

*The God of Hope and the End of the World.* John Polkinghorne. New Haven: Yale University Press, 2003. 154 pp.

I sometimes say I live in two worlds but more precisely, two worlds live in me. Most of the time the worlds of science and theology coexist reasonably well in my head and in my day. But some ideas seem to force a choice. This book asks whether that choice is necessary, and comes up with a surprising answer.

It seems natural to have to choose between science and religion. For example, a scientist may say the data show the living world to be the product of natural selection, itself driven by error, that is, by random germ-line DNA mutation. This process cannot generate anything nor anyone perfect, nor can it provide meaning nor even stability to any living species, including our own. What can a religious person do with such a vision of our world and of our place in it, except to say that despite these data there must be something more? But that response displaces this vision of the living world—made up of the facts from nature that we can recover by testing our ideas—with a revelatory truth. Whether that truth is to be found in Torah, Quran or Gospel, it needs no evidence but faith, and so data like these from science may be simply shoved aside.

Similarly a religious person may raise hackles among scientifically-minded friends by articulating the notion of the eschaton, that is, that resurrection is real, and that this living world of nature is only a portion, perhaps not even the most important portion, of what awaits us. Death, scientific friends will say, is final. Remember, they will say, the second law of thermodynamics, and consider the degradation of your own DNA-based individuality into informationless, boring subunits once you die. Death, entropy and the loss of individual specificity we call mortality are all built into natural selection, as they must be built into any natural system. There too, it seems a choice has to be made.

Choosing between these two positions—the finality of death vs. the reality of the eschaton—is more than simply a matter of personal belief. Where one stands on this choice will determine one's answer to the question that lies at the heart of any thinking person's sense of right and wrong: What is the source, the justification, the reason for behaving one way and not another?

Of the four possible choices—neutral acceptance of both science and theology, presumption that either the one or the other holds the more important reality, or active acceptance of both at once as overlapping—the presumptions that either one holds a final truth closed to the other,

end any serious engagement with one or the other. The stance of neutral acceptance as articulated by Steven J. Gould, with science and religion as two equally valuable but non-intersecting “Magisteria,” keeps both in view, but is not of much use in addressing the great issue at the intersect, that of morality’s origins and purposes. This book is an example of the fertility of the remaining response, to engage both science and theology, because both have overlapping contributions to make on precisely this question.

Many scientists and philosophers choose to say that science grasps the real world entire. Though their definitions of “the world entire” change and will keep changing as science keeps redefining that reality, they do have a clear explanation for the existence and the importance of moral choices. We—any human being or, in the extreme case, any sentient being—may choose what we do according to any number of influences that emerge from our history and our experiences. The Utilitarian “greatest good for the greatest number” is an example of a naturalistic moral position that will in most cases do a minimum of harm. Our morality is in any event our creation, they say, just as are our languages, our cultures, and—here’s the rub—our religions.

Contrast this choice with that of a religious person who begins with the presumption—based on faith, with shared emotional states of the unexpected, unreproducible sort that a person of science cannot accept as evidence—of an entire world of kindness, justice and clarity, all of it lying tantalizingly outside the world of mortality and evil we inhabit. To such a person the origin of moral choice is also obvious. It is the choice that aligns a moment on Earth with this other world. A moral choice is essential not only because emulation is a form of respect, but also because it is the path from here to there. While the eschaton will be different from this world—better, free from pain and suffering—it will also have some continuity with this world. Hence, moral acts while alive but mortal, may—must?—lead to good outcomes in the World to Come. To paraphrase Mae West on goodness, data has nothing to do with it.

Enter John Polkinghorne, K.B.E., F.R.S., Fellow of Queen’s College, Cambridge and Canon Theologian of Liverpool, for whom the birth, life, death and resurrection of Jesus are unique historical events that not only link this world to the eschaton, but that also provide a place for science in both. At once an accomplished theoretical physicist, an Anglican priest, and a winner of the Templeton Prize, Polkinghorne commands attention when he writes on his personal vision of the Eschaton and its link to the natural world. It is a rare gift to be able to make a closely reasoned argu-

ment that contains elements from biology and cosmology, and elements from the Psalms and the Gospels. And certainly he asks the right question from the religious side: "the issue is whether we live in a world that makes sense not just now, but totally and forever."

It once was hard for me as a scientist to get used to an argument from a scientist that begins with the axiomatic presumptions that there is a Heaven, that there is an end to this world, and that after the end, there will be a second life in that Heaven. But if we allow these as axioms, then his argument is clear and compelling. Eschatology matters to science, because the eschaton must contain elements of this natural world. This means that, like it or not, scientists are providing the world with material evidence for an aspect of Heaven's workings.

