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Reviews

Ian Hutchinson

Can a Scientist Believe in Miracles?

Downers Grove, IL: InterVarsity Press, 2018. 277 pp. pb. £18.99. ISBN 978-0-8308-4547-7

Ian Hutchinson is a highly distinguished scientist, being a plasma physicist and professor of nuclear science and engineering at the Massachusetts Institute of Technology. This very readable book is in the form of questions, often grouped several at a time if related, and the answers the author has given when speaking at events organised by The Veritas Forum over many years.

The subject matter is wide-ranging and far from limited to what one might expect from the title. Many of the topics covered will be familiar and well-worn territory for readers of *Science and Christian Belief* but the author's treatment is helpful and refreshing to read. This comment relates for example to the way he disposes of putative conflict between science and the Bible, whether with regard the compatibility of evolution and the creation stories in Genesis or to miracles.

Hutchinson is committed to a high view of Scripture as inspired by God, but of course this does not mean that it has to be interpreted only literally, nor does it mean that accounts of the same event in different gospels cannot vary in detail. The author defends the general integrity of Scripture as history, though, as with other questions he discusses, the adopted format means that arguments are not developed in detail. He is somewhat dismissive of critical scholarship and does not mention results of that which would command widespread agreement (e.g., that there are several sources behind certain biblical books as we now have them) but, at least to my mind, by no means undermine the Bible's integrity. However, he makes a useful distinction between what can be used in apologetic argument, especially evidence for the resurrection of Jesus, and that which is plausible from within Christian commitment, especially the virgin birth.

A particular target is scientism, where the author draws heavily on his previous book *Monopolizing Knowledge*. Scientism is the idea that scientific knowledge is the only kind of knowledge there is. As Hutchinson points out, this is patently self-defeating since 'scientific knowledge is the only kind of knowledge there is' is not itself a scientific statement and therefore, by definition, it does not express knowledge! Besides this, swathes of knowledge from other disciplines are excluded. Does history not give us knowledge? Do the humanities in general not give us knowledge? And what about ethical norms?

One area where religion has something to say to science is in the area of ethics. Since scientism is false and science cannot adjudicate on ethical issues, religion must have a place at the table. Hutchinson specifically raises the issue of stem cell research and therapy, which involves the destruction of human embryos (as with other topics, owing to the book's format, this one crops up a couple of times). However, Hutchinson is cautious in drawing any conclusion from his Christian perspective and I am left intrigued to know what he actually thinks.

The topic of miracles occurs in the fifth chapter with specific reference to the evidence for the resurrection. Hutchinson rightly sees the evidence of the gospels and, especially of Paul in 1 Corinthians 15, as robust. But engagement with the arch critic of miracles, Scottish Enlightenment philosopher David Hume, comes later in chapter 9. Hume can certainly be

criticised as begging the question, as he was by C. S. Lewis. His understanding of probability was also deficient as Hutchinson explains (267, n. 10). I have argued elsewhere myself that the probability that testimony is true increases dramatically with the number of witnesses and can in principle overcome the initial improbability of a miracle.

Hutchinson is cautious with regard to natural theology. He is rightly dismissive of Intelligent Design in its biological manifestation (curiously in the chapter on cosmology and in answer to a question about the big bang) but sees fine-tuning as better explained theistically than by alternatives such as the multiverse – even if he wants to be modest in making too much of this. However, it is worth saying that if one does have good reason to believe in God in the first place, from reason or experience, then miracles may not be as improbable a priori as Hume avers and his argument is further undermined.

In summary, I can thoroughly recommend this book, both for Christians who struggle with some of the issues such as evolution and for atheists who need some persuading that it is perfectly rational to believe in Christianity and that, indeed, it is life-changing to do so.

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Julia Golding, Andrew Briggs & Rodger Wagner

The Curious Science Quest: Greek adventure: Who were the first scientists?

