

THE INTELLIGENT ALTERNATIVE TO DARWINISM

November 29, 2000

By

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INTRODUCTION

I was sitting in our apartment on St. Paul Street in Baltimore. It was shortly before we moved to Alger Hiss's apartment in Washington. My daughter was in her high chair. I was watching her eat. She was the most miraculous thing that had ever happened in my life. I liked to watch her even when she smeared porridge on her face or dropped it meditatively on the floor. My eye came to rest on the delicate convolutions of her ear--those intricate, perfect ears. The thought passed through my mind: "No, those ears were not created by any chance coming together of atoms in nature (the Communist view). They could have been created only by immense design." The thought was involuntary and unwanted. I crowded it out of my mind. But I never wholly forgot it or the occasion. I had to crowd it out of my mind. If I had completed it, I should have had to say: Design presupposes God. I did not then know that, at that moment, the finger of God was first laid upon my forehead.¹

Thus did Whittaker Chambers, the famous witness who testified against Alger Hiss, describe to his children one of the most significant events that eventually led him to abandon Communism.

The dawn that broke on Chamber's intellect was the notion of *telos*, or purpose, in biology. It is our nature as intelligent beings to conceive of a project, and then to work toward its

accomplishment. Further, as sentient beings we cannot help but recognize purpose when we see it accomplished, whether in artifact or nature. Whether we examine the interior of a complex turbine engine, or a broken shard of pottery in a desert ruin, we recognize the *telos* embedded there. We don't hesitate to investigate into the object's purpose. The same is true of biological structures. Even scientists that adamantly deny any purpose in biology, nevertheless use teleological language to describe biological structures. The famous British biologist Richard Dawkins, for instance, tells us that "Biology is the study of complicated things that give the appearance of having been designed for a purpose" and that "natural selection ... which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind." (Dawkins 1987, 1,5) But then he goes on throughout *The Blind Watchmaker* to describe in teleological terms, a multitude of "beautiful and elegant" biological structures. For example, "...octopus eyes are very like ours, but the wires leading from their photocells don't point forwards towards the light, as ours do. Octopus eyes are, in this respect, more 'sensibly' designed." Of course, Dawkins doesn't believe that the octopus eye was more sensibly designed, only that in that instance natural selection did a 'better' job of construction, ostensibly from a human designer's point of view. But the point is that it is nearly impossible to refer to any biological structure without noticing (or inquiring as to) the purpose for which it exists. In this case, Dawkins implies that there is an optimum, or preferred design for eyes, and that the octopus eye more closely matches that end than does the human eye.²

Why then, we might ask, is the idea of an intelligent designer behind biological designs, such a controversial idea? If it is so obvious, why do so many scientists deny it? It is my objective in this essay to examine the nature of the controversy between those who assert that an intelligent designer is behind the design in biology (hereafter referred to as ID theorists), and those who deny it. I will propose that the real problem for those who deny *telos* in biology is not that science has shown that life cannot have been intelligently designed, but rather their prior commitment to metaphysical naturalism, which excludes a supernatural Creator in principle, prevents them from considering teleological evidence in the first place. Finally, I will propose that the Intelligent Design Movement offers a reasonable solution to what has become an impasse in the dialog between Darwinist evolutionists, and those scientists who wish to explore the evidence of *telos* in biology.

THE HISTORY OF *TELOS* IN NATURE

More than three centuries before Christ, the Greek philosophers were busily laying the foundations of modern science. Aristotle (384-322 B.C.) developed various systems of classification³. He distinguished between four causes in nature: *material* (what a thing was made of); *formal* (what pattern or plan did the thing fit to); *efficient* (what brought the thing to its present form) and *final* (what was the thing's purpose, or *telos*). He also proposed a model for the cosmos, consisting of concentric spheres with the earth at the center, the planets and sun on intervening spheres, and the stars fixed upon an outer, rotating sphere. All was surrounded by the outermost "Prime Motion" sphere, from which all motion in the universe derived, itself moved by the "First Unmoved Mover." (Hummel 1986, 28-29)

