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that he presents fill us all with awe and wonder at the power and glory of God, the Creator of all things. He asks whether this might be considered evidence for the existence of God. His conclusion is that

The "nature of nature," especially fine tuning, provides clear and compelling evidence for our all-powerful, loving Creator God, who can be seen through "the things that have been made, so that those who do not believe are without excuse" (Rom. 1:20).

I would like to suggest that rather than providing such evidence, the awesome magnificence of our universe is simply consistent with and understandable within the worldview of God the Creator of all things. I submit the following comments for your consideration.

The phrase "fine tuning of the universe" evokes the impression that the parameters of the universe are adjustable and that some agency is capable of making those adjustments. The question "why is the universe fine-tuned for life?" further presumes that the appearance of life ten billion years after the formation of the universe somehow affected that tuning. Since natural causes cannot anticipate the future, the obvious inference would be that an omniscient, omnipotent agent had an expectation for the appearance of life and adjusted the parameters accordingly. The perceived evidence of the existence of God may be due to the presupposition of the intention of life implicit in the way the question is asked.

However, the remarkable harmony between the universe and life can also be described as the "fine tuning of life." The question becomes, "Why is life fine-tuned for this universe?" This question has a natural sequence of cause and effect with the obvious answer of evolution. The awesome synergy between the universe and life arises from the evolutionary adaptation of life to this universe. The compelling inference from our observations is not that the universe was tuned for life but that life was tuned to thrive in this universe.

Furthermore, our concept of the origin of the universe is expressed in mathematical models, some of which are described by Bradley. In those models, it is easy to treat the constants as variables and to see what happens when they are modified. In this exercise, it is astounding to see the dramatic impact of even the tiniest variation to the point at which life could not exist. But the models give us no indication whether in nature those constants are in fact variable and could have had other values. We have no knowledge of how those constants obtained their values, whether any are related to each other, or if they could have been or needed to be adjusted by some

agent. It may be only in our models that the values can be tuned. Perhaps the real mystery is centered on the very existence of the universe rather than its precision. We need to acknowledge a large dose of humility in our lack of knowledge of how the constants acquired their values.

The apostle Paul was not thinking of western scientific logic when he wrote the book of Romans. He was not predicting that cosmologists could and would someday discover facts that would provide evidence for the existence of God. Rather, he speaks to the emotive awe and wonder that every human being living in every era can experience in their perception of the world in which we live. That is a universal insight that leads to the inexcusability of unbelief for everyone, not just scientists studying the universe. Paul says that nature shows the eternal power and divine nature of God, presuming that the existence of God is a given. Bradley perceives from nature that God is "loving" though Paul gives no such indication. Only if love is defined as causing something to exist could it be inferred from the observations of our

Instead of seeing the amazing precision of our universe as evidence for the existence of God, I suggest it is the existence of God that helps us understand our universe. Faith comes first and, as the writer of Hebrews put it, is the "evidence of things not seen." Once we acknowledge the existence of God, the Creator of all things, we can recognize his hand in the beauty of the universe and its amazing precision and mathematical structure. It seems analogous to the well-known quote from C. S. Lewis in *The Weight of Glory*, "I believe in Christianity as I believe that the Sun has risen, not only because I see it but because by it, I see everything else."

Randy Isaac ASA Executive Director Emeritus

Response to Letter from Randy Isaac

I appreciate the letter that Randy Isaac wrote in response to my article "The Fine Tuning of the Universe: Evidence for the Existence of God?," *PSCF* 70, no. 3 (2018): 147–60. While we agree that God's creation provides some warrant in support of belief in theism, we follow two different paths to get there. I will try to clarify exactly what these differences are without misrepresenting Isaac's argument. We have been having a cordial conversation on this topic for several years.

First, Isaac interprets Romans 1:18–20 as Paul appealing *only* to the "emotive awe and wonder" that every

human being living in every era can experience. In the article, I claimed that the "nature of nature," especially fine tuning, provides clear and compelling evidence for our all-powerful, loving Creator God who can be seen through the things that have been made. Isaac argues that Paul does not claim that nature demonstrates God's love. My intention in the above sentence was to argue that God's existence is evidenced in nature (as Romans 1:20 clearly states), but not to claim that all of God's attributes are seen in nature. For example, God's love is demonstrated much more profoundly in Christ's sacrificial death on the cross for us.

I asked John Collins, Professor of Old Testament at Covenant Seminary (St. Louis), what he thought would be the consensus contemporary interpretation of Romans 1:18–20 by evangelical scholars. Here is his answer.

