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## **Arthur Peacocke's *New Biology*: New Wine in Old Bottles**

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*Dr. Arthur Peacocke's book **God and the New Biology** is reviewed and its examination of **reductionism** as well as other features welcomed. His solution of the question of God's relationship to the world in terms of **panentheism** and a **sacramental** model are criticized.*

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Over the past 15 years Arthur Peacocke has become an important contributor to discussions of Christianity and science in England, Europe and America. For many years Peacocke carried on research in physical biochemistry. Late in his career he pursued a theological degree and was ordained as an Anglican priest. *God and the New Biology* represents Peacocke's mature thought as he seeks to develop a coherent theistic picture of God, Man and Nature in the context of recent biological advances. He writes not only for the Christian but also to those who have only a marginal interest in Christian faith.

Peacocke argues that biology can benefit from the insights of the theologian and that modern science in turn has relevance for the major themes of theology. He views the two disciplines as 'mutually illuminating' approaches.

The first two chapters of his work deal with the question of reductionism. Borrowing Donald MacKay's 'nothing buttery' metaphor Peacocke argues against any perspective which would describe the biological world exclusively by the laws of physics and chemistry. Instead he views nature as being comprised of a hierarchy of systems of increasing complexity as one proceeds from atoms to cells to ecosystems. In this connection he emphasizes the idea of a 'hierarchy of theories' in which descriptive models appropriate for one level of complexity may be inappropriate for levels higher or lower in the 'pecking order'.

As new levels of organization are found in nature, new conceptual approaches will be required.

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1 Arthur Peacocke, *God and the New Biology*, Dent & Son, London (1986).

'Thermodynamics and kinetic principles (may need to be applied to) situations never envisaged in classical physics and chemistry . . . new concepts have to be devised, e.g. that of dissipative structures and "order through fluctuations" of the Brussels school and of "selection" and "quality factor", as applied to an assembly of macromolecules by Eigen' (p. 26).

Peacocke's point is not that the classical scientific principles are to be ignored but that they must be integrated into the full physical picture of the level of complexity under consideration. He argues that the reality of each level stands on its own facts and each may 'be regarded as a cut through the totality of reality' (p. 28). In this picture Peacocke sees man as the highest level of natural expression, with theology as the highest integrating force in the God-man-nature relationship.

Chapter 3 outlines key scientific and philosophical issues which arise from modern views of evolution. While thoroughly affirming the concept of evolution he recognizes the sharp differences of opinion which continue to arise over 'the tempo, mode and constraints upon evolution' (p. 44). Interestingly, he makes an attempt to reach out to the 'creation science' school of thought and in other places touches on theological differences with evangelicals. In this chapter he provides a useful discussion of the major questions in current evolutionary thought. Once again, he argues the need to recognize that the validity and autonomy of concepts and language at higher levels of complexity are not just 'grades of reality of which atoms are most real, biological entities less so and persons the least' (p. 62).

He draws on the work of Ilya Prigogine and co-workers who used ideas from recent work in irreversible thermodynamics to explain how complex systems could arise from much less ordered ones. They argue for the existence of 'dissipative structures' which maintain themselves in an ordered-steady state far from equilibrium. These states are capable of radical changes resulting in even more complex structures which are 'stable' and able to maintain themselves by incorporating matter and energy from the outside (open structures). For Peacocke, this pattern of increasing complexity and order-through-fluctuations led inevitably to the formation of living systems. In this view 'the emergence of life was inevitable but the form it was to take remained entirely open and unpredictable' (p. 63).

Peacocke draws on the work of Manfred Eigen to deal with the

question of information content and the origin of self-replication, and argues that the universe has *potentialities* which become real in time by the joint operation of chance and law.

Chapter 5 outlines major theological responses to evolution over the past century in Germany, France, England and America. His analysis is fresh and instructive. Not unexpectedly, Peacocke comes down on the side of an 'older' liberal Anglican tradition expressed in the thought of F. R. Tennant, William Temple, L. S. Thornton and Charles Raven.<sup>2</sup> Peacocke argues that this English theology with its stress on the incarnation and a sacramental perspective on the world was less prone to draw on the ideas of Teilhard de Chardin, Whitehead and others because it already had a tradition for integrating science and religion extending back to the last century. Some observers have found a closer relation to Teilhard than Peacocke would acknowledge.

Chapter 6 begins the discussion of Peacocke's application of the 'Christian experiment' to the broader issues of a world 'informed and dominated by the evolutionary perspective' (p. 87). His presuppositions include adherence to a 'critical, qualified realism' for both scientific and theological insights and a standard 'higher critical' account of Scripture. Fundamental to his position is the view that the cosmos is in a state of evolution with the formation of life and mankind as significant stages in the transition and that all changes require no factors external to the world itself. Peacocke argues that the evolutionary account of mankind involving only a 'gradual awakening to self-consciousness' renders invalid the traditional theological view of the Fall and an original set of parents found in the Genesis 'myth' (p. 92). He offers an integrated perspective on man over against the Hellenistic dualistic distinctions between flesh and spirit, body and soul etc. In this picture matter is much more than simply mass-energy. His thought here parallels ideas offered in less developed form by Joseph Priestley, another chemist-theologian who lived 200 years ago. As one studies the development of the cosmos, we see the 'manifestation of the potentialities of matter which have been implicit in it from the beginning in its simplest forms and have only gradually unfolded' (p. 94). In the beginning God created potential!

