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God, Design and Teleology

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God and Design: The Teleological Argument and Modern Science. Edited by Neil A Manson, London and New York: Routledge, 2003. xvi + 376 pages. Price: $ 15.99 .

The argument from design begins with the observation that the universe shows exquisite adaptation, order and directionality giving the appearance of having been designed. The contention is that there is so much beauty, order, and precision in the natural world that it must have been designed by an intelligent designer, who must have brought the universe into being with some purpose. The theory of design involves reasoning from seemingly purposeful features of organisms in the universe and hence gets the name teleological from the Greek word *telos* meaning end or goal.

Before Darwin, the best explanation for the ordered and adaptive features of living organisms was that of intelligent design, an idea made famous by the British theologian William Paley. In his book *Natural Theology* (1802), Paley introduced the famous analogy of the watch and the watch maker and pointed out to the marvelous features of the human eye and the dexterous thumb as evidence of a benign creator. He argued that the even more intricate order in natural phenomenon especially the adaptive design in living things points to intelligent design. It should be noted that before Paley's time, Hume had already criticized design theory, because of the false analogy between human artifacts and biological organisms which can reproduce themselves.

The design theory, however, lost much of its appeal with the publication of Darwin's magnum opus *On The Origin of Species by Means of Natural Selection* in 1859. Darwin had meticulously accounted for the apparent design in nature through the mechanism of random mutation and natural selection. Richard Dawkins, in his book *The Blind Watchmaker,* observes rather provocatively that it was only after Darwin, it was possible to be an intellectually fulfilled atheist. Therefore one can confidently assert that it was not the arguments of the philosophers such as Hume that destroyed the popularity of the design thesis, but the emergence of an increasingly materialistic explanation of apparent design, as explained by Darwin's theory of evolution.

In the latter half of the twentieth century, however, the design argument came roaring back dramatically into prominence. The editor of the book, Neil Manson rightly points out that the reemergence of the design theory is mainly due to the spectacular advances in the field of cosmology and of microbiology. A profound intellectual shift is beginning to take place as physics and microbiology reveal some convincingly fresh evidence that appears to support theistic belief.

The book discusses in detail two design arguments, one from each field; the anthropic principle from the area of cosmology and the complexity of molecular machines from microbiology. While the former is called the global design argument, the latter goes by the term local design argument.

What is remarkable about the book is the probabilistic approach to the logic of the design argument. In Manson's view, it is the use of probability that makes the current design theory unique. Design arguments are often based on and challenged by assertions about the nature of probability. The most useful of the probability theorems for the argument from design is Bayes's theorem. Bayes's rule explains how we can revise the probability of an occurrence in the light of new evidence. A weak point is that Bayes's theorem does not deal in proofs and is too subjective. However, it examines the impact of new information on the revision of probability estimations, providing a convenient starting point for models of uncertainty and partial knowledge.

Neil Manson, Visiting Assistant Professor of Philosophy at Virginia Commonwealth University in Richmond, has given a valid rationale for his interest in the design argument in his 'Introduction'. The twenty-one authors, who have contributed to this book, have used their expertise in the various fields of philosophy, mathematics and biology to give arguments and counter arguments for the design theory and its related fields. William Dembski is a leading exponent of the theory of intelligent design and there are some eminent philosophers such as John Leslie and Elliot Sober who have examined the theory from a philosophical point of view and biologists Michael Behe and Kenneth Miller who have offered sound scientific arguments in their favour. Feminists certainly will not forgive Manson for including the name of just one woman contributor who is allied with her husband in a shared article which is just a reprint.

A striking feature of the Big Bang cosmology is that the universe ought to be finely tuned at every stage of its evolution in order that humans can arrive on earth. In the 1960's physicists made a significant discovery that the existence of life in the universe depends upon a highly improbable balance of physical factors. The constants of physics, the initial conditions of the universe and many other of its contingent features appear delicately balanced to allow for the possibility of life. It is believed that even a small change in the physical constants would have resulted in an uninhabitable universe. Physicists refer to these factors as anthropic coincidences and the fortunate convergence of these coincidences as the fine tuning of the universe.

For John Leslie, it is not the fact that there are anthropic balances, but the scale of them, and the "consequent implausibility of thinking that every single claim is erroneous", which raises the 'why' question.. Should we be surprised to find ourselves living in a universe suited for sentient life? May be not. Leslie believes that we should be surprised to learn that conditions necessary for life are so vastly improbable. He compares our situation to that of a blindfolded person who has discovered against all odds that he has survived a firing squad of several expert marksmen.

