

The Premise Keepers

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Faith in Science and God

A huge body of literature now exists in which authors with strong theological and scientific credentials argue that traditional religion, particularly Christianity, can be made consistent with all scientific knowledge. This new breed of scientist-theologians seeks to retain the fundamental Christian premise of a personal, loving, participating creator within a scientific framework. I will refer to them as the *premise keepers*.

The old creationists take the Bible literally and are forced to conclude that much of science is wrong. A new brand of creationists claim that science is incomplete and requires an external "intelligent designer" to explain the complexity of the universe. By contrast, the premise keepers concede that established science, built upon a framework of materialism and naturalism, is empirically and theoretically sound and can account for complexity by natural means.

The premise keepers embrace biological evolution as basically correct, recognizing that what disputes may exist among evolutionary scientists pose no serious challenge to the overall scheme. While a few premise keepers still trot out the fine-tuning cosmological argument for design in the universe as a whole, most are willing to admit that modern cosmology may be able to provide a viable model for a non-miraculous origin of the universe. And, while they disagree on many details more theological than scientific, the premise keepers generally view God as not so much interfering with natural processes, including chance, as working within them. As particle physicist, Anglican priest, and 2002 Templeton Prize winner John Polkinghorne puts it, God does not work against the laws of nature because "that would be for God to act against God."¹ Still, one can only wonder how much of Christianity remains after its miracles are extracted.

The God of the premise keepers is not the Enlightenment deist god who set things in place at the creation and has since left us alone to live out his perfectly conceived divine plan. God still asserts creative control in the present world, but premise keepers dispute exactly how much control and the mechanism God uses in interacting with the world. The premise keeper God is also not the pantheist god--some abstract Platonic concept of perfection and order. Polkinghorne rejects

Spinoza's axiom *Deus, sive Natura* (God = nature), saying "That was Einstein's God, but it is certainly not mine."² The God of the premise keepers is the God of the Bible, reinterpreted to assert his will within the natural laws, randomness, and chaos he purposefully wrote into creation. Whether that fits the God worshipped by most Jews, Christians, and Muslims is another matter.

Polkinghorne sees human experience as encouraging belief in a divine mind, and in divine purpose behind the history of the world. He laments: "If cosmic history is no more than the temporary flourishing of remarkable fruitfulness followed by its subsequent decay and disappearance, then I think Macbeth was right and it is indeed a tale told by an idiot."³ Perhaps it is just such a tale, whether Polkinghorne likes it or not.

Chaos Theology

Modern science has left theology in a quandary. The universe revealed by science shows humanity as an infinitesimal speck in space and time with random chance as an important factor affecting events.⁴ Where can God exert his influence in such a universe?

As far as we know from current science, the development of macroscopic complex systems, most notably the structures of living organisms, arise by processes of self-organization and natural selection that include a large element of chance. At most, natural laws only place broad limits upon what can develop. Our present best guess is that the behaviors of macroscopic systems are *emergent phenomena* that result from a blend of chance and constraint. Start them up again and they will not develop the same way because of the role of chance in randomly selecting the particular path out of many possible paths a system will follow as it develops with time. This includes, but is not limited to, the evolution of life and humanity—making it quite a theological challenge to find any purpose in it all without restoring determinism, natural or divine.

Many theists see the very existence of chance as a grave threat to their faith.⁵ The premise keepers take the opposite view; they look to chance as just the place where God asserts his will. Polkinghorne and 2001 Templeton Prize winner, biochemist, and fellow Anglican priest Arthur Peacocke have urged that interpretation. They think they have found room for God to act within the framework of *chaos theory*.⁶

The defining characteristic of chaotic systems is their extreme sensitivity to initial

conditions, which results in their appearing to behave unpredictably. This is known as the "butterfly effect" in which, metaphorically, the flap of a butterfly's wings might affect the weather a week or more in the future.⁷

Besides the butterfly effect, chaotic systems exhibit other interesting properties. Important for our purposes, they can remain for some time in a quasi-stable state; but, then, a small perturbation can drive them to a completely different state. The atmosphere is a good example. While the flap of a butterfly's wings probably won't do it, some small air movement or abrupt temperature change in one place can abruptly drive the weather over a large area from a quasi-stable calm state to a quasi-stable stormy state.

