrug its shoulders.

A commitment to naturalistic explanations does not mandate acceptance of the first theory to come down the road. Admissions of ignorance are perfectly acceptable. Theories abound for the origin of life, but no scientist describes the problem as solved. Neo-Darwinism is accepted because if it were false, it should be easy to disprove. That a century's worth of research has failed to do so surely counts for something.

What is really going on here is rather more insidious. In modern society a statement is true to the extent that it is scientific. Thus, every two-bit demagogue and snake-oil salesman must don scientific raiment to persuade others of the correctness of his view. Johnson, for reasons having nothing to do with science, wishes to persuade others of the correctness of his religious views. If that means misrepresenting science to a public eager to believe his message so be it.

4. OVERSIMPLIFICATIONS OF BIOLOGICAL RESEARCH

Though ID theorists pretend to be at the cutting edge of biological research, much of their *modus operandi* involves presenting simplistic versions of difficult scientific ideas. We consider a typical example.

Jonathan Wells and Paul Nelson wish to persuade us that homologies, those peculiar anatomical similarities that strongly suggest common descent, are on their way out as a source of evidence for Darwinism. They write:

In a recent commentary on the troubled state of the concept [of homology], David Cannatella, of the Department of Zoology at the university of Texas wrote: ‘Wake (1994) offered that homology is the central concept of all biology. If this is true, then a large group of comparative biologists lacks a guiding principle. One does not have to look far to see that homology is not understood by many biologists.

Jonathan Wells and Paul Nelson, ”Homology: A Concept in Crisis”

The trouble begins when we note that Cannatella was not lamenting the troubled state of homology. He was writing a favorable review of two books on the subject, books which were themselves celebrating the glut of recent work in the area. It continues when we consider the remainder of Cannatella’s statement:

Wake (1994) offered that homology is the central concept of all biology. If this is true, then a large group of comparative biologists lacks a guiding principle. One does not have to look far to see that homology is not understood by many biologists. For example, Quiring et al (1994) isolated the *Drosophila* homolog of the Pax-6 gene, which is very similar to the Pax-6 of mice, quail, humans and zebrafish. They concluded that ‘because Pax-6 is involved in the genetic control of eye morphogenesis in both mammals and insects the traditional view that the vertebrate eye and the compound eye of insects evolved independently has to be reconsidered’. Here the faulty logic lies in equating different hierarchical levels, the beginnings and ends (genes and eyes) of the developmental cascade. The presence of the Pax-6 gene is probably a synapomorphy of a large group of metazoans and thus the Pax-6 genes are homologous. But the distribution

of the character state ‘eyes present’ on the phylogeny of metazoans requires homoplasy, and the eyes of insects and vertebrates are independently evolved.

David Canatella, Book Review.

Canatella is criticizing the idea that a gene playing similar roles in different classes of organisms must have arisen by descent from a single common ancestor. The issue is not whether homology is a useful concept for comparative biologists. Rather, the logic of its application can be subtle in real-life cases, and sometimes even professionals are led astray.

It is commonly believed that the findings of biology hold deep theological significance. As a result, everyone feels qualified to discuss them. But the fact is that biology, like any mature science, is subtle and complex at its frontiers. Some humility is in order when considering popular-level treatments of this material.

5. OUTRAGEOUS CHARGES

I have been reading ID literature for several years now and have developed a thick skin as a result. I can read dozens of pages of nonsense in one sitting, without once coming up for air. I can identify the proper context of a scientific quotation solely on the basis of how it is misrepresented by ID’s.

But every once in a while I come across something so outrageous, dishonest, or just flat ignorant that I am stopped dead in my tracks. For example:

[Douglas Futuyma] writes, ‘The gradual transition from therapsid reptiles to mammals is so abundantly documented by scores of species in every stage of transition that it is impossible to tell which therapsid species were the actual ancestors of modern mammals.’ But large numbers of eligible candidates are a plus only to the extent that they can be placed in a single line of descent that could conceivably lead from a particular reptile species to a particular mammal descendant. The presence of similarities do not necessarily imply ancestry. The notion that mammals-in-general evolved from reptiles-in-general through a broad clump of diverse therapsid lines is not Darwinism. Darwinian transformation requires a single line of ancestral descent.

Phillip Johnson, *Darwin on Trial*

Truly extraordinary! The theory that modern mammals descended from ancient reptiles mandates that creatures exhibiting certain bizarre, transitional characteristics must have existed at a particular time in natural history. The fossil record documents the existence of many such animals. Johnson thinks this is a problem for evolution?

Consider also that Darwinists do not claim that similarities imply ancestry; actually they claim precisely the opposite. Hypotheses of common descent mandate anatomical similarities; when those similarities are documented in the fossil record it's called evidence. And surely Johnson understands that the question of whether mammals descended from reptiles is independent of our ability to pick out the precise line of descent from a thicket of fossil candidates.

Here's another example:

There is no publication in the scientific literature - in prestigious journals, specialty journals, or books - that describes how molecular evolution of any real, complex, biochemical system either did occur or even might have occurred.

