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Chaos, Complexity, and God: Divine Action and Scientism

By Taede A. Smedes

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[1] Recently I had the pleasure to meet both Sir John Polkinghorne and Rev. Canon Dr. Arthur Peacocke at the conference *Einstein, God and time*, organized by the Ian Ramsey Centre and the Faculty of Theology at Oxford University. Peacocke did not give a presentation of his work this time (he was the guest of honor) but Polkinghorne talked about *Space, Time and Causality* from a critical realist point of view. Hence, it was very interesting for me to read Taede Smedes' revised doctoral thesis on the work of Polkinghorne and Peacocke just after the conference.

[2] I would like to start my review by introducing the distinction between Philosophical Theology and Philosophy of Religion. *Philosophical theologians*, as for instance Smedes, study the central doctrines of the Christian faith from a philosophical perspective using resources of philosophy. *Philosophers of religion*, as I am, study philosophical problems raised by, among others, the religions, theology (including philosophical theology), religious studies and sciences concerned with theology and religion, by way of philosophical methods (in my case, analytical). Hence, the character of my remarks will be philosophical rather than theological. I would also like to emphasize that my remarks should only be seen as a proof of my profound reading of Smedes' interesting book.

[3] Taede Smedes' project concerns the debate on science and religion, more specifically, modern physics and religion. Relevant questions are: what impact modern physics could possibly have on religion? Is there something in religion which modern physics can or could clarify? Is there some veil modern physics could lift from the religious? Another question is whether modern physics could serve as an explanatory model for some religious accounts, as a metaphor, or as an 'extension to our linguistic language'? According to Smedes, physical theories have been used in order to achieve such aims and he analyzes some of these approaches. He chose John Polkinghorne and Arthur Peacocke's explanations of how divine action can be understood.

[4] The start of Smedes' project is a presentation of Mikael Stenmark's typology of scientism. During the 19th century, the term *scientism* or *the science cult* is mentioned for the very first time: 'Science is a religion. Henceforth, it will be science alone that will form our religious doctrines (faith), science can give

us the answers to our everlasting questions, which, by their own nature, are in desperate need for a solution.'[1] The meaning of scientism has become broader since then and Stenmark has provided us with an accurate division of the term depending on what exactly is meant by it.

[5] Roughly, *epistemic scienticists*, Stenmark says, maintain that only scientific methods are trustworthy paths toward knowledge. *Rational scienticists* on the other hand, argue that, since science cannot say anything about an Ultimate Reality or soul, Ultimate Reality or soul do not exist. *Ontological scienticists*, assert that only those phenomena, processes and events exist which the natural sciences, by way of their methods, are able to depict. *Axiological scienticists* mean that all human education should be based on science because all other educational methods are insufficient and unsatisfactory. *Value-theoretical scientism* means that the natural sciences can exhaustively explain all ethical issues and should replace classical ethics. *Existential scientism* is related to value-theoretical scientism but concerns all religions and worldviews. Hence, the natural sciences should replace religion. The last type Stenmark designated *all-embracing scientism* which signifies that science can and probably will solve all or almost all our genuine problems. The natural sciences will be able to answer all our empirical, theoretical, practical, ethical and existential questions. This type is very close to the original definition. The reason why Smedes addresses the question of scientism is because he wants to investigate whether Polkinghorne and Peacocke might advocate scientism without being aware of it. Smedes also makes a very important remark, namely that 'scientism belongs to the tacit assumptions of our Western culture. It is this scientism which guides our thinking and acting, and which rules out certain questions and answers in advance as meaningless' (13).

[6] In chapters two to five, Smedes gives an informative and instructive presentation of Polkinghorne and Peacocke's work. The reader receives a systematic reconstruction of their theorizing and is provided with clues to what Smedes considers to be problematic in Polkinghorne and Peacocke's reasoning and which he aims to evaluate further. Both the similarities and differences between Polkinghorne and Peacocke's theories are pointed out.

