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REINTERPRETING THE HISTORY OF LIFE FROM A DESIGN PERSPECTIVE

by

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## ABSTRACT

For most of Western history, scientists took it for granted that living things were designed. Charles Darwin argued that the evidence showed otherwise, and that living things were actually unintended by-products of random variation and natural selection. Since then, evidence has been accumulating that Darwin's theory cannot account for the major features of evolution; but rather than abandon the denial of design, modern Darwinians have converted it into a metaphysical *a priori*. Given the growing list of empirical anomalies and the now-axiomatic exclusion of design, it is a worthwhile exercise to reverse the logic, - i.e., to assume design. Therefore, I begin by assuming that human beings are the intended outcome of the history of life. It follows that the history of life was planned from the outset to provide a temperate environment and nourishing food for us, requiring the establishment of complex, self-sustaining ecosystems. It also follows that the first human beings were born into a world already populated by human-like mammals capable of raising them from birth. This, in turn, required other animals as precursors, implying that what Darwinists regard as a contingent pattern is actually a necessary progression, at least in general outline. Like Copernicus's shift from a geocentric to a heliocentric solar system, the shift from denying to affirming design is a conceptual change with far-reaching implications for our understanding of objective reality. A design perspective accounts for at least some of the anomalies confronting Darwin's theory, and could lead to more fruitful research programmes in biology.

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## 1. HISTORICAL AND PHILOSOPHICAL BACKGROUND

Before the twentieth century, most Western scientists believed that God created living things by design. Belief in God was part of the very fabric of western civilization; and by viewing the world through the spectacles of faith, people saw it as God's handiwork. In the words of John Henry Newman, "I believe in design because I believe in God; not in a God because I see design." (1)

In the eighteenth and nineteenth centuries, however, some thinkers reversed the traditional logic to argue from design to God's existence. William Paley wrote in *Natural Theology* (1802) that someone crossing a heath and finding a watch would see that "its several parts are framed and put together for a purpose," and would conclude that it had been designed by a watch-maker. Analogously, Paley argued, one could conclude that living things are designed by God. (2)

Charles Darwin was born into this intellectual environment in 1809. By the time his *Origin of Species* was published in 1859, Darwin had become convinced that the design which Paley claimed to see in living things was an illusion. According to Darwin, what appears to be design in living things can be explained naturalistically\*, as the result of random variations and natural selection.

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\* In this paper, "naturalism" and "naturalistic" refer to the philosophical doctrine that the physical universe is the whole of reality, and that ideas and the supernatural are human projections.

Darwin argued that just as domestic livestock can be modified by selecting certain variants for breeding, so wild species are modified by a “natural selection” due to competition for survival. According to Darwin, the continuation of such “descent with modification” over millions of years produced all living things from one or a few original organisms. He saw no room for design in this process. When Harvard botanist Asa Gray proposed that God had designed the variations on which natural selection operated, Darwin rejected the idea, and concluded his 1868 *Variation of Animals and Plants Under Domestication* with a refutation of design. According to Darwin, the products of random variation and natural selection cannot be regarded as designed; and human beings, as the latest in a long series of undesigned results, are the most undesigned of all. (3)

Darwin’s modern followers concur. In 1967, paleontologist George Gaylord Simpson wrote: “Man is the result of a purposeless and natural process that did not have him in mind.” (4) In 1970, molecular biologist and Nobel laureate Jacques Monod announced that “the mechanism of Darwinism is at last securely founded,” and thus “man has to understand that he is a mere accident.” (5) And in 1986, zoologist Richard Dawkins wrote a best-selling book entitled *The Blind Watchmaker: Why the evidence of evolution reveals a universe without design*.

But the “evidence” which Dawkins cites in *The Blind Watchmaker* consists almost entirely of computer simulations. Dawkins argues that Darwinism would have to be true even if there were no evidence for it,

because short of postulating the existence of a deity (which Dawkins rejects), Darwin's theory of "*cumulative selection*, by slow and gradual degrees, is the explanation, the only workable explanation that has ever been proposed, for the existence of life's complex design." In other words, what persuades Dawkins that Darwinian evolution is true is not the evidence, but the fact that it is the only tenable naturalistic explanation for the history of life. As he writes in the book's opening chapter, "Darwin made it possible to be an intellectually fulfilled atheist." (6)