London: Lion Children's Books, 2018.
128pp. pb. £5.99. ISBN 978-0745977454

This book is for young people who ask questions about science, life and the world. The book is a merging of fiction and science non-fiction. It is written in a way that shows the thought processes of people who like to ask and answer scientific questions. To avoid a format of question and answer, the authors have created the characters of Harriet, Darwin's pet tortoise, and Milton, Schrodinger's indecisive cat, who lead the reader through an exploration of the history of early science and scientific questions.

One of the many things I liked about *Who were the first scientists?* is the layout, which includes pictures and cartoons as well as text. I also liked some of the interesting facts such as how someone calculated the circumference of the earth. I was surprised that even very early calculations were not too far out from what we now know. I found parts of the book quite funny or absurd, such as the person who wanted to know if an arrow moves, when it plainly has to, to get from point a to point b. I found the book long enough to convey the information and explanations but not so long as to become a dirge.

There were a few things that I found frustrating about the book. It uses many Greek names but doesn't say how to pronounce them, which could prove a problem for younger readers. The biggest issue with the book is that its presentation is deceptive. The style of the cover makes it look as if it is aimed at mid to upper primary school readers, as does the inside layout of pictures, characters and cartoons; but the actual content is really more suitable for lower secondary pupils. The blurb on the back says, 'Does science explain everything or can faith help to find answers?', but the book never really answers this. The last few pages have some sentences relating to creation and types of questions, but there is nothing else explicit. If you want more about faith and science this is not the book for you.

Overall this is a good book for younger secondary pupils to think through how

people used to think and the beginnings of scientific questions; but, as I have said, if you want a book that bridges science and faith then this is not it. Despite the cover, younger children would need to read it with an adult, to help explain the harder concepts. 'Never judge a book by its cover' is very true when it comes to *Who were the first scientists?* because the front cover makes it look like a children's book, which it isn't; and what it says it will do on the back, it doesn't.

Ben Jordan aged 13 is secondary school pupil in Southampton

William T. Cavanaugh (ed.)

Fragile World: Ecology and the Church

Eugene, Oregon: Cascade Books. 368pp.
pb. £34.00. ISBN 978-1498283403

The family took a somewhat typical holiday to the Atlantic coast of France staying in an Airbnb in a small village near famous surfing beaches. Despite the cold early Spring weather, we braved the ocean each day and sampled the lovely food and wine in the small village stores. Decamped to our temporary home, I decided that the family's night-time, out-loud reading next to the fire should be Pope Francis's encyclical *Laudato Si*. My own reading had so enthused me that I felt my family really ought to share in the enlightenment. They mostly slept. Despite my children's reaction to this document, it is of monumental import within the creation care community, not least because it seems to have been the lever that has opened many doors within the secular conservation community for Christian conservation organisations. *Fragile World* is an edited volume by almost exclusively Catholic theologians which intends to extend the ideas found in *Laudato Si* and examine more deeply and broadly Catholic social doctrine as it relates to the environment. I have found my own Protestant background significantly lacking in its understanding of Catholic social doctrine and hoped to learn and be challenged to think more deeply about the nature of Christian engagement with the environment.

The volume flows from a conference convened in the USA, but which delightfully represented majority world voices significantly. There were a number of authors from Africa, South America and Asia. A few familiar names surface from the UK: Celia Deane-Drummond and Michael Northcott. The book is divided into six parts: Catholic Social Teaching, environmental case studies, theology, ethics, pastoral resources and eschatology. Like the proceedings of many conferences, the writing is uneven, often repetitive and disjointed. A short introduction simply introduces the chapters and themes and the book suffers from a lack of a chapter pulling all the threads together into a unifying vision for the future. I was riveted by the first four chapters reading them on consecutive days arising early each morning full of expectation at what I might learn about Catholic Social Teaching. This came to a grinding halt with the case studies, possibly because these went over familiar ground. The science was presented by theologians, which would have been beneficial for the conference audience and for theologians reading the book, but my interest in the volume was somewhat dulled by the portions which seemed to me common knowledge – at least for a marine ecologist significantly involved in the conservation movement.

