

COMMENTS ON SANBORN BROWN'S "CAN PHYSICS CONTRIBUTE TO THEOLOGY?"

by John Polkinghorne

Abstract. Sanborn Brown raised in a preliminary form issues relating to science and religion that have been subjects for increasingly more sophisticated discussion over the intervening forty years.

Keywords: Sanborn Brown; models; truth.

Reading Sanborn Brown's contribution to an early issue of *Zygon* is a kind of archaeological encounter with the way things were at the time when the dialogue between science and religion was beginning to move into its contemporary phase. The English mathematician and theologian Eric Mascall had already published his Bampton Lectures (Mascall 1956), and Ian Barbour's seminal work (1966) was about to appear. For a good deal of the period following it would be the physicists who made many of the major contributions to the conversation with theology. It is therefore fascinating to have access to the thoughts of a distinguished physicist, obviously sympathetic to religion, right at the start of this new era.

Some things do not change all that much, and Brown begins by expressing regret about the "two cultures" divide in society. Then and now, this means that many theologically minded people pay less attention to the content of science than would be beneficial for them. For Brown, however, it is particularly a lack of attention to methodological parallels that he regrets. He uses his experience of physics to endorse a strategy that one might call bottom-up thinking, an approach that starts from experience and then seeks to move in the direction of conceptual understanding. When I gave my Gifford Lectures (Polkinghorne 1994) I sought to consider issues of Christian belief in just such a fashion.

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The way Brown describes scientific method has a certain period air to it, for this experienced scientist writes in a manner that is pretty innocent of attention to the insights and critiques of the philosophy of science. There is continual appeal to "facts," treated as unproblematically given items of knowledge, whereas today there would be much greater acknowledgment of the way in which empirical findings need interpretation before they become scientifically interesting. Theory and experiment do not simply confront each other; they subtly intertwine.

Another key word for Brown is "model." In this case, contemporary thinking still exhibits a variety of views. Personally I would reserve the word for descriptions that are acknowledged to be partial accounts, devised to represent certain controlling aspects of what is going on in some particular phenomenon but which do not pretend to be adequate to a whole range of phenomena, in the way that would be necessary if they were to be considered as candidate approximations to what is actually the case. For these latter accounts I would use the word *theory*.

The distinction can be made clear through two examples that Brown cites, when they are analyzed in a way different from his treatment. In the case of light, wave and particle are two models of its behavior in different experimental circumstances, only reconciled with each other through the deeper theory of quantum electrodynamics. In the case of heat, the accounts of caloric and energy of motion were actually two different theories, only one of which could survive in the end. In the case of theology, the various titles that the New Testament writers assign to Jesus are models, but the later christological discussions of the Fathers were attempts at theory making.

Brown says "A scientist does not know what truth is," and he speaks only of "a remarkably successful attitude of mind," leading to a consensus among suitably qualified peers. Yet even in this postmodernist age, most scientists still believe that there is a truth to be sought, even if our grasp of it will never be fully adequate to all circumstances. (Hence the "science wars" about the more extreme claims of some sociologists.) I believe that theology entertains the same hope, even if it has much greater reason to recognize that its finite discourse about the infinite reality of God will always be subject to significant apophatic limitation.

Brown sees very clearly that a critical difference between science and theology lies in the question of validation. Science, in its investigation of encounters with an impersonal physical world, possesses the great secret weapon of repeatable experiment. In all forms of encounter with personal reality, and even more in meetings with the transpersonal reality of God, a more delicate and nuanced appeal is necessary to the uniqueness of revelatory encounter. Hence Brown's interesting discussion of the role of the Bible as being "testimony to a people who survived about as much travail

and anguish as any people could be asked to submit to in any given thousand years.”

Brown draws our attention to the importance of extreme regimes in physics (he calls them “boundary conditions”) in sifting successful theories from those that will ultimately fail. He believes that theology should have recourse to a similar strategy. I agree. A case to which he does not refer would surely be those events and persons whose character is such that they are seen as conveying particular and irreplaceable revelatory knowledge of God’s nature and purposes. A Christian example is the way in which the New Testament writers feel driven by their experience of the risen Christ to use both human and divine language about Jesus.

Brown’s own boundary example is eschatological, the challenge put to theology by science’s reliable predictions of the death of all life on Earth when the Sun becomes a red giant, and the eventual futility of the whole universe through final collapse or decay. It is interesting that only forty years later has a serious and detailed engagement with this issue begun in the science and theology dialogue (Polkinghorne and Welker 2000; Polkinghorne 2002).

The conversation continues. We can be grateful to Brown for his early contribution and to the distinguished journal *Zygon* that published it.

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