

### *Darwin's Doubt*

By Stephen Meyer (New York, NY: Harper Collins, 2013), 498 pp.

Having read and favorably [reviewed](#) Meyer's previous book, *Signature in the Cell*, I was eager to see what he had to say in his latest work, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design*. I was not disappointed.

In *Signature*, Meyer addressed the question of whether life could have arisen by chance (no!). Even though *Signature* was oriented around the question of the *origin* of life—and did not deal with the plausibility of evolution producing the imagined tree of life from that point forward—many of his critics responded as if he had debunking the theory of evolution as his goal. The frequent mischaracterization of his previous work became the motive, in part, for this book which addresses the follow-on question: if we imagine for the sake of argument that the complexities of DNA, RNA, and the “simple cell” could have arisen by chance from a primordial chemical soup, is it plausible thereafter for Darwinian evolution to explain the diversity of life which we see around us?

. . . the repeated prodding of my critics has paid off. Even though I did not write the book or make the argument that many of my critics critiqued in responding to *Signature in the Cell*, I have decided to write that book. And this is that book. [p. viii]

Meyer constrains his treatment to what could be termed the “soft underbelly” of the theory of evolution: its inability to explain the sudden and prolific origin of animals with widely-divergent body plans as evidenced by the fossil record associated with the Cambrian period—the popularized “Cambrian Explosion.” The appearance, all at one epoch, of such a diversity of life forms—without record of intermediate precursors—cannot be adequately explained by the gradual over-time modification of one life form into another.

For the most part, microevolutionary changes (such as variation in color or shape) merely utilize or express existing genetic information, while the macroevolutionary change necessary to assemble new organs or whole body plans requires the creation of entirely new information. As an increasing number of evolutionary biologists have noted, natural selection explains “only the survival of the fittest, not the arrival of the fittest.” [p. x]

In the first few chapters Meyer surveys evidence of the “Cambrian Explosion” which was something which Darwin and other scientists of his time were well aware of and which gave Darwin himself pause concerning his new theory.

Darwin frankly described his concerns about this conundrum in the *Origin*: “The difficulty of understanding the absence of vast piles of fossiliferous strata, which on my theory were no doubt somewhere accumulated before the Silurian [i.e., Cambrian] epoch, is very great,” he wrote. “I allude to the manner in which numbers of species of the same group suddenly appear in the lowest known fossiliferous rocks.” The sudden appearance of animals so

early in the fossil record did not easily accord with Darwin's new theory of gradual evolutionary change . . . [p. 7]

Meyer then takes the reader on a brief tour of fossil evidence from the Burgess Shale in Canada and other fossil sites in China. What is particularly interesting regarding the fossil evidence from China is the preservation of soft body parts. This is significant because it has been held by many that the lack of Precambrian fossil evidence could be explained by the inability of the fossilization process to preserve soft animal structures. The evidence from China shows otherwise. What some have explained as "missing fossils" then becomes "missing precursors" to the Cambrian animals.

If the Precambrian sedimentary strata beneath the Maotianshan Shale preserved the soft tissues of tiny, microscopic sponge embryos, why didn't they also preserve the near ancestors of the *whole* animals that arose in the Cambrian, especially since some of those animals must have had at least some hard parts as a condition of their viability? If these strata could preserve embryos, then they should have preserved fully developed animals--at least, if such animals were present at the time. That well-developed, clearly ancestral animal forms were not preserved, when tiny sponge embryos were, strongly indicates that such forms were simply not present in the Precambrian layers. [p. 68]

Meyer includes an insightful, even humorous interchange between a paleontologist in America and a Chinese colleague presenting evidence critical of Darwin's theory:

. . . one professor in the audience asked Chen, almost as if in warning, if he wasn't nervous about expressing his doubts about Darwinism so freely--especially given China's reputation for suppressing dissenting opinion. I remember Chen's wry smile as he answered, "In China," he said, "we can criticize Darwin, but not the government. In America, you can criticize the government, but not Darwin." [p. 52]

Along the way, Meyer surveys academic journals which provide evidence that at the highest levels of scholarly evolutionary investigation there is considerable disagreement concerning the viability and explanatory power of mechanisms and assumptions which the popular media represents as being among the established "facts" of evolution. Problems associated with the oft-heard "molecular clock" and disagreement concerning the origin of all life from a shared "tree of life" are among the awkward facts which the media and educational system consistently gloss over.