Somewhat surprisingly given the impetus for the conference, much of the treatment of Pope Francis's material in *Laudato Si* was in broad terms or as a fragment taken out of the context of the encyclical and applied to a particular topic. With some exceptions, this was not a systematic extension of the Pope's writing, but theologians who had been working on the topic for years being afforded the opportunity to present their work in

light of the encyclical. Case studies where specific environmental crises were examined often did not refer to *Laudato Si*. There were, though, helpful pointers to particular social doctrine or teaching which linked the specific examples to a broader narrative. It was helpful to learn that the encyclical was not generated *de novo* but flowed out of an evolving understanding of the environment among several past Popes and rooted in a long history of nature theology among Catholic theologians.

I was often challenged by the emphasis on the significance of humans. In the tension between our special biblical role within creation and our being a part of creation the book tended towards emphasis of the former. However, the obvious pastoral concern for the poor and the emphasis on the poor in Catholic social doctrine provided a helpful counter to the teaching of many other books with strong conservation ethics but rooted in the intrinsic value of nature. There were some strong critiques and some much needed chiding, such as this Philippine perspective by Rolando A. Tuazon : 'When greed becomes a manifestation of the basic insecurity of not being authentically and unconditionally cared for and loved, one seeks to fill that void through an obsessive compulsion for wealth and power, sometimes identifying one's dignity with material success' (209). This presents a strong world-view challenging us to consider our own wealth and comfort in light of the poverty of so many around us.

Overall I was left wishing for a more satisfying read, but the different perspective (Catholic, often from non-Western writers) from my own I found highly worthwhile and I am left with a stronger desire to continue to increase my concern for the poor and marginalised. If you can get this from a library you will find yourself challenged, with many spiritual nuggets to ponder. But skip over some of the weaker parts.

Robert Sluka leads A Rocha's marine conservation programme – www.arocha.org/marine

Alister McGrath

The Great Mystery: Science, God and the Human Quest for Meaning

London: Hodder and Stoughton, 2017, 256pp. pb. £10.99 ISBN 978-1473634336

Alister McGrath is a recognised mainstream theologian and former scientist, an Oxford Professor, and one of the most significant Christian apologists of this generation. His previous works include both theology and penetrative comments on the various 'new atheists'. The present book is a less focused work, looking more generally at the issue of what is human identity, and concluding it is a 'great mystery'. In fact, 'human identity' might have been a more descriptive title (especially in this age of Google and Amazon searches!)

The first section of the book seeks in various ways to establish that human beings are complex and multi-layered. Any kind of scientism, or 'shallow rationalism' approach, must fail to give a full picture.

Maybe associated with this theme, the style of the book is unusual. So on one double page (8-9) we may be directed to John Banville (an Irish writer who has written, for example, some Kafkaesque 'historical' novels about Copernicus and Kepler), to the philosopher Wittgenstein, C.S. Lewis, Albert Einstein and the rationalist but thoughtful biologist Peter Medawar. On the next two pages it is William James, the moral philosopher Susan Wolf, physicist Andrew Wood, and atheist novelist Salman Rushdie. On the next two the militant atheist advocate of 'spirituality' Sam Harris, philosopher Keith Yandell, Richard Dawkins, and the (lapsed Christian) deist sociobiologist Edward O. Wilson. Often each one has an 'insight', but

it is not really clear whether readers are to regard them as some kind of 'authority' or just someone with a self-evident aphorism. It is also not clear whether readers are imagined to have some idea as to who all these sources are and how their overall philosophies are believed to fit into the picture.

McGrath rejects the false certainty both of religious fundamentalism (in the modern sense) and new atheism, insisting that we need to be open to the possibilities of alternative views. Truth is found neither through cold rationalism nor in the fog of postmodernism, but in a layered critical realism. Neither Christianity nor atheism can be 'proved' in any absolute sense. Christian theology, however, offers a kind of objective view of reality that we, as participants, struggle to see, and objective and subjective come together in the universal human search for ultimate meaning.