Polkinghorne and Peacocke see chaotic systems as providing an opening for God to act in the world without having to violate any natural laws, or at least not violating them in any noticeable way, which would have been observed by now. Neither visualizes God as selectively injecting huge amounts of *energy* into various places in the universe needing his intervention, thus violently breaking the law of conservation of energy. Rather, in Polkinghorne's scheme, he injects *information*. God provides a gentle nudge that moves a complex system along the path he wishes it to go, taking advantage of the amplifying effect of chaos.

Peacocke's vision of the role of chaos is different from Polkinghorne's, although Polkinghorne has not explicitly rejected the former's approach. Peacocke does not imagine God interfering in any specific event but acting on the whole by a process called *top-down causality*. In a trivial example, if you rotate a wheel you are causing all the atoms of the wheel to move in a circle. Thus Peacocke follows modern holistic fashion in claiming that that some principles exist that cannot be understood in the traditional scientific reduction of a system to its parts.

In fact, bottom-up explanations for all physical systems, including chaotic ones (and the rotating wheel), are conventionally made. Reductionism--in which you analyze a system in terms of its parts--does, in fact, recognize that parts can interact, creating unique systems that contain novel and unpredicted properties. The behavior of chaotic systems was discovered by completely reductionist methods. No new fundamental physical principles, reductionistic or holistic, were either hypothesized or uncovered in the process.

This is not to say that everything is predictable from elementary particle theory. As already noted, chance plays such an important role in all physical phenomena that such predictability is not

to be expected.

Quantum Theology

nancey Murphy and other theologians have raised objections to the use of classical chaos as a medium for God's action.⁸ She notes that chaos is based on Newtonian mechanics and thus still a deterministic theory leaving no room for God's action. However, quantum mechanics can ride to the rescue.

What I will operationally define as *true randomness* in an otherwise deterministic chaotic system can come about when the Heisenberg uncertainty principle prevents the initial variables of the system from being measured with sufficient accuracy for the evolution of the system to be predictably repeated. In this way, the motion of a particle that is part of a chaotic system becomes intrinsically unpredictable even though the system itself is classically deterministic.

Murphy argues that "God works within the smallest constituents of macroscopic entities, since these smallest constituents are entities of their own right. If we begin with this hypothesis, it is not necessary--in fact it is counterproductive--to argue for causal indeterminism at higher levels of organization (excluding the human level) since God's will is assumed to be exercised by means of the macro-effects of subatomic manipulation."⁹

As we will see below, one of the major problems for the premise keepers is to explain how God assured that humanity, or a reasonable facsimile, evolved consistent with Darwinian natural selection. If I interpret Murphy correctly, God could have decided just when a potassium (K40) nucleus in the blood of some early mammal decayed and the beta electron from the decay knocked another electron from an atom in its DNA, thus producing one of the millions of mutations that eventually led to the evolution of *Homo sapiens sapiens*.

Evolution Theology

A number of believing scientists and science-savvy theologians have woven Darwinism into their metaphysical schemes. They have taken the apparent role of chance in complex systems to be gaps into which they can insert their God. In this they differ from the chaos and quantum theologians, who still envisage God as interfering with the process--albeit in an undetectable way.

Biologist-theist Kenneth Miller is one of the more capable voices defending evolution

against the current wave of creationist assaults. He sees creationists as missing a very important feature of the randomness involved in evolution, which they so abhor: "The only alternative to what they describe as randomness would be a nonrandom universe of clockwork mechanisms that would also rule out active intervention by a supreme Deity. Caught between these two alternatives, they fail to see that the one more consistent with their religious beliefs is actually the mainstream scientific view linking evolution with the quantum reality of the physical sciences."¹⁰

Of course, mere consistency with a specific religious belief is not a very powerful argument for that belief. Randomness is equally consistent with a religion based on the Tooth Fairy, or no religion at all.

