CHAPTER 10

INTELLIGENT DESIGN

THE VERY FIRST LIVING CELL

The theory of evolution is a model for how life can change over time—once it exists. It is not a theory about how the first living organism came into existence.

Some scientists are working on developing a model, sometimes called *chemical evolution* or *abiogenesis*, for how the first living organisms might have self-organized. By examining asteroids, comets, and the oldest rocks on earth, scientists know something about the conditions on earth when the planet was young, about 4.5 billion years ago. There was no life at first, but there was an ocean, an atmosphere, dry land, volcanic activity, storms, and a variety of simple organic molecules. The first fossilized single cells date to several hundred million years after the earth formed, somewhere between 3.8 and 3.0 billion years ago. Scientists are trying to figure out whether or not, given this amount of time and the sorts of conditions that existed then, these chemicals might have organized themselves into simple living cells without the need for miraculous intervention.

Supporters of Intelligent Design argue that even the simplest living organism is far too complex to self-assemble. They argue that it is very improbable that a living cell could form simply out of chemicals interacting with each other without the aid of some sort of intelligent being to guide the process.

What are the chances that a simple living cell might self-assemble on the early earth? Again, the answer to that question depends on the assumptions made. We could imagine a warm pond of water with various simple organic molecules dissolved in it and then calculate the probability that millions of the right molecules will randomly collide together to spontaneously form a living cell. The probability of that happening is extremely low. (This scenario is sometimes compared to the probability that a tornado will go through a junkyard and spontaneously assemble an airplane.) Scientists long ago rejected the idea

Today scientists have different theories about how the first cell might self-assemble, step-by-step, out of simpler pieces. For example, organic molecules could have been concentrated by geographical features such as ponds that repeatedly evaporate and then refill. Mineral clays could have helped form long chain molecules and held them in place long enough to assemble into larger structures. Deep underground fissures, regions near volcanoes, or deep ocean hydrothermal vents might have provided more likely environments for life to form. Given our current state of knowledge, these scientists conclude that we don't know enough yet to calculate whether abiogenesis is probable or improbable. Once again, the problem is too difficult. We hope that scientific research over the next several decades will provide a better answer.

What should we say while we are uncertain?

As long as science does not have a definite conclusion, it would be best to exercise some humility and caution. It would be reasonable for supporters of Intelligent Design theory to say,

- "Scientists at present do not have a good, detailed explanation for how first life could self-organize without outside intelligent intervention."
- "We believe that abiogenesis is very improbable and that future scientific research will convincingly show that it is very improbable."

However, it seems like a bad idea for supporters of Intelligent Design to say,

- "We are certain that scientists will never find a good explanation for how first life could self-organize."
- "We have proven that it is very improbable."

It would be reasonable for critics of Intelligent Design theory to say,

- "Scientists at present do not have a detailed explanation for how first life could self-organize, but they have some theories that might be true and are worth investigating."
- "We believe that future scientific research will convincingly show how it happened."

However, it seems like a bad idea for them to say,

- "We are certain that scientists will find a good explanation for how first life could self-organize."
- "We have proven that it happened."

In another article on our website ("Are Planetary Orbits Stable?") we told a story that comes from the time of Isaac Newton and Pierre de Laplace. During those decades it was scientifically uncertain whether the orbits of the planets in our solar system were stable over very long periods of time or whether the orbits were unstable and needed to be corrected (perhaps by some sort of divine intervention) every few centuries or so. Not very many people alive at the time would have been aware that this was an unanswered scientific question. But if they had been aware, some Christians at the time might have preferred that scientists prove that the planetary orbits were stable because it seems like "better design." Other Christians might have preferred that scientists prove that the planetary orbits were unstable because it gives more direct evidence for God's existence and governance of nature.

Today it is scientifically uncertain whether or not abiogenesis is possible. That would seem to be proof of God's existence and intervention in the natural world. If God is going to miraculously intervene at some point in the history of life, the very beginning of life would be an obvious place. God could do a miracle once to get life started and then use the natural mechanisms of evolution to develop all the species. But other Christians would prefer that scientists eventually prove that abiogenesis and the evolution of complexity are possible because it would show that God designed an incredibly clever system of finely tuned natural laws.

While it's reasonable for Christians to have preferences one way or the other, it's important to remember that our belief in God does not rest on how the science turns out. If the scientific claim of Intelligent Design theory turns out to be true and abiogenesis is impossible, then we can stand in awe that God intervened to organize simple molecules into complex creatures. If the scientific claim of Intelligent Design theory turns out to be false, we can be equally in awe that God designed an astonishing system of natural laws in which living organisms can self-organize out of simpler pieces.

To read more about abiogenesis from a religiously neutral perspective see:

- Brack, Andri, ed. *The Molecular Origins of Life: Assembling Pieces of the Puzzle.* Cambridge University Press, 2004.
- Orgel, L.E. "The Origin of Life—A Review of Facts and Speculations," *Trends Biochem Science.* 23, 1998.
- Plaxco, Kevin and Michael Gross. *Astrobiology: An Introduction.* Boston: Johns Hopkins University Press, 2006.