Today we want to look a bit more closely at the origin of life. What does the evidence indicate about the origin of life? A successful naturalistic account of abiogenesis will require, first, an explanation of the chemical synthesis of the building blocks of life and, second, an account of their assembly to form the first living cell. Neither of these steps is anywhere close to being solved.

Let us look first at the task of chemical synthesis of the building blocks of life. Most of us were probably taught in high school that life originated in the so-called primordial soup by chance chemical reactions, perhaps fueled by lightning strikes. Back in 1952 a scientist named Stanley Miller was able to synthesize amino acids by passing electric sparks through a methane gas. Of course amino acids are not alive, but proteins are made out of amino acids and proteins are found in living things, so the hope was that somehow the origin of life might be explained. You might think, wait a minute, that's a pretty big extrapolation. Amino acids constitute proteins, proteins are found in living things, therefore the ability to synthesize amino acids meant somehow that life can be originated chemically. And I would agree with you. I think that's a pretty big leap. But that is what most of us were taught, I think, in school. In the primordial soup that either covered the Earth in its oceans or else perhaps in warm pools on the land through lightning strikes and chemical reactions somehow primitive life was formed.

Well, all of these old chemical origin of life scenarios have in fact broken down and were a dead end. This fact was documented in the groundbreaking book by Roger Olson, Walter Bradley, and Charles Thaxton called *The Mystery of Life's Origin*. This book has now been republished with additional essays as *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020).They point out that there probably never even was such a thing as the so-called primordial soup. For the natural processes of dilution and destruction would have prevented the chemical reactions that supposedly led to life. Miller's experiments were performed in a tiny, glass-enclosed

artificial environment in the laboratory where the natural processes of destruction and dilution would not come into effect. But of course in the primordial oceans of the Earth, these sorts of destructive processes could not be precluded and therefore they would have prevented the chemical reactions that would supposedly have led to the formation of life.

Moreover, they point out that thermodynamics poses an insuperable problem for these chemical origin of life scenarios because there just isn't any way to harness the raw energy of lightning strikes or energy from the sun in order to drive chemical evolution forward. There just isn't any sort of mechanism available on the primordial Earth whereby this raw energy could be harnessed to drive chemical evolution.

Moreover, Bradley, Olsen, and Thaxton point out that there was no way to preserve any of the products of chemical evolution in order for the supposed second step in the process to take place. The scientist can artificially isolate the products of the first chemical development and then subject them to a second step, but in the primordial seas there wasn't a way of collecting and preserving any products of chemical evolution in the first step for the supposed second step. The same processes that formed them in the first place would also serve to almost immediately destroy them again, so that even if the first step could be successfully achieved the second step would not.

Finally, Bradley, Olson, and Thaxton point out that it was originally believed that billions of years were available for life to originate on Earth by purely natural processes. Given billions of years there would be untold billions and billions and billions of chances for life to originate in the primordial soup. The problem is that we now have fossil evidence of life on Earth going back more than 3.8 billion years ago. Now, when you think that the age of the Earth is probably around five to six billion years, that means that the window of opportunity between the time that the Earth cooled down enough and the seas formed on the one hand and then the first origin of life 3.8 billion years ago on the other hand is being progressively closed. The window of opportunity for life to

originate is getting increasingly narrow. In fact, Bradley, Thaxton, and Olson estimate in their book that it is probably a window of only about 25 million years, which is far too short for these naturalistic scenarios. So rather than having billions of years available for life to form by chemical evolution, only around 25 million were probably available, which was far too short.

So for all of these reasons and more, the old chemical origin of life theories have broken down. The situation has not essentially changed since Thaxton, Bradley, and Olson wrote their book. Today there is a plethora of alternative, speculative theories with no consensus on the horizon. Rather the consensus is that we still have no understanding of how the macromolecular building blocks of life on Earth—the polynucleotides, polypeptides, the polysaccharides, the lipids—could have formed naturally on our planet.