Evolutionary biologists are virtually unanimous in their rejection of design, though some (such as paleontologist Stephen Jay Gould) sharply disagree with Dawkins over the sufficiency of Darwin's mechanism of gradual selection. Yet if one wishes to exclude design on scientific grounds, one must do so on the basis of a demonstrated mechanism; mere descent with modification is not enough. This point is unintentionally illustrated by biologist Tim Berra:

"If you look at a 1953 Corvette and compare it to the latest model, only the most general resemblances are evident, but if you compare a 1953 and a 1954 Corvette, side by side, then a 1954 and a 1955 model, and so on, the descent with modification is overwhelmingly obvious. This is what paleontologists do with fossils, *and the evidence is so solid and comprehensive that it cannot be denied by reasonable people.*" (7)

The historical development of the Corvette, however, - which Berra calls "descent with modification," - is undeniably due to construction according to pre-existing patterns, i.e., to design. Ironically, therefore, Berra's analogy shows that descent with modification is compatible with design; only if evolution is due to a naturalistic mechanism can one rule it out.

Evidence has been accumulating for decades, however, that Darwin's mechanism fails to account for major features of evolution. The fossil record (especially where it is most complete) lacks the innumerable transitional forms which Darwin's theory predicts; artificial breeding (no matter how intense or protracted) fails to produce the major modifications which his theory requires; and embryonic development (as revealed by modern comparative embryology) is radically different from Darwinian expectations. According to molecular biologist Michael Denton, not "one single empirical discovery or scientific advance since 1859" has validated Darwin's theory that large-scale evolution is caused by natural selection acting on random variations. (8)

Given the empirical anomalies, and the sharp disagreement over mechanism between Dawkins and Gould, it is clear that the modern Darwinian denial of design rests on non-empirical grounds. It is no longer an inference from evidence, but a naturalistic *a priori*. Modern Darwinists assume that design played no role in the origin and evolution of life, and then interpret the data accordingly. This does not mean that they are necessarily wrong, but it does mean that their exclusion of design is based on philosophical commitments rather than empirical evidence. (9)

To summarize: for most of western history, design in living things was taken for granted, as a consequence of viewing creation through the spectacles of faith. In the eighteenth and nineteenth centuries, some thinkers (most notably William Paley) reversed the logic and argued from evidence for

design to the existence of God. Darwin, however, used the evidence to argue that a naturalistic mechanism produced living things, rendering design unnecessary. In recent decades evidence has accumulated to cast doubt on Darwin's mechanism, but modern Darwinists continue to agree on the denial of design. In effect, they have converted the exclusion of design from an empirical inference to a metaphysical *a priori*.

## 2. ASSUMING DESIGN A PRIORI

One good metaphysical *a priori* deserves another. Since Darwinists have shifted their ground from science to philosophy, it is legitimate to ask whether their axiomatic exclusion of design is the only logical possibility. The answer, obviously, is no. The opposite is not just a possibility but an actuality, since before Darwin design was taken for granted by most western scientists, and since a significant number of scientists still view the world as designed.

In the remainder of this paper, I will assume that living things are designed. That is, I will treat design (rather than its exclusion) as a metaphysical *a priori*. I will not attempt to justify this assumption on theological grounds (as early Christian theologians did), nor on empirical grounds (as modern design theorists do [10]). Nor will I use design to argue for the existence of God (as Paley did), or to speculate on the nature or

motives of the designer. Instead, I will merely take design as given, then see what happens when we use it to reinterpret the history of life.

I do not assume that design extends to every detail of the biological realm. Some Christian theologians (such as John Calvin) did assume design-in-every-detail, and Charles Darwin used this to his rhetorical advantage by pointing to details which he felt were incompatible with God's goodness or beneath God's dignity. To say that some features of the world are designed, however, is not to say that all features are necessarily designed. (11) In this paper, I will assume only that some aspects of the biological realm are designed.

Specifically, I will assume that the human species is designed. This implies a plan: something which is designed is thought of before it is made. I will assume that the human species was planned before life began, and that the history of life is the record of how this plan was implemented. In other words, life began at some point in time, with human beings as the intended outcome.