Peacocke sees God's relation with the world as timeless—'a

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<sup>2</sup> Arthur Peacocke, 'Evolution in the English (Anglican) Theological Tradition' in *Evolution and Creation*, Svend Anderson and Arthur Peacocke (eds), Aarhus University Press, Aarhus, Denmark, pp. 113–120 (1987).

relation which involves both differentiation and interaction' (p. 95). As the 'Ground of Being' he is wholly other than his creation. Yet, at the same time Peacocke seeks to emphasize God's immanence more than most. Since matter has a 'continuous, inbuilt creativity', creation is going on all the time. God's relationship to the world is perennially and perpetually that of Creator and we can view his actions in the processes of nature by scientific study. For Peacocke nature is a mode of God in action, not just a stage for his action. 'In the actual processes of the world, and supremely in human self-consciousness, God is involving himself and expressing himself as Creator' (p. 97.) Peacocke focuses on God's *creatio continua* over against *creatio ex nihilo*. He suggests that God's shaping of the combination of 'chance and law' to produce very more complex forms of matter is analogous to that of a musician who elaborates in diverse ways on a simple tune, such as J. S. Bach creating a fugue.

'The listener to such a fugue experiences, with the luxuriant and profuse growth that emerges from the original simple structure, whole new worlds of emotional experience that are the result of the interplay between an expectation based on past experience ("law") and an openness to the new ("chance" in the sense that the listener cannot predict or control it)' (p. 97).

Peacocke argues that the interplay of law and chance associated with everyday life is part of the order of Creation. Chance does not get out of hand because 'the Being of God includes and penetrates the whole universe, so that every part of it exists in Him' (p. 99). Note, however, that his Being is more than, and is not exhausted by the universe. This 'panentheistic' approach, a sort of 'halfway house' between the standard positions of deism and pantheism, is, he claims, drawn from the school of theology mentioned earlier. Panentheism also plays a key role in Peacocke's doctrine of the incarnation.

Our understanding of God receives ultimate expression in 'Jesus the Christ' who, as man, is part of nature in 'its actuality, materiality and evolution' As the supreme 'window' on God, Jesus Christ affirms the importance of 'the word being made flesh'.

'On the one hand that which God has brought into existence, the stuff of the cosmos, is seen through the sciences to be the matrix and necessary condition for the appearance of purpose, mind, self-consciousness and values—all that characterises the human person; and, on the other hand, the Christian revelation affirms that this character of the stuff of the cosmos is so fundamental that God expressed his being in, and acted through, the perfect

culmination of this process in the person of Jesus of Nazareth' (p. 126).

With this 'elevated' view of matter offered through the new biology and Christian theology, how can we better develop a Christian perspective on the meaning and purpose of matter? Here Peacocke suggests that the sacraments (particularly the eucharist) may offer such an integrative insight. Peacocke develops his case along three lines. First, the sacraments attribute significance to matter in a Christian context. Second, the eucharist while focusing particularly on bread and wine speaks in general terms as well. Third, sacrament has both symbolic and instrumental functions, as does the created world as seen by the Christian. 'Hence there is in each particular sacrament, a universal reference to this double character of created physical reality, and correspondingly, meaning can be attached to speaking of the created world as a sacrament, or at least as sacramental' (p. 117). For Peacocke, 'this approach gives a new relevance to Christian sacramental worship which is now seen not to be representing some magical, cabalistic and esoteric doctrine, but expressing in a communal context, the basic nature of the cosmic process which has brought man to this point and in which he is now invited by his creator to participate consciously and willingly' (p. 125).

Peacocke has developed an all-embracing, Trinitarian view which emphasizes the divine immanence in the processes of nature, argues the importance of matter, invokes a continuing and open understanding of God as creator, explores the implications of the incarnation for his 'Christian materialism' and draws on the sacraments to provide meaning. He wishes to keep his distance from the thinking of Whitehead or Teilhard de Chardin. He recognizes the tentative nature of his ideas and the scientific, theological and philosophical minefields that may arise in his thought.

The book offers both positive and negative features. His stress on the importance of the 'physical' at all levels of creation, most profoundly expressed in the incarnation, offers a welcome contrast to theological traditions past and present which see the world as evil, or at best a stage on which salvation history unfolds. His case for a 'holistic' approach to nature over traditional 'reductionisms' and his appeal to a hierarchy of systems in nature are particularly helpful. His all-encompassing evolutionary approach is buttressed by the best discussion of classical and modern thermodynamics that I have seen in a science-Christianity context. His discussion of the

respective roles of law and chance in the emergence of life are instructive while at the same time speculative. He combines a willingness to break new ground with a recognition of the problems associated with his synthesis.

While one may wish to dispute specific points of science and philosophy, my major problem with *God and the New Biology* is the theology which undergirds Peacocke's world view. Evangelicals begin with Scripture, hold that Adam and Eve were real people and base their faith on the fact that Jesus Christ was not only 'God made flesh' but saviour; themes with which Peacocke may not be in accord. His panentheistic approach to an integration of God's immanence and transcendence seems forced and without scriptural warrant. I trust that a presbyterian reviewer may be forgiven for scepticism about a 'sacramental view' of matter.

Peacocke aptly sketches some of the questions which might be explored. *God and the New Biology* may not provide the 'Christian' perspective that many would wish, but it should not be ignored.

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