The rise of the Roman Empire, though advancing the development of Western civilization in many significant ways, such as technology (roads and aqueducts) and political science, did little to advance science *per se*. It was the Christian *worldview* that would eventually give birth to "the new science" characterized by a conviction that mathematical laws and mechanical principles governed a purposeful cosmos. But these notions would not surface for more than a millennium. The Church would first have to learn a hard lesson about the relationship between the two revelations of God: Nature and Scripture. Daniel J. Boorstin writes that from the Christianizing of Rome until about A.D. 1300, in the area of geography "Christian faith and dogma suppressed the useful image of the world that had been so slowly, so painfully, and so scrupulously drawn by ancient geographers." The maps that were drawn were oriented with East at the top, and Jerusalem at the center. For "Thus saith the Lord God; this is Jerusalem: I have set it in the midst of the nations and countries that are round about her." (Ezekiel 5:5) Boorstin writes of these maps: "These were Ecumenical maps, for they aimed to show the 'Ecumene,' the whole inhabited world. Designed to express what orthodox Christians were expected to *believe*, they were not so much maps of knowledge as maps of Scriptural dogma."⁴ (Boorstin 1983, 101) Nevertheless, Christianity's outward focus (in Crusades and missions) eventually exposed Christian Europe to many new ideas, such as from Chinese and Islamic peoples, and this, combined with a growing understanding of the Holy Scriptures and a devotion to the correspondence view of truth, eventually led to the birth of Modern Science.⁵

The transition from pre-modern to modern Science is commonly traced through the work of Roger Bacon (13th century), Nicholas Copernicus (16th century), Tycho Brahe (16th century), Johannes Kepler (17th century), Galileo Galilei (16th -17th century) and Sir Isaac Newton (17th – 18th century). For many, Galileo was a champion for freedom of academic inquiry, with science on the side of freedom, and religion on the side of tyranny. But truth is, as they say, “stranger than fiction.” Galileo along with Kepler, and contrary to the reigning Aristotelian/Ptolemaic cosmology, defended Copernicus’ heliocentric model of cosmology. Contrary to modern notions however, the battle engendered by Galileo’s writings was not so much between “science” and “religion” as it was between one scientific paradigm and another.⁶ Church authority was simply the most expedient means of suppressing the contravening evidence revealed in Galileo’s telescope. Not even Galileo saw his castigation as a conflict with the Church itself:⁷

I have two sources of perpetual comfort – first, that in my writings there cannot be found the faintest shadow of irreverence toward the Holy Church; and second, the testimony of my own conscience, which only I and God in Heaven thoroughly know. And he knows that in this cause for which I suffer, though many might have spoken with more learning, none, not even the ancient Fathers, have spoken with more piety or with greater zeal for the Church than I. (Hummel 1986, 124-125)

During the two centuries prior to the publication of Charles Darwin’s *Origin of Species* (1859), “the new science” (of which Sir Isaac Newton was the most prominent figure) transformed scientific understanding in the West into what became known as British natural theology, replacing the Aristotelian worldview with Newton’s “clockwork” Universe. William Dembski writes of it: “Underlying British natural theology from its inception was the fundamental intuition that the order of the universe is inexplicable apart from a designing intelligence.” (Dembski 1999, 74) Though not a Christian in a strict sense, Isaac Newton wrote in his *Principles*: “This most beautiful system of the sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful Being.”⁸ (Hummel 1986, 144) Newton conceived of the Universe as a magnificent mechanism, designed and set into motion by the Creator, and then left to run according to the initial conditions and governing laws so ordained. There would be no place in this cosmology for miraculous intervention. The physical Universe, biology included, was seen as the work of an infinitely wise, and infinitely remote, Creator.

