

The Future of God

Bart Kosko

The idea of God is one of the great ideas of human culture. It often acts as the limiting case of some other idea or thing. Some have seen God as infinite power, love, mind, matter, energy. Free-thinkers have seen God as a social reflex, opiate, or outright fiction. Almost all have seen God as an object of religious or philosophical thought. That helps explain why the idea of God has changed little over the last few centuries. There have been few research breakthroughs in religion and philosophy.

I want to argue that God has a proper place in the speculative thought of the future. That place is not in religion or philosophy. It is in science fiction.

A science fiction author can push the principles of science beyond the known bounds of fact or of what one can hope to test. The author might cast God as an advanced alien or as an optimizing agent that acts before the Big Bang or after the Big Crunch. Then the author must work out how much such a God shapes our web of cause and effect. The result may be a new way to view man's place in the cosmos or just the mental delight that comes of reading a good fresh tale. The result might also give the irrational spur that leads some dreamer to put forth a new theorem or physical theory.

Consider two recent examples from freethinkers. Carl Sagan invokes a math god in his 1985 novel *Contact*. The heroine, Ellie, ends up in the arms of an advanced alien who has helped combine the mass of many star systems in the region of Cygnus A as "an experiment in [cosmic] urban renewal." The alien tells

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Ellie that they have approximated the irrational number π (the ratio of the circumference of a circle to its diameter) to enough decimal places to find a message from God in the string of 0s and 1s. This dumbfounds Ellie:

"You're telling me there's a message in eleven dimensions hidden deep inside the number π ? Someone in the universe communicates by . . . mathematics? But . . . help me, I'm really having trouble understanding you. Mathematics isn't arbitrary. I mean π has to have the same value everywhere. How can you hide a message inside π ? It's built into the fabric of the universe."

"Exactly."

Arthur C. Clarke and Gentry Lee wrote three *Rama* novels that end up with God running universes from bang to crunch as

something like massive computer simulations. Their God is not the Mathmaker since math bounds Him. The third 1994 novel, *Rama Revealed*, ends as the alien machine intelligence Saint Michael explains that God wants to learn which universe seeds will grow into harmonious universes:

Imagine that this coordinate system I have drawn is a symbolic, two-dimensional representation of the available hypersurface of parameters defining the creation instant, the moment that energy is first transformed into matter. Any arrangement or vector representing a specific set of initial conditions for the universe may be depicted as a single point in my diagram. What God is, and has been, searching for is a very special closed [*sic*: open] dense set located on this mathematical hypersurface. This special set He is seeking has the property that any of its elements—that is, any arrangement of conditions for the instant of creation chosen from *within* this set—will produce a universe that will eventually end in harmony.

And Harvard philosopher Robert Nozick invokes the science fiction method to discuss God in his 1989 book, *The Examined Life*:

Simply being the creator is not enough alone to constitute being a God. Consider the science fiction situation of our universe being created by a teenager living in another dimension or realm, as the equivalent of a high school science or art project.

Nozick is clever here but wrong. Most people would count such a teenager as God, and doubly so if he could unmake our world or us at will. Might would make right with the teenage God just as it has with the great shepherding Gods of the past. Action x is wrong if and only if God will punish you if you do action x .

Much of science rests on raw assumption. These points of faith are good places for a science fiction author to advance a causal hypothesis. One deep point of faith is belief in probability or an undefined "randomness." The belief passes to faith in the face of deterministic Maxwell equations of the electromagnetic flux and the Schroedinger wave equation of the matter flux and the infinite spaces of

equations that give rise to chaos. All events happen with some probability. The most likely events happen the most often. This soon leads to the belief called the principle of "maximum likelihood": Expect the most probable events to occur. Or pick the values in a theory or in the roll of the dice that maximize the probability that the theory is true or that the dice roll as observed.

Stephen Hawking talks about this in his 1988 book, *A Brief History of Time*. There are infinitely many universe seeds or initial conditions from which a universe can grow from a Big Bang. The uniform seed would give one smooth growing bubble of mass. There would be perfect symmetry and no galaxies or stars or creatures to ask where it all came from. But such a uniform seed is a very rare and thus not very probable. The god of maximum probability would not tend to pick that seed. He would tend to pick a plain seed with irregular or fractal or chaotic initial conditions. The evidence is the world all around us.

