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Divine Action & Modern Science

By Nicholas Saunders

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1 Introduction

Many different publications on the relationship between divine action and modern science have recently appeared. Nicholas Saunders, in his latest book titled *Divine Action & Modern Science*, has done an admirable job in assessing recent scholarship. Because of being densely written, it does not make for great bed-time reading. In spite of some considerable deficiencies, this book provides a detailed map of the diverse landscape of the contemporary discussions concerning divine action and a scientific worldview.

2 The Difference between Science and Theology

The first chapter deals with the biblical background of and the theological reasons for addressing the issue of divine action. Saunders immediately addresses an important methodological issue which I believe is often overlooked. Saunders argues that '[t]he claims for SDA [special divine action] that are so widely cited in contemporary science and theology literature must be seen in their original context both as products of the ancient Near Eastern world-view, and as highly dependent on the understanding of natural processes at that time.' (6) Our modern conception of divine action may be related to the biblical concept, but due to the huge differences between the biblical and contemporary science-based world-view, the two understandings of divine action are basically incommensurable. Consequently, theologians working in the field of science and religion make a category mistake when, for example, they question the authenticity of biblical miracles on the basis of scientific knowledge. The question then is: does it make sense to deal with the theological concept of divine action from the perspective of modern science? Saunders never addresses this issue; in the remainder of the book he simply assumes that it does. Saunders recognizes that there is a difference between science and religion – which, unfortunately, he does not explain – but he claims that he makes no distinction between scientific and theological explanations. Hence, the tenability of theological assertions can be evaluated in terms of scientific understanding of the world. This view presumes a realist and even scientistic view of theology which, in my view, should have been more explicitly argued for, but Saunders simply takes it for granted.

3 Theological approaches

Saunders' realist view of theological assertions and the seemingly logical compatibility and translatability of them in terms of scientific methodology, concepts, and theories pervades the rest of his study. The second chapter explicates the different theological approaches to the concept of divine action. Saunders distinguishes between General Divine Action (GDA) and Special Divine Action (SDA) on the basis of the categories of universality and simultaneity versus particularity. Saunders emphasizes that SDA is characterized by having local causal implications. It is this view of SDA on the basis of which the central problem of divine action is formulated: 'If the concept of SDA is to have any coherence in a scientific world-view we need to be able to account for the particular and local actions of God in a manner that does not conflict with scientific methodology' (23). One attempt to avoid conflict is to subsume SDA under GDA, as in the approaches of Wiles, Kaufman, Calvin and Vernon White. These approaches are rejected because they blur the distinction between particular and universal divine actions and imply a completely deterministic worldview. Saunders goes on to discuss intentional and causal accounts of divine action, the analogy between divine action and human action (as well as the idea that the world may be God's body—an idea Saunders rejects), and the relation between the 'mental' and the 'natural' in human action and its connection with divine action. Saunders eventually argues that every defence of divine action basically falls under one of two categories. Some argue that God's action is fully compatible with the causal order of nature; if God acts, he does not initiate new causal sequences (compatibilist SDA). Others argue that God's action always initiates new causal sequences (incompatibilist SDA). The incompatibilist position presupposes some kind of indeterministic worldview, whereas the compatibilist position is compatible with metaphysical determinism, for example in the 'single act' theories of Wiles and Kaufman. But if these single act theories are rejected, the possibility of incompatibilist SDA must be investigated. This automatically raises questions about determinism.

4 Laws of nature and determinism

In chapters three and four, Saunders deals more explicitly with the idea of determinism and its relation to conceptions of natural law. Chapter three addresses the issues surrounding (the definition of) miracles and laws of nature. So-called contingency miracles do not pose particular problems, for they do not break the laws of nature but merely are 'extremely rare natural coincidences that, when interpreted in a religious context, have particular religious significance' (50). It is the category of violation or intervention miracles that raises questions, but, as Saunders makes clear, the discussion surrounding these miracles is 'highly dependent on what ontological conception of the laws of nature one adopts' (52). Thus, Saunders sets out to give a highly compact account of the different views of laws of nature. The conclusion is that only a necessitarian account results in interventionism. All other (regularity, instrumentalist, and irreducibly probabilistic) accounts imply that violations of the laws of nature are either impossible or simply

inconsistent.