By the late 18th century, British Natural Theology was the reigning paradigm. In *A View of The Evidences of Christianity* (1794), the Christian philosopher William Paley compared the contrivances in biology to a watch. Just as the intricate workings of the watch implied an intelligent watchmaker, so the intricate contrivances in biology, most notably the human eye, implied an intelligent Creator.

THE HISTORY OF NATURALISM

Just as there is an historical development of the concept of purpose in Western thought, so too there is an historical development of naturalism, the belief that life developed naturally from the material universe, without the aid of a Creator. The late astronomer and advocate of naturalism, Carl Sagan, places its beginnings in the first century B.C.:

The ancient Ionians were the first we know of to argue systematically that laws and forces of Nature, rather than gods, are responsible for the order and even the existence of the world. As Lucretius summarized their views, “Nature free at once and rid of her haughty lords is seen to do all things spontaneously of herself without the meddling of the gods.” (Sagan 1996, 310)

Sagan goes on to lament that although naturalism had a good start in ancient Greece, Theism eventually won out, and naturalism would have to wait hundreds of years before getting its turn on the throne:

[I]n the history of ancient Greece, we can see nearly all significant events driven by the caprice of the gods in Homer, only a few events in Herodotus, and essentially none at all in Thucydides. In a few hundred years, history passed from god-driven to human-driven.

Something akin to laws of Nature was once glimpsed in a determinedly polytheistic society, in which some scholars toyed with a form of atheism. This approach of the pre-Socratics was, beginning in about the fourth century B.C., quenched by Plato, Aristotle, and then Christian theologians. (Sagan 1996, 316-317)

As with the development of British natural theology, so also naturalism passed through a “dark” middle age, during which no notably significant event is recorded. Naturalism had to wait until the 17th century to be aroused from its coma. In *The Universe Next Door*, James W. Sire describes the awakening:

Rene Descartes (1596-1650), a theist by conscious confession, set the stage by conceiving of the universe as a giant mechanism of “matter” which people comprehended by “mind.” He thus split reality into two kinds of being in such a way that ever since then the Western world has found it hard to see itself as an integrated whole. The naturalists, taking one rout to unification, made mind a subcategory of mechanical matter. (Sire1988, 61-62)

For brevity’s sake, I will not trace the numerous steps from theism to full-blown naturalism. Sire and others explain in some detail the various philosophical steps that led up to the full abandonment of even a deist perspective on cosmology.⁹ Suffice it to say that by the 19th century, naturalism, at least philosophically, was well established.¹⁰ That is, though God’s existence was not yet officially in question, He was generally considered irrelevant because His only significant act was to initialize the universe. Everything accessible to humans was purely due to chance and law.¹¹ But regarding biology, William Paley’s watchmaker analogy still held considerable sway. What the naturalists needed was a firm rational grounding in science. This was provided by Darwin.

DARWINISM

Charles Darwin (1809-1882) is not only the most significant figure in the development of modern biology, but in the redefinition of science itself in purely rationalistic terms. Richard Dawkins wrote of Darwin’s influence:

...I want to persuade the reader, not just that the Darwinian world-view *happens* to be true, but that it is the only known theory that *could*, in principle, solve the mystery of our existence.... A good case can be made that Darwinism is true, not just on this planet but all over the universe wherever life may be found.

An atheist before Darwin could have said, following Hume: ‘I have no explanation for complex biological design. All I know is that God isn’t a good explanation, so we must wait and hope that somebody comes up with a better one.’ ... Darwin made it possible to be an intellectually fulfilled atheist. (Dawkins 1987, x, 6).

Darwin had no access to molecular biology or modern genetic theory, and so his original formulation of biological evolution was lacking and is no longer in vogue. Suffice it to say that Darwin’s original concepts of random variation of heritable traits, coupled with natural selection remain the core concepts of biological evolution. Darwinian theory today is more precisely known as neo-Darwinism, or the ‘modern synthesis.’ It is beyond the scope of this paper to delve into the subtleties of neo-Darwinian theory and all the arguments for and against it.¹² I will though, provide a rough outline of the modern synthesis, because it is important to the Intelligent Design Argument.

