

emphasis on intelligent design. He is the editor of the Finnish science and theology magazine *Areiopagi*.

Rope Kojonen repeatedly emphasizes that he does not wish to take sides in the intelligent design debate. He only wishes dispassionately to analyze the debate and make a suggestion. "I argue that the sidelining of theology and philosophy from the debate is actually an example of the influence of scientism, defined as the belief that science is the only way to gain reliable knowledge about the world" (p. 3). That, in a nutshell, is the summary of the entire book.

Rope Kojonen begins by offering his view of the origin and definition of the contemporary ID movement. Based on a quote from the Center for Science and Culture department of the Discovery Institute, he states that

ID is three things:

1. A scientific research programme attempting to find evidence of design in nature
2. A community (or movement) of scholars who participate in this research programme
3. A theory which holds that there is indeed evidence for intelligent design in nature. (p. 12)

He points to Phillip Johnson's publication of *Darwin on Trial* as the origin of the ID movement, though not of teleological arguments which have a long history. Thereby he seems to ignore the books and articles in *PSCF* published in the 80s. I view the book *The Mystery of Life's Origin: Reassessing Current Theories* by Charles B. Thaxton, Walter L. Bradley, and Roger L. Olsen as a more seminal trigger of the modern design movement with Johnson's work serving as the expansion into public awareness.

Rope Kojonen makes it clear from the outset that he intends to be fair to all sides. He acknowledges the widespread belief in an intelligent creator even by critics of ID when he says, "The basic idea that nature provides some kind of evidence of an intelligent creator has ancient roots and is even shared by many theistic critics of ID." Then he deftly pinpoints the source of the criticism by saying, "ID's defense of the idea is controversial because of its emphasis on the scientific nature of the design argument, and also because of its critique of evolutionary biology" (p. 30). He proceeds to map out an exhaustive articulation of the arguments set forth by advocates and critics of ID while avoiding his own judgment or preference.

Throughout this discussion, Rope Kojonen meticulously seeks to be even handed, supplying a balanced view. Taken to the extreme, he edges perilously close to creating a false equivalence between arguments

for and against ID. In reality, virtually the entire scientific community that has assessed the claims of ID has found them wanting while the advocates are a small minority. That overwhelming perspective cannot be gleaned from this book. Nevertheless, the book is valuable for providing a dispassionate description of the arguments for and against ID.

Rope Kojonen's main concern is the emphasis the ID advocates place on scientific evidence for ID. He feels that by downplaying the theological and philosophical aspects ID proponents succumb to the temptation of scientism, despite their expressed opposition to scientism. He feels that ID advocacy would be better served by an open discussion of the pertinent theological and philosophical issues. On the other hand, in my opinion, those perspectives generally do not fare any better than the scientific arguments. Combining several weak arguments does not provide a strong argument. Nevertheless, it is a useful recommendation to the ID community that theologians and philosophers are brought into the discussion more closely, providing a clear linkage to those fields.

The book covers virtually the entire spectrum of topics in the ID controversy, though with disappointingly minimal discussion of the information argument. Better copy editing to correct the numerous missing and extra words would have been helpful but the message comes through clearly. It is a worthwhile source for anyone wishing to delve deeper into the nuances of the ID debate.

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STANDING ON THE SHOULDERS OF GIANTS: Genesis and Human Origins by Luke J. Janssen. Eugene, OR: Wipf and Stock, 2016. 334 pages. Paperback; \$32.00. ISBN: 9781498291408.

Luke Janssen is a professor in the Division of Respiriology, Department of Medicine at McMaster University in Hamilton, Ontario. He has a distinguished career as a cell biologist with over 130 peer-reviewed articles. He is also a former young-earth creationist who has wrestled hard with the reality of his faith in light of what he now sees as scientific reality. This clearly written book (his second on the topic) is the result of his thorough examination of both the scientific and theological issues at stake in the human origins discussion.

Given the breadth of the subject matter that extends beyond the author's expertise in the medical sciences, the book would have benefitted from more input from colleagues with expertise in theology and

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paleoanthropology. Unfortunately, there are a number of distracting errors that reduce the potential impact of the book.