Chance, or indeterminism, in science rescues theology from Enlightenment deism. If the Newtonian world machine had not been dismantled by quantum mechanics, the only place that God can have acted in the world was at the creation. Miller agrees with physicist and 1999 Templeton Prize winner Ian Barbour that "Natural laws and chance may equally be instruments of God's intentions. There can be purpose without an exact predetermined plan."¹¹

Two kinds of purpose can still be conceived in this context. In one, described above, God asserts his purpose by micromanaging the quantum events that induce the various choices on the path a system follows as it develops with time. In this case, things still come out exactly the way God wants, including the evolution of humanity. This still complements the traditional belief that we are special creations, formed in "God's image," if not exactly physically, then at least spiritually with his personal qualities of love and forgiveness.

The second possibility, which one hears from the evolution theologians, is that God does not micromanage but allows chance to operate. In this case, his purpose is served by any path that is followed, including, it seems, a path that does not lead to the evolution of humankind. Theologian John Haught says that "a God whose very essence is to be the world's open future is not a planner or a designer but an infinitely liberating source of new possibilities and new life."¹²

In this theology, the accidental processes of nature are *the means* by which God allows freedom to exist in the universe. The future is in fact open and not predetermined by physics or God.

Theistic Naturalism

A few years ago, physicist-theist Howard Van Till found himself enmeshed in a debate with intelligent design mouthpiece Phillip Johnson on the pages of the Christian journal *First Things*.¹³ Van Till described an evolution theology akin to that which I described above, in which God does not micromanage: "The full array of functionally viable forms of DNA (and the creatures thereby represented) [constitute] a 'possibility space' of potential life forms--this possibility space itself, along with all connective pathways, being an integral component of the world brought into being at the beginning." God then employs "random genetic variation as a means to explore and discover (in contrast to create) viable pathways and novel life forms so that the Creator's intentions for the formative history of the Creation might be actualized in the course of time. . . . The possibility space of viable and historically achievable life forms is an integral aspect of the world that God created at the beginning. Material systems need only employ their God-given functional capacities to discover some of the possibilities thoughtfully prepared for them."

But Johnson was not buying this. To him, this "theistic naturalism" is not Christianity. Rather it is science attempting to co-opt the revealed truth with nothing more than an updated desire. "When 'science says' that natural selection can accomplish wonders of creativity, that is the end of the matter. Religion cannot survive in a naturalistic academic culture if it opposes science, and so religion must accommodate to science on the best terms it can get. Effectively, that means that God must be exiled to that shadowy realm before the Big Bang, and He must promise to do nothing thereafter that might cause trouble between theists and the scientific naturalists."

While Johnson obviously wants to pick a fight with atheistic scientists, it seems, the critical battle for him is not between religion and science but between different viewpoints within Christianity--between anti-science and pro-science theologies. Perhaps this is why so few atheistic scientists have taken Johnson's bait; they see nothing of scientific merit to argue with him about.

The New Schism

Sharp theological differences exist among the premise keepers, and even greater disputes between them and other Christian thinkers. These various internal schisms are more formidable than any that may separate them from scientists and bear little resemblance to those that have marked the history of the Church.

For example, Polkinghorne and Peacocke differ substantially in their theologies.

Polkinghorne holds on to rather conservative beliefs, such as the virgin birth and resurrection, while Peacocke questions many traditional teachings.

After Peacocke was awarded the million dollar 2001 Templeton Prize for Progress in Religion, *Christianity Today* editor-at-large John Wilson complained that what Peacocke preaches is not Christianity: "His theology . . . turns out to entail a rejection of anything resembling Christian orthodoxy from the first century to the present."¹⁴

The work of the premise keepers has been strongly supported by grants and awards from the John Templeton Foundation, whose stated mission is to "stimulate a high standard of excellence in scholarly understanding which can serve to encourage further worldwide explorations of the moral and spiritual dimensions of the Universe and of the human potential within its ultimate purpose."¹⁵ Ultimate purpose is assumed, but Templeton scholars are free to speculate about what it may be.