The Darwinian account of the history of life begins with the most primitive organisms and works its way forward to the recent appearance of human beings. Although this is how the history actually unfolded, from a design perspective the idea of human beings came first, followed by a plan to achieve the goal. In a sense, then, the plan took shape by working backwards from the goal. Although the history of life unfolded from primitive organisms to human beings, it was originally conceptualized in reverse. (12)



What would the plan have to include? In order to survive, a human being needs (as a minimum) a suitable environment, and food and water. Any plan which includes human beings as the intended outcome would have to provide for these needs. It could be argued that human beings have other needs as well; these might include the need for social interactions, or intellectual stimulation, or aesthetic enjoyment. One could argue that certain features of the natural world were designed to fulfill these needs (for example, that beautiful flowers were designed to satisfy our need for aesthetic enjoyment). For the present, however, I will ignore these possibilities, and focus entirely on physical needs.

A design perspective is not a license for unbridled speculation. For example, the assumption that human beings are the intended outcome rules out speculation about the designer's motives, or why we weren't made differently. Human beings, as presently constituted, are taken as given, and in this context it makes no sense to ask why we do not have six legs, or why we are not born fully grown, or why we cannot survive without food. The question is not why we are the way we are, but what the history of life would look like if it were designed to prepare the way for us and provide for our physical needs.

### 3. PROVIDING FOR OUR NEEDS

With the aid of modern technology, we are now capable of surviving in extremely hostile environments, including extremes of heat and cold. When human beings first appeared, however, such technology was still in the future, so the environment must have been congenial to unprotected human life. From a design perspective, this human-friendly environment was planned.

Such an environment was possible only because the fundamental physical constants of the universe had the precise values they have, as advocates of the Anthropic Principle have pointed out. But these constants are consistent with a wide range of environments, whereas life requires a relatively narrow range of temperature, pressure, and other physical parameters. Therefore, if the entire universe was planned with human beings in mind, then not only the universal constants but also suitable local conditions were designed from the outset.

Suitable local conditions must have included an atmosphere containing the oxygen and carbon dioxide which are necessary for human life. Since humans use oxygen in their metabolism and release carbon dioxide as a waste product, a stable environment would have to include a mechanism for recycling carbon dioxide by converting it back into oxygen. This mechanism is photosynthesis.

Using energy from the sun, photosynthesis also produces carbohydrates, another raw material of human metabolism. Photosynthesis

thus exactly reverses the human metabolic process by converting carbon dioxide and water into oxygen and sugar. This is a remarkably efficient system for maintaining an environment congenial to human life.

Photosynthesis relies on chlorophyll, a green pigment, and many associated enzymes. It also requires a supply of water and access to carbon dioxide, so something very much like a green plant would seem to be necessary if photosynthesis is the only (or the best) way to reverse metabolism and provide the balanced atmosphere needed by human beings. Unless some other mechanism could be shown to be capable of fulfilling the same role, a design perspective implies that photosynthesis, and thus something very much like green plants, were a necessary part of the original plan.

Carbohydrates are necessary for human nutrition, but far from sufficient. The human body cannot synthesize everything it needs from carbohydrates; it also needs specific amino acids, certain minerals (such as iron), and vitamins (including essential subunits of metabolic enzymes). Our nutritional needs are quite complex, and must be met on a regular basis if we are to survive, so we are absolutely dependent on a variety of food sources. These are found in the plants and animals around us. Since our needs include complex organic molecules found only in other living things, those living things are necessary for our existence.

What sort of diet would be minimally adequate for human health? Some people claim that a strictly vegetarian diet is sufficient, while others insist on the need for a varied diet which includes animal products. The

question here is whether a strictly vegetarian diet would have sufficed for the first humans, before the advent of agriculture. If not, then some animal products were necessary; and if animals as well as plants were needed by the first humans, then a design perspective entails their inclusion in the original plan.

Whatever organisms may have been necessary for human nutrition, their existence required a balanced ecosystem which accommodated their needs. The original plan must have included a self-sustaining biosphere in which reproduction and growth were balanced by death and decay. Since most plants obtain organic nutrients in the soil, those nutrients must have been provided by other organisms, including some which “fix” nitrogen (an essential nutrient) from the atmosphere. The balance among organisms in an ecosystem is normally quite complex, and ecologists frequently discover that organisms previously thought to be unessential are necessary elements in that balance.

How many organisms must be present for an ecosystem to be stable and self-sustaining? Although a human mind might be able to imagine simpler ecosystems than those which now exist, there are no empirical grounds for claiming that existing ecosystems are unnecessarily complex. Furthermore, there are no compelling theoretical grounds for claiming that design entails simplicity. In other words, the assumption that human beings were designed may entail much of the ecological complexity we presently observe. In any

case, it is clear that planning for human beings requires planning for many other organisms, as well.