Meyer leaves no stone unturned as he moves between various theories which have been offered in an attempt to explain the sudden appearance of the Cambrian fossils while lacking fossil evidence for the expected precursors. It is this fact which led to the rise of "punctuated equilibria"--the notion that evolution must have consisted of long periods of stasis (captured by the fossil record) interspersed with short periods of rapid change (which the fossil record fails to show). Meyer discusses numerous problems associated

with “punk eek” such as:

The late-Precambrian and Cambrian fossil records present another difficulty for punctuated equilibrium. Though Gould and Eldredge envisioned new traits becoming fixed in small isolated populations where speciation eventually occurs, they envisioned these traits first arising during periods of stasis in the large populations from which the smaller populations later separated. Gould realized that only stable large populations would afford enough opportunities for mutations to *generate* the new traits that macroevolution requires. At the same time, he recognized that these new traits would have a far greater chance of *being fixed* into small, isolated populations where the random loss of some traits makes the fixation of others more likely . . . But by relying on the accumulation of new traits within large parent populations, Gould undercut his own rationale for concluding that the fossil record should not preserve many intermediate forms. The reason for this is obvious: if novel genetic traits arise and spread within a large population of organisms, they are more likely to leave behind fossil evidence of their existence. . . . Thus, the process by which Gould envisions new genetic traits arising in large populations implies that new forms of life--some presumably transitional to other forms--should be preserved in the fossil record. [p. 144]

Meyer turns his attention to the problem of whether microevolutionary mechanisms (associated with the adaptation of existing variability within organisms) have the adequate explanatory power to produce sufficient new genetic information needed to produce what are assumed to have been macroevolutionary developments leading to large-scale change of one type of animal into another. Some of the information in this section will be familiar to readers of *Signature* since it deals with information theory (Shannon, etc.) and mathematical challenges associated with random exploration of combinatorial wastelands in search of favorable mutations which are heritable, preserved, and lead in a cumulative direction toward a viable new body plan. The mathematical problems with producing “information by chance” are shown, once again, to be overwhelming. This is to be expected after reading *Signature* and especially when one bears in mind that the subtitle of this book will point to the evidence of *intelligence* behind information—the only known source true information.

Not only is the math opposed to the possibility of producing new information microevolution leading to through macroevolution, but the requirement that the organism remain viable during the entire process of imagined transition poses yet a steeper improbability:

When modifying the design of a machine, an engineer is not bound by the need to maintain a real continuity between the first machine and the modification. . . . But in evolution, transitions from one type to the next presumably involve a greater continuity by means of a vast number of intermediate types. Not only must the end product--the final machine--be

feasible, but so must be all the intermediates. The evolutionary problem is, in a real sense, the gradual improvement of a machine while it is running!  
[Frazzetta, cited on p. 232]

As an electrical engineer by profession and a software engineer by practice, this very requirement was one of numerous sticky problems which paved the way for my own departure from evolutionary indoctrination!

Although many of the details and problems which Meyer had presented through chapter 13 were familiar to me, his subsequent treatment of “epigenetic” factors in the development of organisms was an area I had not read much about. The idea is basically this: the assumption and commonly-promulgated view that DNA and genetics are “where all the action is” concerning the encoding of information which determines attributes of a living creature is over-simplistic. When it comes to establishing major aspects of an organism—such as its body plan during embryological development—information beyond (epi) genetics comes into play. In a similar way to which so-called “junk DNA” was not appreciated because its role was not understood, the importance and role of information outside the genetic storehouse of DNA and the part it plays in the development of life forms has only recently begun to be recognized. An important aspect of the epigenetic reality is its immunity from mutation—the commonly assumed mechanism which propels evolutionary theory:

. . . it turns out that mutating epigenetic information doesn’t offer a realistic way of generating new forms of life. First, the structures in which epigenetic information inheres--cytoskeletal array and membrane patterns, for example--are much larger than individual nucleotide bases or even stretches of DNA. For this reason, these structures are not vulnerable to alteration by many of the typical sources of mutation that affect genes such as radiation and chemical agent. Second, to the extent that cell structures can be altered, these alterations are overwhelmingly likely to have harmful or catastrophic consequences. . . . Altering the cell structures in which epigenetic information inheres will likely result in embryo death or sterile offspring . . . [p. 285]

Thus, epigenetic information is far more robust in the face of mutational influences and *if* it does succumb to alternation, the change leads in the direction of organism death. Thus, to use the previous analogy of modifying a machine while it continues to operate, epigenetic “machines” are much more difficult to modify and modifications, when made, will nearly always lead to operational failure—terminating any successive accumulation of changes required by macroevolution. Epigenetic mutation then becomes akin to the wholesale modification of the operating system of a space vehicle while in the midst of sensitive docking operations. How many astronauts would willingly sign up to pilot such a craft? Given their IQ, I suspect none.