In their willingness to operate within a framework of scientific knowledge, these scholars find themselves in deep conflict with members of several other well-financed Christian groups that have also assembled in recent years to deal with issues of religion and science. The latter groups promote a more conservative Christian agenda with the goal of transforming both science and society so that they more closely align with their doctrinal interpretations of Biblical teachings. In particular, the conservatives are aghast at the notion of unguided evolution of life on Earth. They view Darwinian evolution and the more general materialistic assumptions of science as the cause of what they perceive as the moral decay of modern society. They wish a return to the perfect, godly society that existed before the publication of *The Origin of Species by Means of Natural Selection* in 1859.

Leading the conservative movement in the United States are fellows of the the Center for Science and Culture (formerly, Center for the Renewal of Science and Culture), an arm of the Seattle-based Discovery Institute.¹⁶ CSC fellows and their supporters accuse mainstream scientists of dogmatically refusing to accept the "new evidence" that signs of purposeful design in the universe can be found in scientific data from cosmology, cognitive science, and molecular biology. However, they do not press their case in scientific forums. Rather, they operate in the public and political arenas where they strive to convince lay people and politicians that scientists need to abandon their "counterintuitive" attachment to materialism. Their practical goal is to include this

"new evidence" in science curricula in the name of "fairness." This is exemplified by what they have termed the "Wedge Strategy." Among their stated goals are:

- o To defeat scientific materialism and its destructive moral, cultural and political legacies.
- o To replace materialistic explanations with the theistic understanding that nature and human beings are created by God.
- o To see intelligent design theory as the dominant perspective in science.¹⁷

Johnson and the design theorists of the Discovery Institute have not yet succeeded in their efforts to undermine Darwinism and naturalism, at least within the scientific community. They might as well try to undermine the atomic theory of matter. Intelligent design theory, in its current form, is filled with blatant misrepresentations and elementary scientific errors.¹⁸

The premise keepers deserve credit for working within established science instead of fruitlessly challenging it. They have provided a place for a God in the interstices of quantum randomness. Although no God is necessary to create the wonders of the universe, those who wish to believe in both deity and science might find the premise keepers' God appealing.

At least, the premise keepers aid in the battle against fundamentalists of all religions. These fundamentalists rely on the scientific illiteracy of the general public and the timorousness of politicians to promote theology over biology and piety over reason, in order to turn back the calendar to the age of faith, the age of theocracy--the dark ages.

Still, Genesis says that God made "Man" in his image to rule over the rest of creation. Dr. David A. Staff, minister of the First Evangelical Free Church in Ames Iowa, expresses the widely held, orthodox Christian view that Man is "God's very special creation . . . The object of God's stunning, loving plan."¹⁹ The premise keepers who reject guided evolution and accept that humanity is an accident have not yet succeeded in molding their God into the traditional God of Christianity.

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14 John Wilson, "Examining Peacocke's Plumage," *Christianity Today* (March 12, 2001).

15 Templeton Foundation [online], www.templeton.org.

16 Discovery Institute [online], www.discovery.org. Follow links to the Center for Science and Culture where its mission statement, list of fellows, and other information can be found.

17 The CSC "wedge strategy" currently can be found at . [Online], <http://www.public.asu.edu/~jmlynch/idt/wedge.html>. This has been removed from the CSC web sit but its authenticity is documented. See James Still, "The Wedge Strategy Three Years Later," [online] <http://www.secweb.org/asset.asp?AssetID=200>.

18 A complete set of links to articles and books on both sides of the issue can be found at the web site *Critical Thought and Religious Liberty*, [online] <http://www.freethought-web.org/ctrl/intelligent-design.html>.

19 David A. Staff, "Christian Orthodoxy on MAN: God's Very Special Creation," [online]; <http://www.amesefc.org/sermons/sr080402.htm>.