Related to the anthropic principle is the question whether ours is the only universe. Martin Rees, winner of the Gold Medal of the

Royal Astronomical Society, argues passionately for the existence of a multiverse. Given a multiplicity of universes, it will not be surprising that at least one universe in this vast ensemble is fit for the production of life as we know it. Thus the multiverse hypothesis now stands as the most popular naturalistic explanation for anthropic fine tuning. Those committed to materialistic philosophy seem to favour the muliverse theory although there is no solid evidence for the existence of universes apart from our own.

As for the local design argument, the example chosen is from microbiology, the one that Michael Behe has so eloquently described in his book *Darwin's Black Box*: *The Biochemical Challenge to Evolution*. Behe is adamant that the origin of complex molecular machines in living organisms cannot be explained by Darwin's evolutionary theory. Behe accepts that natural selection produces most of the complex structural adaptations of plants and animals, and yet, he claims that the biochemical systems cannot evolve in a Darwinian fashion and are better explained as the result of deliberate intelligent design.

For this purpose, Behe introduces the term 'irreducible complexity' and shows that at the level of biochemistry, we have irreducibly complex processes and structures such as the cilia and flagella that produce cell movement and the cascade of blood clotting proteins. The term 'irreducibly complex' means that if the system misses just one of its many parts, then it will not be able to function. Behe argues that natural selection can only work on functioning systems, and therefore it cannot work with any part of an irreducibly complex system

As an example of an irreducible complex system, Behe chooses the common mousetrap consisting of five parts. Even if one part is missing, Behe argues, the mouse trap will not work.

Therefore, in Behe's view, the mousetrap is irreducibly complex. Since it is known that the mousetrap is designed, he argues that any irreducibly complex organism should be designed. A problem of interest to researchers is whether there is evidence at all for irreducibly complex system in living organisms.

Kenneth Miller, a cell biologist, points out some glaring scientific flaws in Behe's argument. He rightly observes that biological functionality is defined only in the context of the environment. The parts of irreducible complex system, in Miller's view, do have selectable functions. For example, "the individual parts of the cilium including tubulin are fully functional elsewhere in the cell." Further, he points out that nature presents many examples of fully functional cilia that are missing key parts. Miller points out that the use of mousetrap as an analogy is unfortunate since a mousetrap can surely be constructed with lesser parts. Miller's contention is that Behe's argument from design is a sophisticated version of Paley and his watch analogy.

Behe is also adamant that intelligent design had been at work in the formation of these irreducibly complex systems. This raises questions regarding when and how Behe's intelligent designer, whose identity Behe leaves open, started to work on the cell. Michael. Ruse argues that it would be reasonable to allow the designer to be "at work all of the time, producing mechanisms as and when needed."

How does the local design argument compare with the global argument? For one thing, Darwin's evolutionary theory seeks to explain the adaptive features of organisms and it has nothing to say about the origin of the universe. For this reason, the global design argument is often held in more respect than the local design argument since it is immune from Darwinian attack. On the other hand, the local design argument, trades on scientifically established data and is considered more promising than the cosmic. Robert O' Connor a philosopher, cautions that any design argument can be strictly scientific.

Whether it is the global or the local argument, theologians warn us that we should not fall into the trap of what Charles Coulson called 'God of the Gaps', the God who provides explanations precisely at the point where science fails. As Manson points out , "science has not run its course". It is possible that someday, science will be able to unravel some of the mysteries and one can no more take refuge in the 'God of the gaps'.

One of the salient features of the book is that twenty-one eminent contributors and the editor have come together to express intellectually

their commitment and enthusiasm for a theme of current interest, namely God and Design. But then, five articles are reprints. The result is that there is not much interchange of concepts among the contributors. Some interaction and responses to one another's arguments would have sharply brought out the main thrust of the book and the latent nuances of the design argument.

The basic issue that arises from the book, relates to the relation between God and Design. Is design the most convincing way to establish the existence of God? A related question is whether Darwinism or the hypothetical multiverse has destroyed the credibility of God. One way of keeping God around would be to resort to the God of the gaps. But many would go along with Michael Ruse or Peter van Inwagen to propose that God can use evolution as His means for producing intelligent life. Thus Darwin, who was often considered to be an enemy of religious faith, is now seen to be actually a friend in disguise, inviting us to reflect on our understanding of God's ongoing relationship to the living world. Is it possible to conclude that, design or no design, it is God the Creator who gives meaning both to our lives and to the blind mechanism of materialistic science? The answer lies in the reader's response.

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