The trouble is that the god of minimum probability could just as well have picked our seed from the box of universe seeds. Just the luck of the draw. A lone datum does not confirm or refute any claim of the form " x will happen with probability p " so long as the probability p is not the all-or-none case of 100 percent or 0 percent. One setting sun does not refute the claim, "There is a 50 percent chance the sun will not set." The claim needs a long list of test cases that add up to a stable frequency close to p . The event x needs to have occurred in about p percent of the test cases. But we know of at most one world and we can't even be sure we know that much.

Enter the science fiction author. He can put forth new test worlds and compare them to our own world or draw from them some novel trend or stable frequency. Or he can set the tale before the Big Bang as a contest among extremizing forces such as the gods of maximum entropy or least action or maximum goodness or irony. Our laws of physics might hold the same there as they hold on this side of the time singularity. The science fiction author can give a "maybe" answer to our questions and do so with the same merit we give to any claim of

the form, "This lone event is probably so and so."

Energy also offers the science fiction author many paths to God. The world seems to reduce to energy. Mass and energy convert back and forth through the linear scheme $e = mc^2$. And the energy seems conserved in the sense that energy has no velocity. It does not change in time. The frictionless pendulum swings back and forth forever as it smoothly converts potential to kinetic energy and then converts it back again. Why is energy conserved? The energy equation in theoretical mechanics has zero velocity (or a zero time derivative). The zero result falls right out of the math model we use. So our energy budget is constant and fixed to the last quark.

But why is our universe full of this amount of energy rather than some other? Why this number of quarks rather than some other? There are no good answers to this question if there are any at all. Yet it is a good question. It is a modern version of the question, why is there something rather than nothing? And physics students and the principle of sufficient reason demand an answer to it. The answer "God picked our quark budget for us" opens many a science fiction door. The Energy Maker might use our universe as one gas tank among many or might even have died before He filled it up.

The philosopher David Hume covered much of this ground in his 1779 deathbed classic, *Dialogues Concerning Natural Religion*. The hero Philo doubts that God has much to do with man or that man knows much of making worlds:

What peculiar privilege has this little agitation of the brain which we call thought that we must thus make it the model of the whole universe? . . . Is there any reasonable ground to conclude that the inhabitants of other planets possess thought, intelligence, reason, or anything similar to these faculties in men? . . . Have worlds ever been formed under your eye? . . . Many worlds might have been botched and bungled, throughout an eternity, ere this system was struck out. Much labor lost. Many fruitless trials made. And a slow but continued improvement carried on during infinite ages in the art of world-making. . . . This world, for aught we know, is very

faulty and imperfect, compared to a superior standard; and was only the first rude essay of some infant deity, who afterwards abandoned it, ashamed of his lame performance: It is the work only of some dependent, inferior, deity; and ever since his death has run on at adventures from the first impulse and active force which it received from him.

In the end such God talk may help round out of some of the fuzzy edges of our pragmatic knowledge schemes. Harvard philosopher Willard Van Orman Quine opened this door in his 1953 book *From a Logical Point of View*:

Physical objects are postulated entities which round out and simplify our account of experience, just as the introduction of irrational numbers simplifies our laws of arithmetic. . . . The conceptual scheme of physical objects is a convenient myth, simpler than the literal truth and yet containing that literal truth as a scattered part.

Creative minds will always weave the fuzzy and extreme conceptions of God onto the top or bottom of the knowledge webs of the day. That is why science fiction is such a natural home for God. Indeed we can view the God of the Old Testament and the gods of ancient Greece and India as the science fiction of their day. Dr. Jack Miles says something like this in his 1995 book *God: A Biography*. He views the Jewish god as the greatest character of Western literature:

No character on stage, page, or screen has ever had the reception that God has had. God is more than a household word in the West. He is, welcome or not, a virtual member of the Western family. Parents who would have done with him cannot keep their children from him. For not only has everyone heard of him. Everyone, even now, can tell you something about him.

The future of God looks both secure and fruitful. Science fiction has helped free God from His old stale prisons of the church and the classroom. And science fiction will no doubt still use God ideas to round out and stretch the belief schemes of the future. For God is more than a great character. God is the ultimate plot device.