[7] Smedes begins by analyzing the work of Polkinghorne. Polkinghorne, he says, defends critical realism and natural theology. According to him, mathematical patterns are isomorphic to physical patterns and as such explain the physical cosmos, which rational beauty reflects the Mind that sustains it. There is thus a transitive direction of motion from mathematical descriptions of nature to descriptions of the divine in nature. Hence, physical patterns reflect God, they explain God's creation. There is a bottom-up causation from the brain on the mind while, simultaneously, there is a top down causation from the mind to the brain (and from the brain to the rest of the body). Mind has an emergent character which implies that brain and mind are not reducible to one another. Furthermore, that mind is an emergent feature indicates ontological openness. It

1. Kjell Jonsson, *Harmoni eller konflikt: Förhållandet vetenskap-religion* (Carlssons 1999), 115, my translation from Swedish.

is here that Polkinghorne's critical realist interpretation of chaos theory comes in. Since, according to his critical realism, *epistemology models ontology*, epistemological uncertainties (chaos) imply ontological openness, making the world an open system. Furthermore, since there are ontological holes at the micro level of quantum mechanics as well as at the macro level of everyday experience, and since chaotic systems never can be overcome but only slightly diminished, there are genuine gaps in the texture of reality and these may allow God to act in the world. Top-down divine action meets bottom-up natural processes.

[8] How divine action can take place is illustrated by way of the concept of *strange attractor* understood as an envelope of possibilities within which the future motion of a chaotic system will be contained. Every slightest change in the cosmos affects everything else. God's action is thus understood as top-down causation on the level of the whole (i.e. micro and macro level), having a *trickle-down effect*, thereby changing a state of affairs at some level within the hierarchy of subsystems. Unlike Peacocke, Polkinghorne asserts that God is ontologically distinct from the world, but is both transcendent and immanently present. He imports the notion of *active information* inspired by Bohmian quantum mechanics. The point is that there is no change in the total amount of energy and hence there is no breach of the law of conservation of energy. Rather, there is a communication of changes, i.e., the wave communicates changes to the environment of the particle upon which the particle reacts. Conclusively, God acts in the world through pure information input without breaching natural laws. Theologically speaking, God acts in the world through the immanent working of pure spirit (à la Pannenberg), which is a non-energic input. Later, Polkinghorne also introduces the concept of *Kenosis* in the acting of God to explain the openness of the universe.

[9] After having analyzed Polkinghorne's view on divine action, Smedes sets out to investigate Peacocke's view. Peacocke's starting point is also natural theology and he also introduces the concept of Kenosis. But Peacocke is an *emergentist monist* maintaining that 'there is no evidence for any existing entities other than those emerging from the natural world' (113). The world or universe is understood as an interlocking system of complex systems. There is a hierarchy of systems but none is prior to the other. There is a whole-part influence through downward causation. Similar to Polkinghorne's idea, interaction between the whole and the parts and the different parts takes place by way of information flow. Different from Polkinghorne, however, Peacocke's world is a *closed world* in which God does not intervene. Both Polkinghorne and Peacocke oppose the principle of divine interventionism but where Polkinghorne defends divine action through the initial conditions of chaotic systems, Peacocke rejects divine action through chaotic systems precisely for its interventionist implications. To Peacocke, God is the ultimate ground and source of both law (necessity) and chance, two natural parameters which are needed for a self-organization, due to a closed system, to occur. Chance implies both joy and pain but since Peacocke defends *panentheism*, God enjoys and suffers with creation. Thus, God is no longer in full control, God's actions belong to God's general providence without being reduced to it, God is continuously creating but does never break the natural order because

'the total network of regular, natural events in this perspective, is viewed as in itself the creative and sustaining action of God' (131). However, due to Peacocke panentheistic view of God, the network of events is not identical to God. Peacocke also designates a hierarchy of complexity of levels with the least complex being the level of the physical world, followed by the level of living organisms, the behavior of living organisms and ending with the level of human culture which is the most complex level. Here we find, among other disciplines, theology and religion. Peacocke finally suggests one explanatory method to be used for all levels, namely *inference to the best explanation*, inspired by the natural sciences.

[10] Smedes' presentation of Polkinghorne and Peacocke's work is carefully and systematically accomplished. His evaluation of their work and his alternative explanation of divine action are, in my opinion, less stable. Consequently, my remarks regard the part in which he understands Polkinghorne and Peacocke as scienticists and I would like to ask three questions.