In a more thematic approach McGrath rejects the purely subjective humanly invented 'meanings' of Feuerbach, Nietzsche and Richard Rorty. On the other hand, he is sympathetic to the forms of existentialism in Dostoyevsky, Kierkegaard and Iris Murdoch. 'Meaning' is something that is objectively grounded but subjectively applied (86). This ties in with the increasing view that theology and spiritual experience are distinct, though both are important. There is a fundamental human need for meaning, but this has to be experienced as well as relating to a theoretical framework. Some life experiences challenge our belief framework and have to be worked through experientially, as classically illustrated in C.S. Lewis's *The Problem of Pain* and *A Grief Observed*. There is a common sense of wonder and awe at a universe both beautiful and yet with dark aspects, a universe mysteriously open to analysis with the humanly created system of mathematics. All this goes naturally with a view of a creator God, but none of it is a 'proof'.

Humanity, McGrath shows, contains neither the rational beings of the 'Age of Reason' nor the 'naturally good' in some philosophies. Rather, we are in the image of God and yet flawed by sin, namely the tendency to wrongdoing. This latter can also be seen as a legacy of our evolutionary past which we need to overcome, an idea going back to Huxley. The Christian aspect of this is that outside help is needed for us to do this.

The last part of the book explores idea of 'progress' and our likely future. It develops the trenchant criticisms made by the literary critic Terry Eagleton of ideologies of progress and the new atheism – though some of us may struggle to see how the ideas of transhumanists to use science to 'improve' humankind can really be taken seriously at all. The arrogance and ignorance of some new atheists is obvious, but it was news to me that some actually insisted Erasmus must be an atheist because he was a 'humanist'!

The book ends in concluding that human identity is a 'great mystery', and urging humility and toleration towards other views as we live with so many unanswered questions.

The book is learned and takes a sensible Christian line, but to what kind of person should it be recommended? The style is at times flowing and almost poetic, though often peppered with quotations and citations. The book is not about the interaction of science and faith on specific issues, but rather a tour de force about human nature. Fundamentalists (in the modern sense), whether new atheists or young earth literalists, will hate it. For thoughtful Christians who don't mind ploughing through the multiple citations, it may reinforce the ideas of the fusion of objective and subjective, theology and spiritual experience, and the complexity of human identity. It will also reinforce ideas of toleration without fuzziness. For some of the more open unbelievers it may move them further towards thinking

about the Christian faith. McGrath is an expert on C.S. Lewis, sharing his interest in Renaissance literature, and this seems a work in the broader tradition of thinking, of Lewis himself.

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Gary A. Anderson and Markus Bockmuehl (eds.)

Creation ex nihilo: Origins, Development, Contemporary Challenges

Notre Dame, Indiana: University of Notre Dame Press, 2018. 421pp. hb. £46.95.
ISBN 978-0-268-10253-1

The author of one of the papers in this collection, Cyril O'Regan (chap. 11), argues that Spinoza's critique of Judeo-Christian monotheism eventually led to what he calls 'an eclipse' of the concept of 'creation from nothing' in western philosophy and theology, seen especially in German Romanticism and Idealism. In the following paper Ruth Jackson gives somewhat modified support to this in her study of 'The Doctrine of creation and the problem of the miraculous in the modern theology of Friedrich Schleiermacher'. In his case there was also a concern that advances in the natural sciences threatened the conceptual viability of 'creation'. However, in his dogmatic theology he still affirmed that God creates 'out of nothing' but he did not see this as statement about cosomogenesis but of the moment-by-moment absolute dependence of finite being upon God for its existence.

With the rise of modern critical study of the Bible biblical scholars questioned whether it was valid to understand such texts as Genesis 1:1-2 and Hebrews 11:3 in terms of *creatio ex nihilo*. Gary Anderson discusses this in the opening chapter of the book. In the following chapter, 'Why *creatio ex nihilo* for theology today?', Janet Soskice discusses opposition to the doctrine from process theologians, who regard it as a Hellenistic import into Christian theology which makes God too distant from a suffering world. She also discusses opposition to it from some feminist theologians who argue that it introduces harmful ideas of dominance and dualism into Christian theology.

