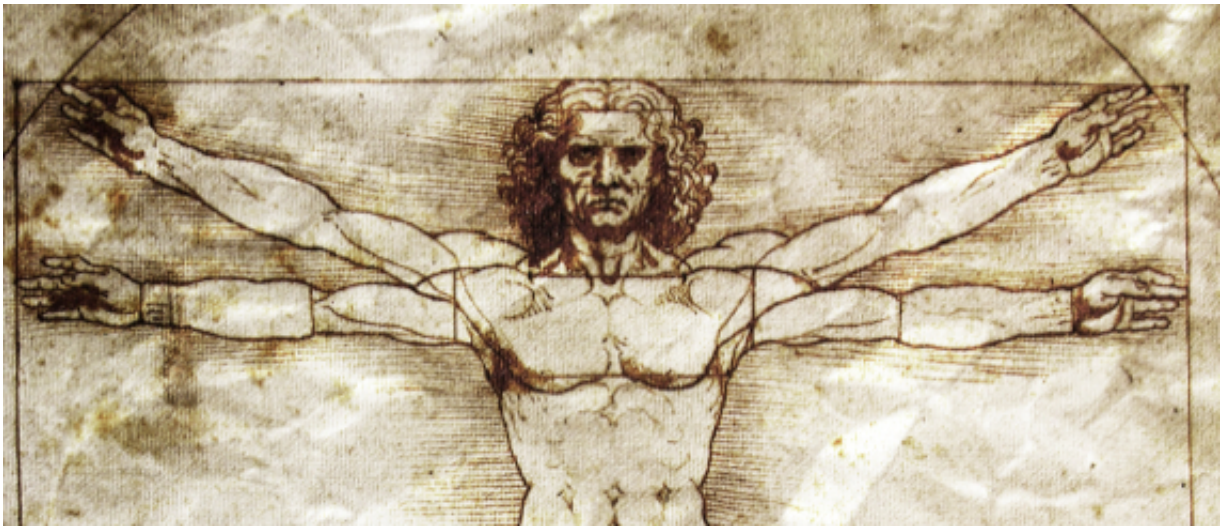
THE BIOLOGOS FOUNDATION

Did evolution have to result in human beings?



Introduction

Behind many questions about evolution, there is a curiosity about its implications for the significance of humans. As an example, this response will address the question of whether biological evolution necessarily had to result in humans. Since the process of evolution has seemingly random mutations as a starting point, it seems possible that Earth could have been the home of an entirely different assortment of creatures. Thoughts like this can have a tremendous impact on humans' sense of significance. These ideas also appear on the surface to be inconsistent with the belief in a creator who had human beings in mind.

There are many avenues from which to approach the topic of human significance. First and foremost, God is sovereign and timeless, so it is certainly possible for God to create humans through an inevitable process that appears entirely random. Even if the process were proven to be random, the possibility of God's guidance in the evolutionary process still exists. Another possibility is that God intentionally integrated freedom in the evolutionary process and chose not to predetermine every detail of its outcome.[1] These, however, are questions of a different sort. Putting these questions to the side, this response will address whether the process of evolution makes humans any less significant.

First, it should be clarified that the question of humans' inevitability does not involve the specific details of their body plan. The discussion of whether human evolution was inevitable does not involve the specific details of a body plan. There is nothing about the exact number of fingers or the exact size of a nose that makes someone a human, though it is true that certain features of the human body have played a crucial role in human evolution.

Humans: Accidental, Incidental?

Concerns that the human species might have evolved by chance come directly from the definition of evolution, or the process that begins with the unpredictable mutations of an organism's DNA. To the best of scientific knowledge, there are no determinate rules that require these mutations to take any one direction over another. The late paleontologist and author Stephen J. Gould writes, "Alter any early event, ever so slightly and without apparent importance at the time, and evolution cascades into a radically different channel."[2] It seems, therefore, if human DNA had gone in a slightly different direction, a very different species may have evolved. "Replay the tape a million times from [the] beginning," writes Gould, "and I doubt that anything like Homo sapiens would ever evolve again."[3]

However, Gould's perspective is not the only view on the inevitability of Homo sapiens.

Humans: Inevitable, Intentional

Simon Conway Morris presents a different perspective, arguing humans, or a human-like species, are actually an inevitable part of evolution. Morris is not proposing a different mechanism for human evolution, merely a different observation of its possible outcomes. Morris would agree that any slight difference in the history of human DNA would result in a different evolutionary path. Unlike Gould, however, Morris argues each of those possible pathways would inevitably lead to something like the human species. Morris writes:

> "The prevailing view of evolution is that life has no direction — no goals, no predictable outcomes. Hedged in by circumstances and coincidence, the course of life lurches from one point to another. It is pure chance that 3 billion years of evolution on Earth have produced a peculiarly clever ape. We may find distant echoes of our aptitude for tool making and language and our relentless curiosity in other animals, but intelligence like ours is very special. Right?"
>
> "Wrong! The history of life on Earth appears impossibly complex and unpredictable, but

> take a closer look and you'll find a deep structure. Physics and chemistry dictate that many things simply are not possible, and these constraints extend to biology. The solution to a particular biological problem can often only be handled in one of a few ways, which is why when you examine the tapestry of evolution you see the same patterns emerging over and over again." [4]

The patterns Morris mentions are also referred to as convergences in the evolutionary process. In his most recent book, *Life's Solution*, Morris gives many examples of physical traits or abilities found repeatedly among different species.[5] Normally, such similarities are understood asthe result of common ancestry. However, the species in Morris's examples are known to be distantly related. In many cases, not even these species' common ancestor shared the same trait. The implication is that several different species have independently developed similar traits.