[11] First, I wonder whether Smedes' understanding of scientism is not perhaps too broad. I doubt whether it is justified to consider Polkinghorne and Peacocke as pursuing scientism. In my view they use, what I would call, *meta-scientific* interpretations of modern physics for their purposes. According to me they rather use, to describe it with Peter Gibbins' words, 'a philosophy of physics in the broadest sense, a view of what physics can and cannot be expected to do'.[2] What is important here are the words *cannot explain*. However, I do agree with Smedes that Peacocke position is sometimes confusing, as for example when he, on the one hand, maintains that no branch of science should be prioritized (and he includes theology) while on the other hand, he suggests that theology should adapt the scientific method of inference to the best explanation (IBE). However, that does not make Peacocke a (rational or ontological) scienticist. What he, in my opinion, means is not that the method of IBE is the *only* rational method to explain something. Rather he suggests that science and theology should be made compatible. It can be discussed, of course, whether the method that makes the disciplines more compatible should be that of IBE. That Peacocke cannot be taken as an ontological scienticist, as Smedes sees him, becomes clear when we consider that he talks about a reality with a capital R which science *cannot* access. An ontological scienticist asserts that the only reality that is real is the one science has access to. We should also keep in mind that Peacocke defends panentheism. Hence, if there is a divine reality which science has access to it is the reality of the immanent God (i.e. the results of the acts observable in the world), but not the reality of the transcendent God. Similar arguments can be provided concerning Smedes' evaluation of Polkinghorne's theory of divine action.

[12] Second, I also wonder whether Smedes perhaps sometimes confuses scientism with science proper. One example: The argument that, for a transcendent God to act in the world, the natural order of the world has to be broken, is a classical Newtonian argument but not necessarily a scienticist one (181). Even

2. Peter Gibbins, *Particles and Paradoxes: The Limits of Quantum Logic* (Cambridge University Press 1987), p. 46.

if one explains something in a classical mechanical way, one need not deny that there might be other or complementary explanations of it. What I mean is that scientism always embraces science but science does not always imply scientism.

[13] My third question concerns Smedes' own contribution to the understanding of divine action. Let us assume that we accept his broad concept of scientism in a sense that it includes what I call metascientific reasoning. Would not Smedes then have to rank himself under the umbrella of scientism? Smedes puts forward alternative proposals of how God could possibly act in the world (chap. 6). In doing so, he introduces, in my view, fruitful notions such as, among others, de Molina's *scientia media* and the suggestion that God's knowledge should not be understood as discursive but as *infallibly a priori intuitive knowledge*. According to Smedes, theology should be taken seriously and should start from the notion of God's worthiness of worship. Theology should do justice to the logic of God-language. Finally, one should pay attention to the distinction between logical and philosophical possibilities. His proposal is worth reading and I agree that we should not forget the strength of theological explanations when it comes to religious issues. However, at a given point, Smedes seems to be in need for other explanations than theological ones. He writes: 'Still the problem remains how we can make God's immanence tangible without destroying the distinction between God's reality and the world. A model that in my opinion is of help in this case, [. . .] is one that uses the mathematical concept of *dimensionality*, and argues that our three-dimensional reality (or four-dimensional, including time) is part of a larger, infinite-dimensional space: God "could well be omnipresent in a higher-dimensional system which also includes the three-dimensional space in which empirical objects are located. In which higher-dimensional system the divine being would be simultaneously 'co-present' with all of the objects in all possible places in three-dimensional space"' (220). Thus, my question is whether Smedes is not using a scientific method, namely mathematics, to illustrate how God's action in the world could be possibly understood in a similar way as Polkinghorne and Peacocke use methods used by modern physics—chaos theory being a mathematical theory? However, introduced to Smedes' ideas, I would not call him a scienticist, but neither, as I already mentioned, would I call Polkinghorne nor Peacocke.

[14] Concluding, Smedes presents the ideas of Stenmark, Polkinghorne and Peacocke in a careful, systematic and convenient manner. The book is written in a way that makes it hard to put aside and not to be affected by it. As I mentioned earlier, my remarks are of a philosophical character and not of a theological one. Hence, even though I am not prepared to agree with Smedes that Polkinghorne and Peacocke's explanations of divine action are scienticist and though I have philosophical objections to the use of the concept of scientism, 'Chaos, Complexity and God', has many interesting tidbits and is certainly a book worth reading.