It was the neglect of, and in some quarters opposition to, the doctrine of 'creation out of nothing' in philosophy and theology, and the claims of a few vociferous atheistic scientists, such as Stephen Hawking in his 2016 Reith Lectures, that science has made appeal to a Creator redundant, that led the editors of this book to set up the Oxford-Notre Dame Project. This brought together a group of scholars from across a wide spectrum of expertise to study and discuss what this doctrine means, why and how it arose out of a biblical tradition that prima facie seems not to support it, and what significance or relevance it might have for today, whether for theology or for the dialogue between religion and science. The project involved an intensive seminar at Keble College, Oxford in July 2014 and a larger conference at the University of Notre Dame in July 2015. The book presents sixteen papers which came out of this process.

The papers fall into five groups: biblical roots, the development of the doctrine in the ancient and medieval church, creation *ex nihilo* in Jewish thought, the doctrine in Christian systematic theology, creation *ex nihilo* and scientific cosmology. Readers of this journal may feel particularly drawn to the first and last groups. The papers vary in their accessibility to the non-expert. For those with limited philosophical and theological

background some of the papers will not be easy reading.

Those concerned to have a biblical basis for their theology need to take note of Anderson's discussion of the biblical evidence for the doctrine (16-22) in which he argues that a 'proof text' approach to it is exegetically unsatisfactory. Richard Clifford's paper (chap. 3) is helpful and important as he sets the Old Testament material in the context of the cosmogonies of Israel's neighbours. There are both similarities and differences, but what becomes clear is that the way of thinking about creation and the 'big questions' that were asked in relation to it were different from those we tend to assume and bring to it because of the influence of the science in our culture. Failure to recognise this leads us to mishandle Scripture. Clifford gives a short comparison of 'Ancient versus modern views of creation' (56-57) which is worth pondering in this regard. Both Anderson and Soskice make the point that, although the doctrine of creation out of nothing cannot be 'proved' by appeal to isolated biblical texts, it is 'biblical' because it is rooted in a biblical theology of the nature of God and God's relationship to the created order. The early theologians who developed the doctrine were not primarily concerned with world's origin but with God's relationship to, and governance of, the world. It would have been good to have had a paper which dealt with this aspect of biblical theology at some length.

The papers on the development of the doctrine in both the Christian and Jewish tradition show the breadth of the implications of the doctrine as they discuss what issues and problems it raised for different thinkers. How they dealt with them helps us understand the doctrine's relevance for today. Athanasius sought to understand what it implies about the nature of creaturely being, the nature of evil and the doctrine of salvation. For Augustine of Hippo it ensures God's freedom in creating and therefore the freedom of creation as an act of God's gracious good will. Both Aquinas and Bonaventure saw the doctrine as linking creation and salvation but differed over whether or not it requires a temporal beginning for creation. Maimonides was not concerned about whether or not creation had an absolute beginning in time but insisted that it must be a *de novo* creation because of the implications that denying this has for what can be said about God's will and purpose. In *The Brothers Karamazov* Dostoyevsky grappled with the issues the doctrine raises with regard to the problem of evil. A theme which runs through many of these papers is the way theologians have sought to keep a balance between God's transcendence over, and yet immanence in, the created order. The doctrine is taken to mean that creation is not just an event but a process with God continually upholding the created order.