#### **4. GETTING FROM THERE TO HERE**

The need for large numbers of organisms becomes even more evident when we try to imagine how human beings appeared on what was originally a lifeless planet. Although there is no consensus among paleogeologists about atmospheric conditions on the primitive earth, those conditions were almost certainly different from today's. The first organisms must have been capable of surviving in those conditions, and from a design perspective they must also have been capable of transforming those conditions into an environment more favorable to human life.

In other words, primitive organisms had to pave the way for the stable ecosystems we see today. A barren planet had to become a garden; soils had to be produced, containing organic nutrients for land plants. To use current biological terminology, ecological niches were filled by organisms adapted to survive under local conditions. Those organisms then transformed their conditions, and other organisms took over. A somewhat similar progression can be observed today when a volcanic island is wiped clean by an eruption, then gradually re-colonized by organisms which transform it back into a tropical paradise. The principal difference between the transformation of the primitive earth and a modern volcanic island, of course, is that the latter is

due to already existing organisms from a nearby island, while the former is due to previously non-existent organisms.

Producing a congenial environment with nutritious foods would have been a necessary part of any plan intended to prepare the way for human beings, but it would not have been sufficient. Assuming that the first humans were like us, they began as embryos and developed through birth, infancy and childhood. Human babies need milk in order to survive and grow, so mammals had to exist before humans appeared. (13) And not just any mammal; the first human baby presumably had to be born from a creature very much like itself, - i.e., a human-like primate. This creature, in turn, could only have been born from a creature intermediate in some respects between it and a more primitive mammal. In other words, a plan for the emergence of human beings must have included something like the succession of prehistoric forms we find in the fossil record.

Some people believe that the first human beings were created fully grown. But even if we ignore psychological considerations and restrict ourselves to physical ones, birth and growth are essential aspects of human beings as we know them. A creature which begins life without passing through birth and childhood would be so unlike us that we could not regard it as truly human, regardless of how much it might superficially resemble us. Even Jesus started life as a baby. And since human babies are totally dependent on other creatures for their survival during early development,

animals capable of raising the first human babies must have been a necessary part of the original plan.

Similar reasoning could be applied to earlier episodes in the history of life. For example, just as mammals were necessary precursors of the first humans, mammal-like reptiles were presumably necessary precursors of the first mammals, and so on. The emergence of human beings thus depended on a progression of creatures which increasingly resembled us. Although this is superficially similar to the Darwinian notion of common descent, it is different from the latter in the sense that precursors are not necessarily biological ancestors. From a design perspective, precursors need not be progenitors, but only providers of essential nourishment and protection. Successive organisms are thus "related" in the sense that they represent planned stages in the history of life, but they are not genetically related as ancestors and descendants. A planned succession would not require the innumerable transitional forms which Darwin predicted; design theory is thus more compatible than Darwinism with the discontinuities found in the fossil record.

Design theory also does a better job than Darwin's theory of accounting for homology. According to Darwin, features in diverse organisms are structurally similar ("homologous") because they are inherited from a common ancestor. Biological inheritance implies that such features are more similar because they are produced by similar genes or similar developmental pathways, but this implication is contradicted by the genetic and

embryological evidence. (14) In a design view, however, homologies exist (at least in part) because new organisms need to be protected and nourished by organisms somewhat like them. But homologies need not be produced by similar genes or developmental pathways, since there is no insistence on the sort of mechanistic continuity required by Darwinian common descent.

## 5. CONCLUSIONS

The conceptual shift from denying design to affirming it might be compared to the conceptual shift from a geocentric to a heliocentric view of the solar system. It seems that Copernicus originally regarded the shift as an intellectual exercise, but by the time of Galileo it was clear that it provided a better scientific account of the astronomical evidence than the Ptolemaic approach. Similarly, a design perspective on the history of life might turn out to account for the biological evidence better than Darwinian evolution.

For example, by assuming that human beings are the intended outcome of the history of life, design theory requires the emergence of photosynthesis and green plants, or something very much like them. Darwin's theory does not explain why any particular organism evolved; beyond insisting that it be able to survive, Darwinism fails to specify why any given form exists. Thus creatures which for Darwinism remain unexplained are for design theory necessary prerequisites for human life.