Neo-Darwinian theory is based upon three rather simple premises. The first premise derives from the discovery of DNA and its central role as the storehouse of genetic information. A genotype is a genetic “description” of a biological structure and function. A “phenotype” is that which the genotype describes. The DNA molecule resembles a long, twisted ladder, the “rails” of which are composed of a repeating succession of sugar and phosphate molecules. To each sugar-phosphate group, one of four different nitrogen bases is attached, the whole unit being called a nucleotide. The two “rails” of the ladder are attached to each other by the fitting together of the nitrogen bases, which form the “rungs.” The four different nucleotides (Adenine, Thymine, Guanine and Cytosine) act as letters in the genetic alphabet. Their *sequence* along the length of the DNA molecule is “read” by the cell, and the information so obtained is used to produce biological products (such as proteins and lipids).

The first premise of neo-Darwinism then, is that random modifications occur to the nucleotide sequences in the DNA in an organism’s reproductive cells. The second premise is simply that these random changes occasionally produce meaningful (i.e. useful or advantageous) variations in the organism’s offspring. These genetic *mutations* can result from cosmic radiation, chemical exposure from the environment, or copying errors made during transcription. Although most of these mutations are harmful to the organism, very rarely the “error” introduced supposedly results in a reproductive advantage for the organism. The third premise of neo-Darwinism is known as *natural selection*. When changes to the environment, such as e.g. a

drought or a reduction in average ambient temperature, cause the general population of a species to decline, those creatures endowed with the advantageous mutation do a better job of surviving to the age of reproduction. Therefore they produce more offspring, each carrying the new genetic trait. As this process repeated throughout the eons of history, life tended to increase in variety and complexity. By extrapolation, this theory accounts for all life on earth from a single parent organism.¹³

It is further assumed that, given favorable conditions, even the first living cell could have arisen from non-living chemicals, a process called *abiogenesis*. Though only a very rough sketch of Darwinian theory, this description should prepare a novice reader for what follows.

INTELLIGENT DESIGN AS A SCIENTIFIC REVOLUTION

In *The Structure of Scientific Revolutions*, Thomas S. Kuhn documents the rise and fall of what he calls “paradigms.” Noting that various significant scientific achievements, such as Aristotle’s *Physica*, Ptolemy’s *Almagest* and Newton’s *Principia* served in their times as frames of reference for ‘normal science,’ Kuhn wrote:

[T]hese and many other works served for a time implicitly to define the legitimate problems and methods of a research field for succeeding generations of practitioners. They were able to do so because they shared two essential characteristics. Their achievement was sufficiently unprecedented to attract an enduring group of adherents away from competing modes of scientific activity. Simultaneously, it was sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve.

Achievements that share these two characteristics I shall henceforth refer to as ‘paradigms.’ (Kuhn 1970, 10)

Paradigm shifts do not occur casually. They come about only when two conditions hold. The first condition results as cases arise for which the reigning paradigm offers weak or unsatisfying answers. An example would be the observation of planetary retrograde motion in Aristotle’s day. Aristotle’s cosmology proposed perfection in the heavens: the planets orbited the earth in perfectly circular orbits on crystalline spheres. The trouble was that planets appeared

to stop, reverse direction, stop again, and then continue on their original path. This *retrograde motion* was impossible to reconcile with the perfect, rotating spheres on which the planets presumably rode. More than 100 years after Aristotle, Apollonius of Perga added *epicycles*, (smaller circular orbits centered on the surface of the planetary spheres, which defined the path of the planets relative to the spheres) to Aristotle's model. Cumbersome as they were, they nevertheless preserved the Aristotelian paradigm. The first condition for a paradigm shift occurs as these adaptations to the initial paradigm become unwieldy. But that alone will not suffice:

By themselves [counter instances to a prevalent epistemological theory] cannot and will not falsify that philosophical theory, for its defenders will do what we have already seen scientists doing when confronted by anomaly. They will devise numerous articulations and *ad hoc* modifications of their theory in order to eliminate any apparent conflict. (Kuhn 1970, 78)

The second prerequisite for change is that a new paradigm must be available for consideration:

Let us ... assume that crises are a necessary precondition for the emergence of novel theories and ask next how scientists respond to their existence.... Though they may begin to lose faith and then to consider alternatives, they do not renounce the paradigm that has led them into crisis.... [O]nce it has achieved the status of paradigm, a scientific theory is declared invalid only if an alternative candidate is available to take its place.... The decision to reject one paradigm is always simultaneously the decision to accept another, and the judgment leading to that decision involves the comparison of both paradigms with nature *and* with each other. (Kuhn 1970, 77)

The Darwinian paradigm has survived more than 150 years as the reigning paradigm in biology, but only by constant modification of Darwin's original formulation. One particularly troubling example of incongruent evidence is the fossil record of stasis, in contrast to the Darwinian model of constant, almost continuous change. Philip Johnson explains the problem:

When disconfirming evidence cannot be ignored altogether, it is countered with *ad hoc* hypotheses. Douglas Futuyma's textbook tells college students that 'Darwin more than anyone else extended to living things ... the conclusion that mutability, not stasis, is the natural order.' So he did, and in consequence paleontologists overlooked the prevalence in the fossil record of stasis. Stasis could not come to public notice until it was dressed up as evidence for 'punctuated equilibrium,' which sounded at first like a new theory but turned out to be a minor variant of Darwinism. Darwinists can also explain away stasis

as an effect of stabilizing selection, or developmental constraints, or mosaic evolution – and so, like mutability, it is just what a Darwinist would expect. (Johnson 1993, 154)

Another example, alluded to earlier, is demonstrated by the difficulty Darwinism has had in keeping up with advances in molecular biology. In Darwin's 19th century, cells were nothing more than what Ernst Haeckel called "homogeneous globules of plasm." It was not so difficult to imagine such a cell spontaneously generating in some "warm pond of chemical soup." In the ensuing decades, scientists' understanding of the cell's true complexity continued to sharpen, and the likelihood of its naturalistic origin became less and less plausible. Again, ad hoc modifications to the Darwinian paradigm have been added in an attempt to explain how heritable traits can accumulate in the absence of a cellular mechanism. The whole program is, for a growing population of scientists, rapidly becoming unwieldy. Many other examples exist of incongruities and incoherencies in neo-Darwinian theory, but are outside the scope of this paper.¹⁴

If all that critics of Darwinism have to offer is complaints about the Darwinian paradigm, they fail to meet Kuhn's second criterion for paradigm change. What is needed is an alternative paradigm. And in order to be a legitimate alternative to Darwinism, it must be truly scientific: not just a "god-of-the-gaps" appeal to miracles in response to a lack of naturalistic explanations. Bill Dembski argues that Intelligent Design measures up on all counts:

Intelligent design is three things: a scientific research program that investigates the effects of intelligent causes; an intellectual movement that challenges Darwinism and its naturalistic legacy; and a way of understanding divine action. Intelligent design therefore intersects science and theology. (Dembski 1999, 13)

Notice that Dembski is claiming not only that intelligent design is both a scientific research program, but also that it is more than just a scientific research program. If it is to replace the Darwinian paradigm, it will necessarily be more than a scientific theory, for that is what Darwinism is. Though vehemently denied by some Darwinists, the implications of Darwinism's postulate of a purely natural origin and construction of life, and in particular human life, extend to ethics and theology. As Gene E. Veith explains it:

Darwin's theory of evolution by natural selection had implications far beyond biology. What is true for nature must be true for the individual and society. If nature progresses by competition, struggle and the victory of the strong over the weak, all progress must come in the same way. (Veith 1993, 31)

Veith goes on to show that both Nietzsche and Freud were influenced by Darwin's theory, and that they, together with Darwin, provided the philosophical and "scientific" grounding for fascism.¹⁵

Intelligent design then stands to replace the Darwinian paradigm if it more efficiently explains the data of biological diversity and liberates Darwinism from its "numerous articulations and *ad hoc* modifications."