The ground bass of the discussion . . . is the necessity of an interplay between continuity and discontinuity in speaking of God's purposes beyond the end of history. Without an element of continuity, the story of the eschaton would simply be a second story, with no coherent connection with the presently unfolding story of this creation. Those of us who are participants in the present process of the world would have no role or interest in that second story. Without an element of discontinuity, however, that second story would simply be a redundant repetition of the first. (xxvii)

The question that must be asked, though, is: Does this notion of a scientifically describable world in partial continuity with the eschaton matter from the scientific side as well? A positive answer would remove the sting of choosing between science and the eschaton. This book makes a good case for a positive answer across a host of different religions and different sciences, from his Christianity and cosmology, to my Judaism and biology.

Polkinghorne takes neither of the two common shortcuts to get to this answer. He is no literal-minded Creationist, nor is the Anthropic Principle his back door to the eschaton. Physical laws that permit carbon to exist may permit carbon-based life, but do not assure the world of us emerging in it. Rather, when Polkinghorne sees science as providing evidence for the Creator's will for continuity from this world to the Next, he finds that continuity not in the data, but in the enterprise of science itself, based as it is on four fundamental axioms: reproducible process, intrinsic relationality, stable information and mathematic abstraction.

These, he argues, will be found in the World to come. In all other ways that World will be as different from ours, as death is different from resurrection. Thus in his vision, time will persist in the eschaton, but ful-

fillment will replace the coming-to-be that characterizes our evidence for time's passage. Our physics tells us of the non-locality of subatomic particles; he draws from this the notion that the entire creation will remain relational, not atomistic, in the eschaton. This is indeed an exciting line of argument, as it speaks to the inadequacy of any theology based on a purely individual concept of human destiny; in other words, Polkinghorne here is arguing for a notion of a soul that need not be entirely limited to a single person's body.

The persistence of information in the eschaton is Polkinghorne's most biologically grounded statement of faith. In Chapter 9, "Personhood and the soul," he argues that in this world "... what does appear to be the carrier of continuity [of living personhood] is the immensely complex 'information-bearing pattern' in which ... matter is organized." He then goes on to make the leap of continuity to the eschaton:

This pattern is not static: it is modified as we acquire new experiences, insights and memories, in accordance with the dynamic of our living history. It is this information-bearing pattern that is the soul. (106)

This is strong stuff for a biologist: is it the DNA of one's germ-line, or the loops of gene regulation that have produced one's brain and body, or the neural networks that have arisen and been stabilized by experience, that are this "information-bearing pattern?" Or is it all of them? Whatever it is, Polkinghorne is arguing here that it will be the source of continuity in resurrection.

I am not troubled here by his audacity, but by his apparent simplicity. Where in this pattern is what we have experienced but forgotten, either by age, or by the pain of a memory being unbearable? Where in this pattern is the set of links that begin with the mother and her infant, that delocalize these patterns from one person into a group of two or more? He is clear here that he is not talking about a heavenly cloning: resurrection in his eyes has nothing to do with mere restoration. The continuity provided by this pattern must be joined with a perfection unavailable to us here. Perhaps he is implying that the resurrected pattern of a person with Alzheimer's disease may once again recover memories, and the pattern of an insane person regain its equilibrium. As stated here, his is a powerful vision at the very least, though one that runs the risk of marginalizing attempts here on earth to prevent, cure, or, at least, ameliorate these pattern-disrupting events in the lives of so many of us.

It would be unfair to end with this problematic example. A cosmologist, Polkinghorne presents in Chapter 10 a vision of the eschaton based

on continuity from his own science that is breathtaking in its audacity. He does not turn away from entropy, but embraces it. The species will end, the planet will end, the stars will end, one day the universe itself will end: those are the data he has to live with as a Christian. How? By the argument that the eschaton will be in continuity with these facts through a cosmic resurrection—a second, better, panentheistic world to come, suffused with God and cured of all the partialness and decay of this world.

Space, time, matter will all be there, and so will music. Music is the key: different notes played over time imply that other things will change there too, and that therefore the eschaton will dynamically escape the cold sterility of Platonic perfection. This is to say, I think, that Polkinghorne has found a way to keep science itself continuous with his eschaton. And as a theologian, he is deeply aware that the business of religion is eschatology; otherwise the Utilitarian Rule is good enough.

This is a fine book, deserving of close study by open-minded scientists and theologians, and, of course, all those who—like Polkinghorne and, I suppose, me—find themselves obliged to be both at once. Let me close with his words:

If the universe really is God's creation, the ambiguity of its past history and present prospects will have to be resolved in its final end. In *Four Quartets*, T. S. Eliot struggled with how meaning is to be found in the coinherence of beginning and ending. 'In my beginning is my end.' The reason that eschatology is such an indispensable element in theological thinking is that it responds to the question of the total meaningfulness of the present creation, a meaning that can only finally be found beyond science's extrapolation of contemporary history. (140)

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