The book ends with three papers which seek to relate the doctrine to modern science, especially cosmology. Adam Hincks (chap. 14) gives a brief overview of modern cosmology and then focuses on three issues: multiverse theories, the possibility of a cyclic universe, and attempts in quantum cosmology to describe physically how a universe can come from 'nothing'. This is a valuable discussion in which he exposes what is empirically well-grounded from what is speculation and some muddled thinking (such as what people mean by 'nothing'). Andrew Pinsent (chap. 15) argues that the doctrine of creation out of nothing was not based solely in ideas about God as Creator but was also grounded in 'the perception of relating to God as to a second person in the context of a covenant' (359). This, he argues, led to a cultural confidence that the universe is harmonious, law-like and potentially knowable. He sees evidence that a decline in the sense of such relatedness to God has led to a loss of a sense of coherence in nature. Andrew Davison's concluding paper (chap. 16) critiques

the use of 'quantum fluctuation' and 'no boundary' views of the origin of the universe to argue that there is no need for a Creator. In doing so he makes clear that *creatio ex nihilo* does not depict God as a first cause on a par with creaturely causes, as these arguments assume, but as the 'cause underlying all causes' (373). He also exposes confused thinking about 'nothing' including the semantic error of defining 'potential' as 'nothing'.

This is a demanding collection of papers but one worth reading by those who have an interest in the doctrine of creation out of nothing, which should include Christians working in all the sciences, not just cosmology. It shows the richness and wide scope of the traditional doctrine. By presenting debates that it has provoked down the millennia it stimulates thought about its relevance and application today in theology and philosophy and the relationship between these disciplines and science.

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Celia Deane-Drummond and Agustín Fuentes (eds.)

The Evolution of Human Wisdom

Lanham, MD: Lexington, 2017. 212 pp.
£70. ISBN 978-1498548458.

In the literature on human evolution, one frequently finds discussions of various aspects of human development – cognition, language, culture and more. However, despite the fact that 'wisdom' has long played an important role in many ways of understanding human experience, particularly in religious and philosophical perspectives, it has received comparatively little attention in evolutionary studies. *The Evolution of Human Wisdom* seeks to address this lack, offering an interdisciplinary set of essays that explore together the significance of evolution for understanding human wisdom.

After a brief introduction, an initial essay from Dylan Belton sets the stage by addressing two issues that appear repeatedly in the following chapters. First, Belton challenges some reductionist tendencies in various evolutionary approaches to understanding wisdom. Drawing on the philosophical anthropology of Max Scheler, Belton argues that any adequate understanding of human wisdom should recognise the 'flexibility' and metaphysical distinctiveness of the human person. Many of the other essays similarly reflect on the extent to which human wisdom can be understood as a mere continuation of earlier evolutionary processes. Second, though related, this essay also offers a helpful summary of the differences between the Modern Evolutionary Synthesis, which emphasises genetics and natural selection as the dominant mechanisms for evolutionary development, and those more recent biologists who argue for the Extended Evolutionary Synthesis, which focuses on more systems-oriented views of evolution (e.g. niche construction). While the latter does not necessarily avoid the reductionist worries Belton addresses, it does offer a broader framework within which to understand a phenomenon as rich and complicated as human wisdom.

The next eight essays are paired to form four sections, focusing respectively on the importance of symbols in evolutionary anthropology, the role of community and place in shaping human wisdom, the sapiential significance of speech and language, and the idea of wisdom as a virtue. Although it is not always entirely clear why certain essays have been paired, the range of issues and diversity of perspectives represented by these essays makes for interesting reading. As one example, the two essays that comprise the section

on ‘Homespun Wisdom’ (Part II) present an extended discussion of ethnographic data relative to ‘multi-species interaction’ and domestication (chap. 4) and a rich theological discussion of ‘place’ and Jesus as ‘homemaker’ to address the ways in which humans construct and construe their environments as necessary for human wisdom (chap. 5). While an initial glance might suggest that these two essays have relatively little to do with another, they both relate in different ways to the idea that human wisdom cannot be understood in isolation from how humans interact with their broader environments. Certain chapter pairings work somewhat less successfully, but the overall effect is to create precisely the kind of interdisciplinary interaction that is the book’s stated goal.