INTELLIGENT DESIGN AS A SCIENTIFIC RESEARCH PROGRAM

The intelligent design movement got started in the mid 1980's, with the work of A.E. Wilder-Smith, Michael Denton, Charles Thaxton, Roger Olsen and Walter Bradley. Dr. Wilder-Smith published a number of books addressing chemical, thermodynamic and informational problems associated with Darwinism. His writings influenced Thaxton, Olsen and Bradley, who together in 1984, published *The Mystery of Life's Origins: Reassessing Current Theories*, perhaps the first authoritative, yet critical evaluation of origin of life experiments and theories. In 1986, Michael Denton published *Evolution: A Theory in Crisis*. This book was to biology what Thaxton's book was to organic chemistry. All of these books addressed evolution on purely theoretical grounds, and with the exception of Dr. Wilder-Smith's work, were either silent or opposed to young-earth cosmology. This became an important distinction between the intelligent design movement and earlier creationist arguments.

In creationist arguments, the age of the earth and interpretations of the Bible are key issues. This strategy pits theology against modern science, and splits creationists against one another, with some taking an old-earth, and others a young-earth position. ID theorists, though often personally holding to one or the other position regarding the age of the earth, do not focus on that

issue in the ID research program. The key concept for intelligent design is *complex specified information*.

William Dembski, a professor at Baylor University in Texas, and a research fellow at The Discovery Institute,¹⁶ has laid the theoretical groundwork for the intelligent design movement in his book *The Design Inference*. In a later book (*Intelligent Design*), Dembski presents his ideas in a form more accessible to a general readership, and explains the intelligent design program. Rather than quote extensively from his books, I will summarize as follows.

Material objects and events can either be simple or complex, and specified or random. A simple object might be a grain of sand, or a piece of copper wire. A simple event would be like a raindrop striking the ground. Something can be simple and specified, complex and specified, simple and unspecified (a trivial case), or complex and unspecified. If I dump onto a table, a bunch of scrabble tiles, the resulting arrangement of tiles on the table will be complex but unspecified. If I align three of them to form the word 'dog,' this arrangement would be simple and specified. If, on the other hand, I managed to use most of them to spell out this paragraph, the result would be both complex and specified. Complexity and probability are inversely proportional, so that if an event is highly complex, it is necessarily highly improbable. But highly improbable things happen all the time. If I flip a coin 20 times, the sequence of heads and tails that result will be one in 60 trillion. And the same would be true for each sequence of 20 flips. They are all equally complex sequences, but they are unspecified. Now suppose when I flipped the coin, it came up all heads, 20 in a row. That sequence has exactly the same probability as the random flip sequence, but it fits an *independent pattern*, or specification. It also, however demonstrates absolutely no contingency. Only heads turn up. We would be justified in suspecting that the coin is rigged. Chance cannot account for such a sequence. A rigged coin, however, such as a magnetic coin, or a two-headed coin, would be obeying physical laws in producing the sequence. We cannot conclude that the pattern is intelligently designed.

In the movie *Contact*, Jody Foster played the part of an astronomer in the SETI (search for extraterrestrial life) program, searching the heavens for signs of life. While searching for ET life, she detected a sequence of prime numbers (in the form of radio pulses) from 2 to 101, emanating from a distant star. Not only is this sequence extremely improbable, but it also fits an independent specification. She was justified in concluding that the source of the signal was intelligent.