Furthermore, by taking human birth and infancy as given, design theory implies that some other particular forms are necessary, including human-like primates and their precursors. Design theory thus requires progressive stages in the history of life, such as we see in the fossil record, but unlike Darwin's theory it does not predict innumerable transitional forms which do not exist. Design theory also suggests that homologies exist, at least in part, so that organisms can prepare the way for others intended to follow them. Unlike Darwinism, however, it does not imply that homologous features are produced by similar genes or developmental pathways, and so does not run afoul of the evidence.

Although this preliminary analysis may not be correct in all respects, it at least demonstrates that a design perspective has implications for our understanding of the biological evidence. As the analysis is refined and expanded, and as our knowledge of ecology and human physiology increases, more detailed implications will follow. In this way, a design perspective may eventually provide a detailed account of the history of life which is more faithful to the evidence than Darwin's theory, and thus provide a framework for more fruitful research programmes in biology.

## NOTES

1. John Henry Newman, *Letters and Diaries* (25:97), quoted in Jonathan Wells, *Charles Hodge's Critique of Darwinism* (Lewiston, NY: Edwin Mellen Press, 1988), p. 9.
2. William Paley, *Natural Theology* (1802; reprinted by St. Thomas Press, Houston, TX, 1972), p. 2. The distinction between traditional logic (from God to design) and 19th century natural theology (from design to God) is examined in Jonathan Wells, *Charles Hodge's Critique of Darwinism*, and summarized in Jonathan Wells, "Darwinism and the Argument to Design" (*Dialogue and Alliance* 4 [1991]: 69-85).
3. For a detailed discussion of the exchange between Darwin and Gray, see Jonathan Wells, *Charles Hodge's Critique of Darwinism*, pp. 187-197.
4. George Gaylord Simpson, *The Meaning of Evolution* (revised edition; New Haven, CT: Yale, 1967), p. 345.
5. Jacques Monod, quoted in Horace Freeland Judson, *The Eighth Day of Creation* (New York: Simon & Schuster, 1979), p. 217.
6. Richard Dawkins, *The Blind Watchmaker* (New York: W.W. Norton, 1986), pp. 6, 287, 317 (emphases in the original).
7. Tim M. Berra, *Evolution and the Myth of Creationism* (Stanford, CA: Stanford University Press, 1990), p. 117 (emphasis in the original).
8. Michael Denton, *Evolution: A Theory in Crisis* (Bethesda, MD: Adler & Adler, 1986), pp. 87, 345. For more information about how the evidence fails to support Darwin's theory, see Percival Davis and Dean H. Kenyon, *Of Pandas and People* (second edition; Dallas, TX: Haughton, 1993) and Phillip E. Johnson, *Darwin on Trial* (second edition; Downer's Grove, IL: Intervarsity, 1993).
9. The philosophical character of modern Darwinism is analyzed in Phillip E. Johnson, *Reason in the Balance* (Downer's Grove, IL: Intervarsity Press, 1995).
10. For examples of modern arguments that living things exhibit design, see Davis and Kenyon, *Of Pandas and People*; essays by Stephen C. Meyer and William A. Dembski in J.P. Moreland (ed.), *The Creation Hypothesis* ((Downer's Grove, IL: Intervarsity Press, 1994); and Michael Behe, *Darwin's Black Box* (New York: The Free Press, 1996).
11. For a detailed discussion of the theological background of this issue, see Jonathan Wells, *Charles Hodge's Critique of Darwinism*, pp. 105-145.

12. This is the approach of Unification thought. See Sang Hun Lee, *Fundamentals of Unification Thought* (Tokyo: Unification Thought Institute, 1991), pp. 63-64; and Unification Thought Institute, *From Evolution Theory to a New Creation Theory: Errors in Darwinism and a Proposal from Unification Thought* (Tokyo: Kogensha, 1996), pp. 66-74.

13. Soy-based infant formula (even if it were suitable as a universal replacement for milk) is a product of modern agriculture and technology; it is not a plausible element of the environment into which the first human beings were born.

14. For more detailed discussions of the problem of homology, see Gavin de Beer, *Homology: An Unsolved Problem* (Oxford: Oxford University Press, 1971); Brian K. Hall (ed.), *Homology: The Hierarchical Basis of Comparative Biology* (San Diego, CA: Academic Press, 1994); and Jonathan Wells, "Homology in Biology: A Problem for Naturalistic Science," presented at a Conference on Naturalism, Theism, and the Scientific Enterprise, Department of Philosophy, University of Texas, Austin TX, February 1997 (posted on the World Wide Web at <http://www.dla.utexas.edu/depts/philosophy/faculty/koons/ntse/papers/Wells.html>).