And that's just the first step. For now we have to ask how the building blocks were assembled into the first cell. This part of the project has proven to be even more difficult than the first. According to cell biologist Franklin Harrold, "How cells and their parts came to exist is, for all practical purposes, unknown."[1] Until we find a plausible account, "an open minded but principled skepticism is the only defensible stance."[2]

Theological Perspective on the Origin of Life

In light of this, what is the most plausible theological perspective for the Christian theologian to adopt concerning the origin of life?

Theistic Necessitism

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[1] Harold, *In Search of Cell History,* p. 52.

[2] Harold, *In Search of Cell History,* p. 223.

We have already mentioned three possible theological perspectives on abiogenesis correlated with versions of necessitism and contingentism. Given necessitism, the proper theological perspective would be theistic necessitism or theistic chemical evolution. According to this view God has chosen (and fine-tuned) the physical and chemical laws of nature with a view to producing life through unbroken natural causes. The origin of life on Earth is not a miracle but the inevitable outworking of divinely decreed laws of nature. As the source of nature's laws, God is the ultimate cause of life's origin on Earth (or anywhere else, for that matter). Secular thinkers who believe that chemical evolution rules out God as the source of physical life are overly hasty, for, as contingentist critics of necessitism have seen, necessitism is easily combined with a theistic perspective on abiogenesis.

Unfortunately, theistic neccessitism does not seem to be a plausible perspective, much less the most plausible perspective, on abiogenesis simply because necessitism does not seem to be as plausibly true as contingentism. The absence of biological signatures from outer space and especially the frustrated, ongoing efforts of synthetic chemists to reproduce abiogenesis strongly suggest that the origin of life is not nomologically necessary.

Theistic Contingentism

If, then, we adopt a contingentist perspective on abiogenesis, two theological perspectives are available to us: creationism and supervisionism.

Creationism

According to creationism, the origin of life on Earth is not just figuratively, but literally, a miracle or, perhaps, a series of miracles. God has intervened in the series of natural causes to bring about events that, in the absence of such divine action, would not have been brought about

by the purely natural causes. Creationism enjoys the advantage that Israel's creation story does feature periodic creative acts of God in the world to bring about our biosphere. Although creationism will not be available as a scientific account to natural scientists who are methodological naturalists, such persons may simply remain agnostic *qua* scientists concerning the origin of life, embracing no scientific account, while they may accept *qua* Christian believers creationism as the truth about abiogenesis. In any case, we are not natural scientists but theologians who are free of any such methodological constraint. Barring any insuperable objections to the occurrence of miracles, there is no obstacle to the Christian theologian's embracing creationism as his preferred account of abiogenesis. The great advantage of creationism is that, as necessitists so vigorously protest, on contingentism the origin of life on Earth or, indeed, anywhere in the universe seems to be a miracle. Given the incomprehensible improbability of abiogenesis in purely natural terms, creationism seems eminently plausible. Such a perspective may be held tentatively, open to revision in light of the evidence.

Supervisionism

The other contingentist perspective is supervisionism, which views the series of natural causes leading to abiogenesis as unbroken by divine interventions but nonetheless under the supervising providence of God. Biblically, Israel's creation story sometimes seems to contemplate God's using natural secondary causes to bring about the origin of various life forms, as we have seen. Such a supervisionist perspective is most plausibly a version of Molinism, based upon God's middle knowledge of contingent hypotheticals. By knowing what natural circumstances would lead to the improbable origin of life, God can decree a world in which purely natural causes produce contingently and against all probability life on Earth. The origin of life would not be a miracle but what, from a Molinist perspective, we have called a special providence. Such a view does not view life as nomologically necessary but as the outcome of highly contingent circumstances under the supervisory control of God. This perspective is immune to scientific refutation and in that sense is a

more epistemically stable position than creationism. The supervisionist need not be constantly looking over his shoulder to see if an account of abiogenesis in terms of purely natural causes has been discovered. But this advantage is, of course, merely psychological.