Meyer closes out his consideration of viability of evolutionary mechanisms by surveying post neo-Darwinian models. Some of the ideas involved are interesting, but as Meyer amply demonstrates, lacking in objective evidence. They fall mainly into the category of:

“Since we *know* life forms arose by chance processes but we don't have an understanding of how neo-Darwinianism could produced the required changes, lets assume it *must* have happened this way instead.”

As expected, the final section of the book contains Meyer's “inference to the best explanation” for the rise of complex specified information evident within living organisms: design by an intelligent agent. Much of the material in this section represents a distilled presentation of similar arguments found in *Signature*. As in *Signature*, Meyer notes that the only source of complex information ever known in the history of the world is *design by an intelligence*. It is in this sense that information represents the “smoking gun” pointing to an intelligent origin for life – a conclusion which methodological materialism cannot allow.

Along the way, Meyer makes the compelling observation that the inference from information to intelligence is every bit as “scientific” as other forms of historical investigation—which deals in a realm where the well-worn process of repeatable scientific methodology cannot follow. The claim that “intelligent design” (ID) is not true science is merely a ploy to tilt the playing field in favor of evolutionary theory. When looked at more objectively, ID and evolutionary theory have much in common:

The inference to intelligent design is based upon the same method of historical scientific reasoning and the same uniformitarian principles that Charles Darwin used in *On the Origin of Species*. The similarity in logical structure runs quite deep. Both the argument for intelligent design and the Darwinian argument for descent with modification were formulated as abductive inferences to the best explanation. Both theories address characteristically historical questions; both employ typically historical forms of explanation and testing; and both have metaphysical implications. Insofar as we regard Darwin's theory as a scientific theory, it seems appropriate to designate the theory of intelligent design as a scientific theory as well. [p. 391]

Even so, the media (and courts) have been hoodwinked into believing that inferring intelligence from the presence of information is “unscientific.” Yet intelligence remains the *only demonstrable source of information ever known*. So much for the objective methodology of modern science which continues to snub ID as a spiritually-motivated belief without substance.

Meyer presents a helpful summary of what he has set out to communicate:

. . . the neo-Darwinian mechanism fails to account for the origin of genetic information because: (1) it has no means of efficiently searching combinatorial sequence space for functional genes and proteins and, consequently, (2) it requires unrealistically *long waiting times* to generate even a single new gene or protein. . . . the mechanism cannot produce *new body plans* because: (3) early acting mutations, the only kind capable of generating large-scale changes, are also invariably deleterious, and (4) genetic

mutations cannot, in any case, generate the *epigenetic* information necessary to build a body plan. [p. 411]

This is far from an academic debate. Properly identifying the source of how all life—including man—came to be on this planet has immense social ramifications.

Richard Dawkins and other New Atheists may find it untroubling, even amusing and certainly profitable, to muse over the prospect of a universe without purpose. But for the vast majority of thoughtful people, that idea is tinged with terror. Modern life suspends many of us, so we feel, high over a chasm of despair. It provokes feelings of dizzying anxiety--in a word, vertigo. The evidence of a purposeful design behind life, on the other hand, offers the prospect of significance, wholeness, and hope. [p. 412]

If we continue to stand by and watch the destructive cancer of the atheistic world view work its way through our educational system, we can only expect to see an attendant increase in social ills, including hopelessness and suicide—especially among the young.

Meyer is to be commended for exposing the “just-so” fairy-tale of evolution, in regard to the imagined origin of life from non-life (*Signature*) and in the assumed development of all life forms from a common ancestor (*Doubt*).

We can only pray that his message finds broader consideration, especially among young adults who have been robbed of a purposeful life. It is they who must lead the way back to an understanding of what it means to be uniquely human in a purposeful world created by God.

Reviewed by Tony Garland of [www.SpiritAndTruth.org](http://www.SpiritAndTruth.org).