Michael Behe, *Darwin's Black Box*

Ahem. There are *hundreds* of journal articles addressing the evolution of irreducibly complex machines, a fact pointed out by numerous biologists since the publication of Behe's book. But who outside a handful of professional biologists is likely to know this?

If the evolutionary scientists were better informed or more scientific in their thinking, they would be asking about the origin of information. The materialists know this at some level, but they suppress their knowledge to protect their assumptions.

Phillip Johnson, *The Wedge of Truth*

The picture of professional biologists needing a law professor to point them in fruitful investigative directions is almost too amusing to contemplate, but note Johnson's willingness to impugn the integrity of large groups of scientists. Also note how the evolutionary biologists of the first sentence morphed into the materialists of the second. Johnson complains bitterly when ID's are tarred as religious extremists, but presenting evolutionists as atheists is just fine. Finally, there is the simple point that *plenty* of scientists are seeking the origin of information. Whole books get written on the subject. The origin of life is one of the hottest open problems in biology today.

It is now 140 years since the publication of Darwin's book. Since then, there have been many disputes about Darwinism, to the degree that Darwinists have had to modify their arguments into new Darwinism, thus creating the sect of Neo-Darwinists.

David Foster, "Proving God Exists."

This will come as news to biologists. Neo-Darwinism is the vindication of Darwin's theories, not a desperate attempt to prop them up. It is the marriage of Darwin's original ideas to modern views of genetics. Also, don't overlook Foster's use of the incendiary word "sect" in describing evolutionists.

Examples like this could be multiplied endlessly, but surely the point is made. Anti-evolutionists are not above simply making stuff up to support their case.

6. DOES EVOLUTION EQUAL ATHEISM

If you still think the evolution/ID schism is primarily about rival interpretations of scientific data, consider the following statements:

Now [the dispute over God's existence] takes an inferential form over whether life on Earth could have arisen and developed by chance, or (alternatively) whether it could have arisen and been developed through intelligent design and conscious application. The former case is maintained by atheists and their devotion to Neo-Darwinism, while the latter case is for the believers and their need for a creative God.

David Foster, "Proving God Exists"

The problem with allowing God a role in the history of life is not that science would cease but rather that scientists would have to acknowledge the existence of something important that is outside the boundaries of natural science. For scientists who want to be able to explain everything - and "theories of everything" are now openly anticipated in the scientific literature - this is an intolerable possibility.

Phillip Johnson, *Objections Sustained*

These are just two examples of many such laments, and they reveal the true concern of ID theorists. Foster, after first committing the fallacy of describing evolution as a theory of chance, explicitly identifies

Neo-Darwinism as an ideology for atheists. Johnson believes God-talk causes such dissonance in the minds of biologists, they will glom on to any theory that will protect their assumptions. (Incidentally, "theory of everything" is a term from physics referring to hypotheses for uniting the four fundamental forces of nature into one grand framework. It has nothing to do with metaphysical naturalism.)

Ours is a very religious society, and charges of atheism are serious business. As rhetoric the charge works very well; in the minds of many, atheists are inherently unworthy of trust. The ubiquity of this charge in ID literature speaks volumes regarding their motives and intentions.

The equation of evolution with atheism is false and deeply offensive to countless religious scientists. Darwinism is no more atheistic than any other scientific theory. When astronomers develop theories for the motions of the planets, no one accuses them of atheism for not mentioning God's role in the process. Why, then, is it atheistic to offer naturalistic explanations for life's development through natural history?

7. CONCLUSION

So what are we to make of all this? The specific scientific claims of the ID theorists have been decisively refuted. Their use of rhetoric and propaganda has shown they have little interest in open and honest debate. They take quotations out of context, distort evidence, misrepresent whole scientific disciplines, oversimplify difficult ideas, and impugn the integrity of scientists. All the while they claim God's blessing for their project and invoke conspiracy theories against those who disagree. And when they are done with all of that, they turn around and accuse scientists of arrogance.

Where I come from we call that chutzpah.

Let us tell it like it is. Intelligent-design theory is nonsense both as science and philosophy. It has contributed nothing to our understanding of biology, and never will. The only proper response to their faulty arguments, sleazy rhetoric, and distorted science is contempt.

Sources of ID Quotations

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- (6) Huston Smith, *Why Religion Matters*, Harper Collins, 2001.
- (7) Jonathan Wells, *Icons of Evolution*, Regnery, 2000.
- (8) David Berlinski, "The Deniable Darwin" and "David Berlinski and Critics", *Commentary*, June 1996 and September 1996.
- (9) David Foster, "Proving God Exists, Parts I and II", *The Saturday Evening Post*, Nov-Dec 1999 and Jan-Feb 2000.
- (10) Phillip Johnson, "Evolution as Dogma: The Establishment of Naturalism", *First Things*, No. 6, 1990.
- (11) Jonathan Wells and Paul Nelson, "Homology: A Concept in Crisis", *Origins and Design*, Fall 1997.
- (12) Transcript of the "Firing Line" Debate "Resolved: The Evolutionists Should Acknowledge Creation," held on December 4, 1997.
- (13) Michael Behe's quotation regarding Stuart Kauffman's ideas was posted at the website www.arn.org in an article entitled "Fatuous Filmmaking." The reference is to the PBS documentary series "Evolution."

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