

Does science make belief in God obsolete?



Victor J. Stenger

Yes.

Once upon a time there were a number of strong scientific arguments for the existence of God. One of the oldest and most prevalent is the argument from design. Most people look at the complexity of the world and cannot conceive of how it could have come about except by the action of a being or force of great power and intelligence.

The design argument received perhaps its most brilliant exposition in the work of the Anglican archdeacon William Paley. In his *Natural Theology or Evidences of the Existence and Attributes of the Deity Collected from the Appearance of Nature*, first published in 1802, Paley wrote about finding both a stone and a watch while crossing a heath.

Though the stone would be regarded as a simple part of nature, no one would question that the watch is an artifact, designed for the purpose of telling time. Paley then proposed that objects of nature, such as the human eye, give every indication of being similar contrivances.

When Charles Darwin entered Cambridge in 1827 he was assigned to the same rooms in Christ's College occupied by William Paley seventy years earlier. By that time the syllabus included the study of Paley's works and Darwin was deeply impressed. He remarked that Paley's work, "gave me as much delight as did Euclid."

Yet Darwin ultimately discovered the answer to Paley and showed how complex systems can evolve naturally from simpler ones without design or plan. The mechanism he proposed in 1859 in *The Origin of Species* (inferred independently by Alfred Russel Wallace) was natural selection, by which organisms accumulate changes that enable them to survive and have progeny that maintain those features.

But, as Darwin recognized, a serious objection to evolution existed based on the known physics of

the time. Calculations by the great physicist William Thomson (Lord Kelvin) estimated ages for the sun that were far too short for natural selection to operate.

However, at the time, nuclear energy was unknown. When this new form of energy was discovered early in the twentieth century, physicists estimated that the energy released by nuclear reactions would allow the sun and other stars to last billions of years as stable energy sources.

Prior to the twentieth century, the simple fact that the universe contains matter also provided strong evidence for a creation. At the time it was believed that matter was conserved, and so the matter of the universe had to come from somewhere. In 1905 Einstein showed that matter could be created from energy. But where did that energy come from?

This remained unanswered for almost another century until accurate observations with telescopes determined that an exact balance exists between the positive energy of matter and the negative energy of gravity. So, no energy was required to produce the universe. The universe could have come from nothing.

Independent scientific support for a creation was also provided by a basic principle of physics called the *second law of thermodynamics*, which asserts that the total disorder or entropy of the universe must increase with time. The universe is growing more disorderly with time. Since it now has order, it would seem to follow that at some point in the past, even greater order must have been imparted from the outside.

But in 1929, astronomer Edwin Hubble reported that the galaxies were moving away from one another at speeds approximately proportional to their distance, indicating that the universe was expanding. This provided the earliest evidence for the Big Bang. An expanding universe could have started with low entropy and still have formed localized order consistent with the second law.

(continued)

Extrapolating what we know from modern cosmology back to the earliest definable moment, we find that the universe began in a state of maximum disorder. It contained the maximum entropy for the tiny region of space, equivalent to zero information. Thus, even if the universe were created, it retains no memory of that creation or of the intentions of any possible creator. The only creator that seems possible is the one Einstein abhorred—the God who plays dice with the universe.

Now, such a God could still exist and play a role in the universe once the universe exploded out of chaos. We no longer have total disorder; but disorder still dominates the universe. Most of the matter of the universe moves around randomly. Only 0.1 percent, the part contained in visible parts of galaxies, has any significant structure.

If he is to have any control over events so that some ultimate plan is realized, God has to poke his finger into the works amidst all this chaos. Yet there is no evidence that God pokes his finger in anyplace. The universe and life look to science just as they should look if they were not created or

designed. And humanity, occupying a tiny speck of dust in a vast cosmos for a tiny fraction of the life of that cosmos, hardly looks special.

The universe visible to us contains a hundred billion galaxies, each with a hundred billion stars. But by far the greatest portion of the universe that expanded exponentially from the original chaos, at least fifty orders of magnitude more, lies far beyond our horizon. The universe we see with our most powerful telescopes is but a grain of sand in the Sahara. Yet we are supposed to think that a supreme being exists who follows the path of every particle, while listening to every human thought and guiding his favorite football teams to victory. Science has not only made belief in God obsolete. It has made it incoherent.

Victor J. Stenger is emeritus professor of physics and astronomy, University of Hawaii, adjunct professor of philosophy, University of Colorado, and the author of seven books including God: The Failed Hypothesis—How Science Shows That God Does Not Exist.

JOHN TEMPLETON FOUNDATION
SUPPORTING SCIENCE ~ INVESTING IN THE BIG QUESTIONS

THIS IS THE THIRD IN A SERIES OF CONVERSATIONS AMONG LEADING SCIENTISTS AND SCHOLARS ABOUT THE “BIG QUESTIONS.”

For the previous two questions, visit www.templeton.org/bigquestions.