These examples demonstrate what Dr. Dembski termed the “explanatory filter.” In order to determine if something is intelligently caused, we first ask whether the event is *contingent*. Contingency refers to events that are not law-driven. When I flip a fair coin, it might land heads-up, or heads-down. Because either one might equally happen, there is contingency. The direction it travels from my hand is not contingent, but is determined by laws of nature. On a calm day, the coin will accelerate towards the earth, under the influence of gravity. If an event is not contingent, then necessity explains it, and we’re done. If there is contingency, then the next question is whether the event is complex. If not, then it can be explained by chance and the problem is solved. If it is a complex event, then we must determine if there is an independent pattern that would account for the complexity of the event. If not, then again, chance explains it. But if there is such a specification, then we can infer that the event is designed.

This process is not foreign to science, though until Dembski formalized it, it remained ambiguous. Scientific disciplines such as forensics, insurance claim investigation, cryptography, archeology and as already mentioned, the SETI program, all depend on the credibility of this process for their success. In fact, when Darwinists are not suspicious of creationism, they do not balk at the suggestion that life on earth might have been intelligently engineered. The famous Nobel laureate, Francis Crick, suggested as much in his book *Life Itself: Its Origin and Nature*.¹⁷ After convincing his reader of life’s high degree of “organized complexity,” (a term which turns out to be identical to Dembski’s specified complexity), Crick goes on to suggest that life evolved somewhere else in the universe, where the conditions were more favorable than here on earth. In the 20 billion year history of the universe, there would be enough time for *that* life to develop to an advanced stage, and for them to then engineer small packets of life; perhaps bacteria, and to send it out in spaceships to possible sites where it might thrive and evolve. Perhaps one such capsule landed here on earth 3 billion years ago, and took off from there. To this idea, Crick attached the name “Directed Panspermia.” Carl Sagan, an atheist, is quoted on the front of the book, praising it as “A delight ... stimulating and provocative.”

CONCLUSION

The intelligent design movement is content to formalize the empirical process of detecting intelligent causes, and apply it without prejudice wherever the data suggests promising results. If it happens to apply to living things, then so be it. The intelligent design project does not inject religious premises into the laboratory, but leaves the identity of the designer to other disciplines. Consequently, there is no legitimate cause for concern from naturalists. Yet for the most part, their reaction to this project has been anything but congenial.

Examples abound of open hostility towards ID theorists from the Darwinist camp. Dembski was recently fired from his position as founding director of the Michael Polanyi Center for Complexity, Information and Design. The pressure to fire him was put on the president of Baylor University by the faculty of the biology department, because they suspected that Dr. Dembski was a “closet creationist” trying to sneak creationism into the science department. His is just one of many examples in recent years of hostile attack and abuse that ID theorists encounter, and yet their work progresses.

Due to their impressive credentials (many have two or more graduate degrees), careful work and thorough peer review, their books have been published by reputable secular publishers. Despite the hostility from Darwinian zealots, their message is getting out, and more and more scientists are showing interest. It is only a matter of time until the Darwinian paradigm collapses, and when it does, the new paradigm of intelligent design will take its place. Intelligent design will make it possible once again to be an intellectually fulfilled theist.