As can be seen from this summary, by far the greatest strength of the book lies in the interdisciplinary nature of the essays. Although discussions of wisdom are quite common in theological and philosophical contexts, it is far more difficult to find sustained discussions of the topic from fields of study like biology and anthropology. Indeed, as Marc Kissel noted in his essay, scholars in such fields ‘do not often conceptualize human behavior in terms of wisdom’ at least partly because such judgements seem too ‘value-laden’ (25). Consequently, the mere fact that *The Evolution of Human Wisdom* succeeds in generating a robust conversation about an important aspect of human experience across these kinds of disciplinary boundaries makes it worth reading. Additionally, the clear differences that arise between the various essays helpfully highlight some of the key challenges in the discussion, particularly those that have to do with the extent to which ‘wisdom’ can be found among non-human (or pre-human) creatures.

However, as is often the case, this strength also constitutes one of the book’s primary weaknesses. Interdisciplinary discussions like this often struggle to establish and maintain the common ground necessary for a shared conversation. In this collection, though, that challenge is exacerbated by the fact that there does not seem to be any shared definition of the very term under consideration: ‘wisdom’. All the essays seem to agree that wisdom relates at least to certain kinds of practices (e.g. place-making) that require certain kinds of capacities (e.g. symbol use). Yet this tells us more about the kinds of practices and capacities we associate with wisdom than with what we think actually constitutes wisdom itself. Apart from some significant definition of *wisdom*, then, it becomes difficult to know whether the various essays are even talking about the same thing. Indeed, those steeped in religious and philosophical discussions of wisdom will occasionally find it difficult to discern how some of the essays relate to wisdom at all. As Stewart Clem notes in his essay, wisdom is ‘a wildly vague term in need of clarification’ (118). Yet the book spends relatively little time trying to generate the kind of clarity on this point that would seem necessary to advance the conversation meaningfully.

Although the ambiguity surrounding the central subject of the book stands out as a notable weakness, the essays nonetheless comprise an interesting interdisciplinary conversation about an important area of human experience.

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R.J. Berry

Environmental Attitudes Through Time

Cambridge: CUP, 2018. 267pp. pb. £24.99.
ISBN 978-1-107-06232-1

We are seeing an unprecedented rise in concern about the damaging impacts of humans on the environment, with school

strikes for climate, Extinction Rebellion and major books and documentaries setting out the ecological disaster that is engulfing us. It is important to question how we got to this stage in human and environmental history. It is only by tracing the journey thus far, that we can begin to find a way forward that will lead to long term sustainability. 'Environmental Attitudes Through Time' is an original and timely book. R.J. Berry combined his multifaceted expertise as a geneticist, ecologist, science historian and theologian, to lead us skilfully through an historical analysis of human attitudes to the environment. His starting point is science, arguing that it is only here where we can begin to understand humanity and our relationship with the wider natural world. From there he considers human and environmental history and their interactions. Our relationship with the land, the development of agriculture, natural science and map-making are seen through the lens of how these developments changed our perception of the environment. Berry draws on politics, philosophy and the history of religion to help us understand the developing human perception of nature.

A more complex dynamic is the negative human impact on the environment. Berry considers this from a number of perspectives and traces the build-up of concern about environmental degradation. In the twentieth century there was a growing awareness about our impact on the environment and a need to regulate our interactions, but the response was too often weighted toward human, not overall ecological benefit. In Chapter nine, Berry is not optimistic about potential for the Sustainable Development Goals in achieving environmental stability in the face of human activity, considering them 'yet another attempt at a ceasefire in an otherwise unresolved war' (205). This can be seen as one of the hinges in the book, where Berry maps out the outworking of the separation of environmental concerns from those of human well-being and economic security. Tracing the roots of this divide to the 1972 UN Conference on the Human Environment in Stockholm, through many international meetings and declarations, Berry concludes that the false dichotomy between human and environmental concerns is a causal factor in our modern environmental crisis.