My own research of late has involved studies in how Jews in the Greek-speaking world interacted with their philosophical environment, and how those interactions were picked up by the early Christians. In that light (as I have shown in a few places), it becomes pretty clear that Paul in Romans 1:20 is invoking a well-recognized design discussion in the Greek-speaking world, and that discussion is not limited to the perception of beauty (although that is included). This was certainly a common perception in the Greek-speaking Christian community.

I would agree with Isaac that if one already believes that there is a God, then the beauty in nature is consistent with and supportive of this belief. And in the early centuries of the Church when most people believed in some kind of God, the beauty in nature was a confirmation. However, centuries later with the development of modern science and enlightenment skepticism, the emerging recognition of the mathematical forms in nature and other design features, provided clear and timely support for the theistic worldview "through the things that have been made so that those who choose not to believe are without excuse." In my article, I quoted Leonard Susskind, one of the leading agnostics and a string theorist (p. 158), who calls "fine tuning" the "silent elephant in the room ... and a huge embarrassment to physicists ..." I found not one agnostic who was troubled by "the beauty in nature."

Second, Isaac seems to be troubled by my presumption that the universal constants could have potentially had different values or that the mathematical forms of the laws of nature could have been different than they are today. We do not know why our natural world has the forms and values that it does, though I presume that God did ultimately create a universe with mathematical forms and a group of universal constants that he knew would provide the necessary habitat(s) for life.

Third, Isaac argues that whatever this universe was like, evolution might prove to be sufficiently robust to facilitate adaptations that could accommodate to a wider range of life forms. This article has described in detail the minimum requirements for life of any imaginable type and why these requirements are so difficult to meet. Looking around our solar system and the larger universe, the complete absence of any evidence of life outside of planet Earth is telling. Life does not seem to be inevitable. It can only exist, and even flourish, under very special conditions which our solar system and planet Earth provide uniquely.

Fourth, Isaac claims that the real mystery may be "the very existence of the universe rather than its precision." I would agree that how the universe exploded into existence out of nothing is a mystery, and I suspect that this phenomenon is well beyond the reach of modern science.

Isaac concludes with Hebrews 11:1 and the claim that faith must come first and then "evidences" can be used to support that which I have chosen to believe. As I read the gospels, it seems to me that Jesus does not usually call people to accept him as the Messiah because he claims to be. Rather, Jesus performs miracles which he calls signs, in order to provide warrant for people to accept his messianic claims. John 20:30-31 says, "Many other signs Jesus therefore also performed in the presence of the disciples which are not written in this book; but these have been written that you may believe that Jesus is the Christ and that in believing you may have life in his name." In John 15:24, Jesus said, "If I had not done among them the mighty works which no one else did, they would not be guilty of sin; but now they have both seen these mighty works and hated me and my Father as well." God had Moses do five miracles for Pharaoh who hardened his heart and rejected the supernatural signs Jehovah God had provided. Thereafter, God hardened Pharaoh's heart.

In each of these stories and many others, God gives more than ample warrant for people to believe in him, but he seldom seems to ask people to believe without some kind of evidence. God does not call people to "blind faith." His resurrection from the dead, which he predicted at least twelve times, was his ultimate Christian apologetic. Alternatively, there are several examples in which followers of Jesus exclaim that "I have believed and have come to know ..." It appears that mustard seed faith and

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evidence are both essential for a person to develop a healthy, well-rounded faith. My faith growing up was primarily experiential, but during my college years (out of necessity) became better balanced with evidential support.

Famous Christian apologists of our time such as Norman Geisler and William Lane Craig use a two-step apologetic in which evidence for the existence of God such as "fine tuning" is offered to demonstrate the possibility that there might be a Creator-God after all. Once belief in God's existence has been shown to be plausible (but not yet proven) using scientific apologetics such as fine tuning, then the historical evidence for the resurrection becomes more compelling. It seems to me that a two-step apologetic is much more effective than a single-step apologetic. It appears that Jesus often used it in his ministry, doing miracles before claiming to be the Messiah.

Most importantly, Isaac believes that one should not posit fine tuning as the starting point to justify belief in a theistic God. Rather, he believes that we should posit the existence of God first and look for evidence in nature that seems to support this belief, including characteristics of nature that appear to be fine tuned. I prefer inference to the best explanation, which in the case of "fine tuning" would be an intelligent cause. Does the universe seem to have "just happened" or does it appear to be a finely tuned universe that plays an evidential role in providing warrant for belief in a theistic creator? Isaac prefers to believe that faith is primary with fine-tuning and other arguments being supplemental and confirming. I believe that fine tuning provides one of the best arguments for the existence of an intelligent creator, which makes historical arguments for the resurrection all the more plausible, which in turn make the step of faith to belief in the Christian message accessible.

Walter Bradley ASA Fellow

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