Because a necessitarian account of the natural order eventually leads to the view that the universe is deterministic and thus, excludes SDA, Saunders considers the concept of determinism in chapter four. He argues, quite rightly in my view, that the notion of predictability is an epistemological consequence of determinism, but that one ought to distinguish it from ontological determinism in which the future is completely determined by the past and present. Moreover, it is quite difficult to define determinism accurately, let alone to actually argue in favour of a deterministic worldview. One would expect that for this reason, Saunders holds that any scientific evidence for or against determinism is inconclusive—as I would argue. However, Saunders constantly emphasizes that any conclusion as to scientific evidence for indeterminism is unwarranted. Moreover, in the remainder of the book, he seems to assume the scientific viability of a deterministic worldview.

5 Quantum theory and divine action

It is at this point that Saunders's book shifts from a mere methodological discussion into discussions of particular scientific theories. These theories, such as quantum theory, chaos theory, and the concept of emergence are all used by theologians to argue for a certain form of indeterminism. Though describing the use of specific scientific theories makes the relevance of the foregoing methodological issues more tangible, Saunders's style of writing forces one to read carefully and if possible without pausing. Chapter five, which deals with divine action and quantum theory, catalogues at least ten approaches which, each in their own way, rely on quantum theory to establish indeterminism and the possibility of SDA. I found this chapter particularly hard to read because the 32 pages of this chapter merely contain densely written summaries of the different positions the different emphases of which may not be fully appreciated by someone not already familiar with this field. Chapter six then sets out to describe the most important interpretations of quantum theory and their relevance for theology. Again, Saunders particularly stresses the deterministic basis of quantum mechanics: the Schrödinger equation. He argues that according to quantum theory, there may be unpredictability (the Heisenberg uncertainty principle), but this is merely an epistemological aspect. Because of the Schrödinger equation, the unpredictability does not refute the possibility that our reality may still be ontologically deterministic. Therefore, according to Saunders, quantum theory cannot be used to defend an indeterministic worldview.

Yet, as Saunders concedes, the real problem does not reside in quantum theory, but in the concept of a quantum 'event,' which, as some theories suggest, does not take place until the point of measurement. That being so, Saunders investigates what exactly is involved in the measurement problem, and how divine action is related to that. He describes four possibilities for God to act in the measurement process, but dismisses all of these as scientifically unwarranted. Finally, Saunders considers alternative approaches to quantum theory, such as Everett's 'many worlds' approach, and the Broglie-Bohm formulation. All in all, this

chapter is a quite technical exposition (including some equations), which, again, presupposes already a familiarity with the theoretical issues involved. However, Saunders's conclusion is crystal-clear: '*. . . on the terms of our current understanding of quantum theory, incompatibilist non-interventionist quantum SDA is not theoretically possible*' (172, emphasis in the original).

6 Chaos theory

Chaos theory is a relatively new phenomenon in the field of science and religion. It was introduced by John Polkinghorne. In the seventh chapter, Saunders gives a description of the central aspects of chaos theory, and describes in what way Polkinghorne's interpretation deviates from mainstream interpretations. Personally, I found Saunders's description of chaotic behavior particularly hard to follow, and I guess this will be even more the case for those readers not already familiar with the intricacies of chaos theory. He gives a quite technical treatment of strange attractors and fractals, of which I would have appreciated some illustrations elucidating the issues in question. Especially the crucial point of the determinism entailed by the mathematical models of chaos (exactly the point Polkinghorne criticizes) is insufficiently explicated. It remains unclear what constitutes the determinism of those models. Saunders does a good job in attempting to counter the naive criticisms of Nancey Murphy and Arthur Peacocke, who argue that Polkinghorne ignores the underlying determinism of chaotic behavior. Polkinghorne's position is much more subtle and his interpretation of chaotic behavior thrives on his critical realist metaphysics. Though Saunders is aware of this connection, his interpretation of Polkinghorne's position I believe is confused for at least two reasons.