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Endnotes

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- ¹ Chambers, Whittaker, *Foreward in the Form of a Letter to my Children*, Foreward to *Witness*, New York: Random House, 1952. Available on the Internet at: <http://www.columbia.edu/cu/augustine/arch/chambers.html>
- ² For a counter-argument to Dawkin's claim that the inverted retina is a poor design, see Michael J. Denton, *Selected Excerpts: The Inverted Retina: Maladaptation or Pre-adaptation?* Available online at: <http://www.arn.org/docs/odesign/od192/ir192summ.htm>.
- ³ Aristotle's systems of classifications span political regimes (see J. Budziszewski, *Written on the Heart: The Case for Natural Law* (Downer's Grove, IL: IVP 1997) 33-37); astronomy (see Charles E. Hummel, *The Galileo Connection: Resolving Conflicts Between Science and the Bible*, (Downer's Grove, IL: IVP 1986) 28-29); and physics (Ibid. 30).
- ⁴ For a fascinating expose of the pros and cons of the influence of Christians in Medieval Europe, see Daniel Boorstin, *The Discoverers: A History of Man's Search to Know His World and Himself*, (New York: Random House 1983) 100-124.
- ⁵ The correspondence theory of truth asserts that true things that we come to know, even if imperfectly, nevertheless correspond to objectively real things. For a discussion of scientific realism and the correspondence theory of truth, see J.P. Moreland, *Christianity and the Nature of Science: A Philosophical Investigation* (Grand Rapids: Baker 1989) 139-146.
- ⁶ Of course, it wasn't just Galileo's telescope that caused all the trouble, but rather Copernicus' heliocentric concept of cosmology, followed by the work of Tycho Brahe and Johannes Kepler in establishing observational and mathematical confirmation of it. However, the dominance of Aristotelian cosmology in the universities had kept the Copernican model suppressed. Galileo threatened this dominant paradigm. Hummel, *The Galileo Connection*, 91-102.
- ⁷ In the 13th century, St. Thomas Aquinas synthesized Aristotle's natural philosophy with Christian theology, and by Galileo's time it was the dominant view in and out of the Church. However, Copernicus and Kepler's work made astronomical calculations far simpler, and were thus widely used. Many in the Church of Galileo's day suspected that the Copernican model actually reflected reality, and so were open to observations and conclusions in contradistinction to a geocentric cosmology.
- ⁸ Newton did not believe in the deity of Jesus Christ. He did believe however, in the personal God of the Bible (Hummel, 1986) 142-144.
- ⁹ For more on the development of naturalism, see David A. Noebel, *Understanding the Times: The Religious Worldviews of Our Day and the Search for Truth*, (Eugene: Harvest House 1991), 113-156. For a critique of naturalism as a worldview and scientific paradigm, see Phillip Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law and Education*, (Downer's Grove: IVP 1995)
- ¹⁰ Another and equally important development in the 19th century was Romanticism. For a scholarly perspective this sociological development and its consequences, see Gene E. Veith, Jr., *Modern Fascism: Liquidating the Judeo-Christian Worldview*, (St. Louis: Concordia Publishing House 1993)
- ¹¹ For an interesting take on how the definition of science changed to accommodate naturalism, see Phillip E. Johnson, *Darwin on Trial*, 2nd ed., Chapter 9: *The Rules of Science*, (Downer's Grove: IVP 1993), 113-124
- ¹² To explore the creation/evolution debate from an evolutionist's perspective, see <http://www.talkorigins.org/>; For general exposure to Intelligent Design arguments *contra* Darwinism, see online sources <http://www.arn.org> and <http://www.discovery.org/>
- ¹³ For a brief review of the problems with this scenario, see Steven C. Meyer, *DNA and Other Designs*, available online at: http://www.arn.org/docs/meyer/sm_dnaotherdesigns.htm.
- ¹⁴ For a close look at the problems with natural selection as a tautology, see Paul A. Nelson, *Unfit for Survival: The Fatal Flaws of Natural Selection*, in *Touchstone: A Journal of Mere Christianity*, Volume 12, Number 4, July/August 1999, (The Fellowship of St. James, 4125 W. Newport Ave, Chicago, IL 60641).
- ¹⁵ For more on the influence of Darwinism on ethics and political philosophy, see David A. Noebel, *Understanding The Times 1991*, 266-283.
- ¹⁶ For more information on the Discovery Institute, visit their web page: www.discovery.org
- ¹⁷ Francis Crick, *Life Itself: Its Origin and Nature*, (New York: Simon & Schuster 1981).