The examples of convergence range across many levels of biology. One popular and straightforward example is the human eye. It turns out that several other species share a nearly identical visual system to that of the human eye, including the octopus.[6] However, humans and octopuses have separate predecessors, neither of which shared this characteristic. Two very different evolutionary paths arrived at the same visual system. If Gould's supposition is correct, and there was an infinity of other possible outcomes, then this example of convergence is all the more improbable. Morris's argument, conversely, is that the laws of nature allow for only a few solutions to any particular problem. It appears the eye has developed independently at least seven times over the course of evolutionary time.

Human Significance

To see evidence for human significance, one need only consider Morris's examples of convergence for many of the traits that are particularly relevant for human-like beings. These examples include basic senses like balance, hearing and vision, as well as highly advanced features like the human brain. Morris argues that evolution does not pose any threat to human significance. Characteristics such as a large brain capable of consciousness, language and complex thought would inevitably have to emerge from the evolutionary process. Morris writes:

> "Contrary to popular belief, the science of evolution does not belittle us. As I argue, something like ourselves is an evolutionary inevitability, and our existence also reaffirms our one-ness with the rest of Creation." [7]

The exact anatomical features of this ultimate sentient being might not be precisely specified by the evolutionary process, however. This thought can be unsettling to anyone who imagines our

particular body plan is part of the *imago Dei*, or image of God. Despite the marvelous paintings in the Sistine Chapel, there is no reason to think that God the Father has a physical body that looks like ours.

God's Sovereignty in the Evolution of Humans

Belief in a supernatural creator always leaves open the possibility that human beings are a fully-intended part of creation. If the Creator chooses to interact with creation, he could very well influence the evolutionary process to ensure the arrival of his intended result. Furthermore, an omniscient creator could easily create the universe in such a way that physical and natural laws would result in human evolution.

Although the unpredictable mutations of DNA can make any species appear entirely accidental, Simon Conway Morris also puts forward strong arguments in favor of the inevitability of creatures that have the attributes of humans. From this perspective, it seems the evolutionary process itself might be geared toward human life.

Another interesting question should be addressed: If the laws of nature are such that evolution should always result in human beings, would it also be expected that human life should abound throughout the universe? Regardless of Morris's arguments, the fact that life could emerge from inanimate matter is still a mystery. If conditions on another planet allowed for life on that planet, Morris's argument would give reason to believe that something human-like should finally evolve. Still, his examples of convergence give no reason to increase or decrease the belief that life has in fact begun anywhere else. Given the current lack of observed extraterrestrial life, the subtitle to Morris's book should now be clear: "Inevitable Humans in a Lonely Universe."

Consulted Experts:
The BioLogos Foundation is grateful for the assistance of Darrel Falk in drafting this response.

Notes

1. This view is also referred to as Open Theology.
2. Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History* (New York: W.W. Norton, 1989). Cited in: Richard E. Lenski, "The Eyes Have It," *Nature* 425, no. 6960 (2003): 767.
3. Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History*, 289.

Emphasis Gould's.

4. S. Conway Morris, "We Were Meant to Be ..." *New Scientist* 176, no. 2369 (2002): 26.
5. Simon Conway Morris, *Life's Solution: Inevitable Humans in a Lonely Universe* (New York: Cambridge University Press, 2003).
6. Simon Conway Morris, "We Were Meant to Be ..."
7. Simon Conway Morris, *Life's Solution: Inevitable Humans in a Lonely Universe, xv.*

Further Reading

Articles

- Morris, Simon Conway. "We Were Meant to Be ..." *New Scientist* 176, no. 2369 (2002): 26-31.
- Morris, Simon Conway, and Stephen Jay Gould. "Showdown on the Burgess Shale." *Natural History Magazine* 107, no. 10 (1998): 48-55.

Lectures

- Morris, Simon Conway. "If the evolution of intelligence is inevitable, what are the theological implications?"
- Morris, Simon Conway. "*Evolution and Fine-Tuning in Biology, Parts 1 & 2*."
- Morris, Simon Conway. "*Evolution" Is Biological Evolution Inevitable?"*

Books

- Gould, Stephen Jay. *Wonderful Life: The Burgess Shale and the Nature of History*. New York: W.W. Norton, 1989.
- Morris, Simon Conway. *Life's Solution*. New York: Cambridge University Press, 2003.