From the science perspective the book is uneven. For example, fairly early in the book, the author makes this statement:

Biologists resist viciously any idea that a designer is behind the complex coding found within our cells. We have no examples of genetic mutations giving rise to a significant increase in information or a more complex gene sequence. The only examples of large evolutionary steps via gene mutations that we've been able to document comprise the reduction of information: the inactivation of a gene or the functional neutralization of its gene product. (p. 70)

This is a decidedly pro-intelligent design statement exactly like the argument in books by Stephen Meyer, for example. And yet he does not elaborate on it further at any other point of the book. Indeed, he goes on to write a statement that certainly appears to be an example of the very thing of which he says "we have no examples":

On a blog which I maintain, I have included a photograph which powerfully depicts how a very small genetic mutation can convey an amazing advantage to an organism and thereby catapult the organisms which inherit the change into a whole new level of competitive superiority. (p. 97)

Intriguingly, the two statements seem to contradict each other. He goes on to show how and why this mutation (it is associated with color vision) is not only highly favorable, but is embedded within a newly duplicated gene. So, the author provides not only a perfect example of a point mutation giving rise to increased information, but also of a duplication event of the sort that is a poignant example of the kind of information-generating machinery that is believed to play no small role in driving the evolutionary process. It is as though he wrote the two sections of his book at two different stages of his own evolutionary journey out of the ID perspective, but he never went back to the manuscript to bring them into concordance with each other. Regardless of whether that is the case, it would have been helpful if the book had attempted to address the apparent dissonance between what appears to be two opposing statements.

The book is also misleadingly vague on some taxonomic issues. For example, it states that "scientists don't believe that humans evolved from apes or monkeys, instead they propose that humans and apes both evolved from a common ancestor" (p. 74). Although what the author means to say, I think, is that humans did not evolve from the species of apes

and monkeys we see today, but he doesn't say that. Scientists, in contrast to what the book states, *do* believe that humans evolved from apes (and prior to that) monkeys. It's just that the ancestral species of apes and monkeys from which *Homo sapiens* evolved are not the same as those present today. Similarly, there are several places where the author seems to confuse the genus name with that of a species name. Moreover he gives species names a subspecies moniker (pp. 112, 113, 125, 147). The most disconcerting of these errors is his reference to *Australopithecus* as *Homo australopithecus* (p. 178).

There are other factual misstatements that detract from the value of the book. For example, members of the *Homo erectus* species did not make their initial migration out of Africa less than 800,000 years ago as stated on page 115. Actually, general consensus places the event (or events, perhaps) more than one million years earlier. Similarly, the "pit of bones" in Sima de los Huesos, Spain, does not contain "many fully articulated skeletons, of hundreds of hominins" (p. 119). Scholars believe that the fossils are derived from 28 individuals and that the find includes seventeen complete crania, but no completely articulated skeletons have been documented that I've been able to find (see *Science* 344 [2014]: 1358). Another example of a disconcerting misstatement refers to our common ancestors in Africa. The book states that we "don't know if there were thousands or millions" of these ancestors (p. 128). In actual fact though, genetics has enabled a reasonable estimate: the average population size is believed to be thousands to tens of thousands but not millions (see, for example, *Ancestors in Our Genome* by Eugene E. Harris [New York: Oxford University Press, 2015], 82). One final example of scientific imprecision concerns some of the statements made about Denisovans. The author overstates what we know about this recently discovered group, closely related to Neanderthals. On p. 188, the author states that "Neanderthals and Denisovans also had an appreciation for the aesthetic." Although there is good reason now to think that this is true for Neanderthals, it is not scientifically accurate to extrapolate from them to Denisovans. So far as I am aware, no architectural artifacts have been discovered that are clearly Denisovan-derived. All we have besides their DNA sequence is a finger bone and a couple of teeth fossils—nothing that we can say is clearly a reflection of their culture.

So although the book is thoroughly researched and is a treasure trove of information, the presence of a number of scientific misstatements leaves the general reader in a somewhat tenuous position regarding the factuality of any given piece of information. The errors could easily have been caught in the review

process and corrected, so it's unfortunate that they weren't.