Supervisionism can serve as a fall-back position for the creationist, should natural causes leading to abiogenesis be discovered. For like the necessitist, the supervisionist must postulate an unbroken chain of natural causes leading to life. The strength of the creationist perspective is that such intermediate causes seem to be nowhere in view. While this situation can, of course, be ascribed to our ignorance, the doubt lingers that there are no such intermediate causes. The apparent absence of natural causes is a considerable advantage of creationism. Given the biblical ascription to God of primordial, creative, life-producing acts, however figuratively these might be described, the presumption ought to be in favor of creationism unless and until a purely natural account is forthcoming. But creationism and supervisionism need not be seen as mutually exclusive: God may occasionally intervene miraculously to strongly actualize certain natural states of affairs and then leave it to contingent natural causes under his supervision to weakly actualize the rest.

Franklin Harold concludes his chapter on the origin of cellular life on Earth with these poignant words:

> For the present, we are in limbo. The natural path from simple cosmic molecules to cells, from chemistry to biology, remains undiscovered. A path there must be, of that I am certain, else we would not be here seeking it. But the path is evidently well hidden, probably very narrow, and may require evolving life to have negotiated some tight corners by sheer rare good luck. I have a hunch that there is more, much more, to the origin of cells and of life than current philosophy knows. When – or better, if – we solve that mother of all conundrums it will change our perspective on

> life, the universe, and all that. But where we should look for illumination I cannot say.[3]

As a Christian theologian, I read these words with a sense of amazement and bewilderment, for the answer seems to be staring us in the face. Limbo is traditionally reserved for those who do not believe in God, and so it is here. The life-changing perspective anticipated by Harold is provided by theism. How can he fail to see it?

The answer is that Harold is deeply committed to methodological naturalism, so that theism is ruled out *a priori*. He explains, "Like the great majority of my colleagues, I start from the premise that both the origin of life and its subsequent expression should be, and eventually will be, wholly accounted for by natural processes operating within the framework of chemistry and physics."[4] He adds, "Scientists' refusal to grant some space to the mind and will of God may strike the majority of mankind as arbitrary and narrow-minded, but it is essential if the origin of life is to remain within the domain of science."[5]

Be that as it may, I repeat that we are not natural scientists but theologians who are not methodologically restricted to naturalistic philosophies. It is odd that Harold opines that there must be much more to the origin of life than current *philosophy* (rather than *science*) knows. Why not, then, theism? Harold's inference that there must be a natural path from chemistry to life or we should not be here, is a *non sequitur*, rooted in an unjustified assumption of metaphysical, not merely methodological, naturalism.

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[3] Harold, *In Search of Cell History*, p. 189.

[4] Harold, *In Search of Cell History*, p. 16.

[5] Harold, *In Search of Cell History*, p. 164

Curiously, Harold also says,

> In all of biology, possibly in all of science, there is no more profound mystery than the origin of cells and of life. Until we solve it, we cannot be sure that life grew naturally out of the lifeless world of chemistry and physics and must entertain the possibility that the gulf between life and nonlife was bridged with the assistance of forces that fall outside the reach of science as we understand it.[6]

This statement appears to qualify seriously both methodological and metaphysical naturalism. In fact, Harold briefly reviews some of the evidence of cosmic fine-tuning that many take to support theism, and although he tries to avert the implication of a cosmic Designer, Harold admits that "it is clear that our perception of biology must be brought into harmony with a quite fantastic setting."[7] So why not theism? Harold recounts that "I still cherish a personal fantasy," derived from science fiction, that "calls for the cosmic equivalent of Johnny Appleseed, a fabulous being that scoots about the galaxy" scattering "life-seeds."[8] We live on one of Johnny's successes. Harold quickly adds, "No, I don't take it seriously."[9] Fine; but if such a naturalistic god is worth even mentioning, what about the transcendent Designer of theism? Isn't theism worthy of philosophical consideration?

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[6] Harold, *In Search of Cell History*, p. 215.

[7] Harold, *In Search of Cell History*, p. 229.

[8] Harold, *In Search of Cell History*, p. 214.

[9] Harold, *In Search of Cell History*, p. 214.