First of all, Saunders argues that Polkinghorne makes a distinction between the mathematical models of chaotic behavior and empirical chaos. This distinction is, according to Saunders, based on a 'metaphysical postulate' that empirical chaos is indeterministic (190–193). Here, Saunders seriously misinterprets Polkinghorne. Postulating something entails giving no further reasons for it. However, Polkinghorne does not simply assume that reality *is* indeterministic, but he argues that we have *strong reasons* indeed to believe that it is. Polkinghorne points to emergent phenomena, i.e. systems that display behavior arising from but not reducible to the relations between the constituent parts. Polkinghorne uses the example of the mind as an emergent property of the brain as a specific case of emergence. However, Polkinghorne argues that emergent phenomena are not conclusive evidence that our reality is indeterministic, but mere *indications* that this is so. This is entailed by his critical realism which is not to be interpreted as 'what we know about x implies (or even entails) that x is the case,' but as claiming that 'what we know about x is a (strong) indication that x could be the case.' Polkinghorne uses this argument in the case of real-world chaos: the unpredictability of empirical chaotic systems is not evidence for indeterminism, but serves as an indication that this could be so. Hence, there is no metaphysical postulate here, but a more subtle argument based on Polkinghorne's metaphysical critical realism.

The second confusion follows from the first. Saunders argues that because empirical chaotic systems are indeterministic, such systems in Polkinghorne's view allow for the input of active information without violating the principle of the conservation of energy. Again, this is a serious misinterpretation. Such an argument comes down to a view in which God acts *through* chaotic systems, by way of information input; but this is exactly the view that Murphy and Peacocke criticize. Moreover, Polkinghorne himself contrasts his use of active information with the concept of information as used in information theory. In my view Saunders has misunderstood Polkinghorne's use of the concept of 'active information,' though it must be conceded that nowhere Polkinghorne gives a clear description of what exactly he means by it. I believe, however, that there are reasons to believe that Polkinghorne uses the sensitivity of chaotic systems as an argument for a holistic view of the universe. A possible interpretation of Polkinghorne's view is that the universe-as-a-whole is to be seen as an information-processing system responding to information entailed by the force field of the immanent Spirit, similar to the way in which a ship moves on automatic pilot, responding to the information contained in radio waves. In this way, God may alter the trajectory of the universe and influence specific systems in it by leaving the total amount of energy in the universe intact; it is the universe that responds to God's information. Whether or not this reconstruction of Polkinghorne's view is correct remains to be seen, but at least it is consistent with Bohm's use of active information, and with Polkinghorne's view that God acts by some sort of top-down causation.

7 Whole-part models

Finally, in the eighth chapter, Saunders investigates Peacocke's notion of top-down causation or downward emergence, a concept in which God influences the world as a whole, and by a trickle-down effect may influence particular systems in it. Saunders tentatively concludes that this view of SDA is as yet the 'most promising current theory of SDA' (213). In my opinion top-down causation would have deserved more attention than the mere seven pages attributed to it here, basically because Saunders does not make clear what is meant by emergence. He makes an elusive distinction between epistemological and ontological emergence, and asserts without much explication that ontological emergence is what is needed for SDA to be possible. It is clear that Saunders sympathizes with Peacocke's model, but in my opinion he underestimates the extremity of Peacocke's metaphysical extrapolations from current scientific knowledge.

8 Assessment

Saunders concludes his book with an assessment of the overall status of theories of SDA, and concludes that contemporary theology is in crisis. The scientific theories do not lend support to the idea that God possibly acts in the universe, 'and we simply do not have anything other than bold assertions and a belief that SDA takes place' (215). Moreover, it is 'only through a detailed understanding of the claims made by science, the assumptions behind the laws of

nature, and the philosophy of determinism, that theology will continue to progress into the twenty-first century' (216). In my view, these assertions most pungently demonstrate Saunders's thoroughly *scientistic* view of theology and theological models of SDA, and therefore, the one-sidedness of the entire project.