The purpose of the book is largely to present the scientific facts regarding human origins so that we can determine their impact on core theological precepts of the Christian faith. Here, too, I think the author is guilty of overreach. He concludes his discussion of the science by stating, "for those who choose to believe that mankind has indeed evolved, there are going to be tremendous changes needing to be made in their theology" (p. 187). As John Walton (*Lost World of Adam and Eve*), N. T. Wright (*Surprised by Scripture*), Dennis Venema and Scot McKnight (*Adam and the Genome*), and Joshua Swamidass (*PSCF* 70, no. 1 [2018]: 19) have all shown, the changes to theology mandated by the findings of evolutionary biology and paleoanthropology need not shake up theology in any major ways. Science is silent on the issue of a historical Adam and Eve as discussed thoroughly by each of these scholars. It is clear that our species has been created through the evolutionary process, but there are various ways of thinking about Adam and Eve that do not conflict with these data. I am concerned that the author has allowed factors other than science to influence his conclusions. For example, consider also this statement:

... some will choose to believe that we humans are indeed the pinnacle species in God's creation, and in support of that they will refer to biblical passages like Psalm 8: "What is mankind that you are mindful of them, human beings that you care for them? You have made them a little lower than the angels, and crowned them with glory and honor." They may be right. I won't deny that. But I will point out to them that it was a human that wrote that passage about humans: dolphins might believe they are the pinnacle species. (p. 178)

I think this book is an important example of a highly distinguished scientist who is still on a search to find how best to fit his sophisticated knowledge as a scientist into the Christ-centered, Spirit-filled life he has experienced and found to be real. I think it was published a little prematurely, but it illustrates the journey that all of us in the sciences must take. This is especially difficult for someone who rises to the upper tier of the sciences at a nationally important university where time pressures are enormous as one tries to fulfill responsibilities to family and church, along with those of a high-pressure career. I commend Janssen for doing this so well. This book is an admirable step along the journey that all of us are taking and what is most important of all is that we have mechanisms in place to provide mutual support to one another with each step we take. This is especially important for those whose journey

takes them into the cauldron of a first rate research university.

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SCIENCE AND RELIGION

THE BELIEVING SCIENTIST: Essays on Science and Religion by Stephen M. Barr. Grand Rapids, MI: Eerdmans, 2016. vi + 226 pages. Paperback; \$25.00. ISBN: 9780802873705.

Stephen Barr is professor of theoretical physics at the University of Delaware, fellow of the American Physical Society, member of the Academy of Catholic Theology, and author of *Modern Physics and Ancient Faith* (University of Notre Dame Press, 2003). This book is a collection of twenty-six of his pieces from 1997 to 2013 (11 essays, 13 reviews of 15 books, and 2 unpublished lectures), most of which are previously published (15 appear in the *First Things* journal and/or blog). The pieces range from four to twenty-two pages in length, averaging eight pages each, with only three being over ten pages, making for rewarding piecemeal reading. The stand-alone essays can be readily included in undergraduate courses needing to provide engagement with perspectival faith-based reflection and critical thinking. The book adds fifteen pages of notes (mostly contextual explanations and updates) and citations for direct quotations, but lacks an index and any new content.

Chapter 1, "Retelling the Story of Science," is Barr's Erasmus Lecture delivered in New York in 2002 and serves as the introductory essay. As in his 2003 book, he describes five main themes of materialism, and their reversals via "plot twists" in the actual history of science. First, the idea that science overthrew religious cosmology was reversed by big bang theory and the scientific consideration of a beginning. Second, while the idea that mechanism nullifies teleology had growing support in terms of considering laws of physics apart from a lawgiver, many now find the simplicity and aesthetic form of the mathematical principles of physical law evocative of a divine designer. Third, the "dethronement of man" and a universe without purpose, which claimed scientific support in the randomness of events, lost credibility due to the "anthropic principle" and a fine-tuned universe. Fourth, the notion of a closed universe with physical determinism gave way to an open universe upon the rise of quantum mechanics with its uncertainties. Fifth, the view of the human person as machine, with the brain simply running biochemical reactions, is now less tenable due to