

The Grand Design: New Answers to the Ultimate Questions of Life

Stephen Hawking and Leonard Mlodinow

London, Bantam Press, 2010. 198 pp. ISBN: 9780553805376 (hbk.)

Stephen Hawking held the Lucasian Chair at Cambridge University for thirty years. Leonard Mlodinow is a physicist at Caltech University. They are eminent in their fields.

The style is light-hearted and occasionally wry, with some amusing cartoons. The production is beautiful and the illustrations are helpful. The writing is clear, but the complexity of the subject matter requires attentive reading and re-reading. The authors tackle subjects such as quantum mechanics, the “big bang,” probability theory, the limitations of general relativity, and the surprising fact that we can determine the past by our observations in the present. They draw notably on the work of Richard Feynman who proposes that “a system has not just one history but every possible history.” (6) They also speak of M-theory which “predicts that a great many universes were created out of nothing.” (8) They speak of “supersymmetry” and space-time, Game of Life theory, etc. This is all very interesting, and the authors are at ease in their element.

They also admit that there is ignorance on some issues, for example, “we don’t have a complete quantum theory of gravity ... physicists are not sure exactly how inflation happened.” (129) However, at the very start, Hawking and Mlodinow roundly proclaim that “philosophy is dead” and they dismiss theology with equal ease. They present earlier forms of thought as the product of simple ignorance, with human beings inventing deities to explain the events of nature which only science now properly understands.

This leads to the major weakness in the book, for when they move out of cosmology and into philosophy their world-view starts to fracture. This weakness is seen at the very start, for example in the failure to understand the difference between “how” and “why.” In their opinion, it is for scientists to explain not just the how of the universe but also the why: “Why is there something rather than nothing? Why do we exist? Why this particular set of laws and not some other (p.10).” However, it becomes rapidly clear that they do not understand the word “why” in the sense of “for what purpose,” but in the sense of “from what cause.” Their “why” is really another form of “how.”

The weakness is seen again in their discussion of “nothing.” They state that “Bodies such as stars or black holes cannot just appear out of nothing. But a whole universe can” (180) for, in their opinion, the origin of the universe is a quantum event, a spontaneous happening. (135) “In this view the universe appeared spontaneously, starting off in every possible way,” (136) as a “multiverse.” So be it, but at least there is quantum physics, and

the “laws” of quantum physics must exist if there is to be the spontaneous arising of the universe. In this way they show they do not actually have an idea of “nothing” for, strictly speaking, if there really is “nothing” there is nothing to “out of.” For them “nothing” is really “the unmanifest,” “the unformed.” They are more akin to those Greek philosophers who held that the universe is made out of a “chaos” (χάος) from which the Mind (νοῦς) forms the “cosmos” (κόσμος).

Scientific determinism is accepted without question, despite the many discussions on this issue. Their book is “rooted in the concept of scientific determinism ... there are no miracles, or exceptions to the laws of nature.” (34) “There must be a complete set of laws that, given the state of the universe at a specific time, would specify how the universe would develop from that time forwards. These laws should hold everywhere and at all times; otherwise they wouldn’t be laws.” (171) There is no attempt to justify this position; it is taken as axiomatic.

Consistently with this determinism they state that “free will is just an illusion.” (32) However, since it is not possible to determine the physical laws underlying the complexity of human action, they allow “the effective theory that people have free will.” (33)

Regarding the “soul,” a materialist point of view is likewise taken for granted. Humans are “mere collections of fundamental particles of nature.” (181) There is no questioning of their point of view, no attempt at justifying it. Their idea of God is extremely limited. It goes no further than the opening sentence of the Bible, “In the beginning, God created the heavens and the earth,” and even then, they seem to understand God as one being among other beings, but just “older” and more powerful. In their view, God belongs to a “class,” the class of beings, as do the gods of Greece and Rome, although classical theology has always rejected the idea that God can be classified or defined.

This weakness extends to the idea of God as creator. They fail to understand that the notion of God as creator is not linked to time. The relationship of creation to time was much discussed in the Middle Ages. Aquinas held that, according to reason, the universe might be eternal, without a beginning. “It does not necessarily follow that if God is the active cause of the world, he should be prior to the world in time (*non sequitur exnecessitate, si Deus est causa activa mundi, quod sit prior mundo duratione* [*Summa Theologica* I q.46 ad 1.]) This did not mean the world was not created, but that it depended for its existence on One who is not bound by time.

The weakness in their attitude to philosophy is shown even in the title of the book, “The Grand Design.” The word “design” does not mean purpose, but “structure,” like the design of a building. In their view of the world, there is design but not purpose. In other words, they are just describing a scientific view of the universe. So be it, but the title is ambiguous.

A similar objection can be made to the subtitle which reads: “New answers to the ultimate questions of life,” for there is no attempt to answer the questions that have so long occupied the mind of philosophers and theologians: what is the basis of knowledge; what is good and what is evil; is there life after death; how can happiness be found; what is the meaning of life? These ultimate questions receive no treatment; there is a reductionist

tendency in the book. All is cosmology. What are new are only new ideas about the origins of this form of the universe.

Hawking may indeed be “one of the most brilliant theoretical physicists since Einstein” (199), but in this book he has ventured outside his field without adequately studying the opinions of those who might hold a different view, with the inevitable consequences.

Nevertheless, the authors’ wish is understandable. The human being is one, and the disparate fields of human investigation must not fragment us. We need to bring together in our own selves the many disciplines that are studied separately. For that reason, the “grand theory of everything” will not be just scientific since the human being is not just scientific. We are still faced with the question: “What is truth,” or rather “who is Truth?”

Reviewer: *John Dupuche, Faculty of Theology and Philosophy, Australian Catholic University.*

Email: jrdupuche@pacific.net.au