Berry's final chapter reflects on environment, religion and science, ending with a complementary conclusion concerning their relationship. He looks at the difficulty of humans responding to existential environmental threats. Although we now have the knowledge and technology to choose our future path, we too often act within the short-term timeframes of our biological ancestors. He quotes William James, 'Science can tell us what exists; but to compare the *worths*, both of what exists and what does not exist, we must consult not science, but what Pascal calls our heart' (253). Reminding us that Lynn White not only [falsely] claimed that Christianity was the root of our ecological crisis, but also concluded that Christianity was the most practical pathway towards a remedy, Berry concludes that religion is needed to enable us to regain a sense of awe and wonder at nature and act in a moral rather than purely mechanistic manner.

This is a very readable book, with clear themes running through the chapters. It is full of useful additional reflections, placed within boxed sections to enable readers to explore at greater depth, while the main line of reasoning is able to flow around them. Needless to say, it is well indexed, with useful footnotes that show the sheer range of sources that the author has drawn on. At the end of each chapter there is a helpful list of further reading.

Those of us who knew and loved the author, Sam Berry, will know that this is his last book and published just a month after his death in 2018. In its originality and contemporary relevance it confirms

his legacy as a creative author and editor who has a significant message for our time. We give thanks for a great writer on science, environment and the Christian faith. Berry explains that the term ‘scientist’ was coined by William Whewell in 1832, who felt it was not meaningful to describe those who pursued scientific knowledge as ‘natural philosophers’ (136). In reading this book I meet in the author a polymathic person of immense knowledge and intellect. Berry was a scientist in the modern sense and also a true ‘natural philosopher’. He has combined the disciplines of science, humanities and the arts to give us a superb and thought-provoking book, which passes on the baton of environmental concern.

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Andrew Briggs, Hans Halvorson, Andrew Steane

It Keeps Me Seeking. The Invitation from Science, Philosophy and Religion

Oxford University Press, 2018, 360 pp.
£19.99 ISBN: 9780198808282

Among many recent books dealing with the relation (‘dialogue’) between the sciences and religion (theology) this book represents a special and unusual kind. The discussion of science and religion takes place within the context of an open-ended wonder about various aspects of human life. This discussion is not an abstract academic enterprise, but a lively dialogue between two practising scientists (A. Briggs and A. Steane, Oxford) and a philosopher (H. Halvorson, Princeton). They adopt the strategy of not pronouncing the final words or making accomplished conclusions on the theme. The pivotal word in the title of this book is ‘seeking’, that is, continuing to seek for difficult and sometimes intuitive answers with respect to different questions posed to human beings by worldly phenomena, by the fact of humanity’s existence and by their experience of God.

This seeking proceeds in the narrative of this book not only in the form of discourse and accomplished knowledge in such disciplines as physics, biology, philosophy and theology, but from *personal* encounters with reality and spiritual experience related to the history and tradition of the communities to which the authors of the book belong. The latter predetermines the structure of the book, which places it a bit outside the standard academic setting. Formally, the structure of the book can be described as three parallel narratives: a) personal accounts of scientific perception of reality and Christian experience (chaps. 6 (AB), 9 (AS), 18 (HH) as well as (34-35, 51, 52, 212, 260-261, 278-279); b) a joint discussion of major issues (the approach to God (chap. 2), a conversation about the sense of naturalism (chap. 14), uncertainty in scientific knowledge and intuitions of God (chap. 20.1), freedom of engaging with science in order to respond to God (chap. 20.2), what can be learned from the sciences and its contribution to our perception of the Divine (chap. 20.3); c) an academic narrative discussing major problems in the various fields, such as the structure and function of scientific research (chap. 4), human identity and personhood (chap. 5), the ambiguous nature of quantum reality and divine action (chaps. 7-8), general relativity with its elusive notion of space and its analogy with the theological stance on divinity (chap. 10), the argument from design, fine tuning and the critique of natural theology (chap. 11), biological evolution, neo-Darwinianism and the critique of intelligent design (chap. 12), evolutionary biology and the human condition (chap. 13), the treatment of miracles in rubrics of faith and knowledge (chaps. 16-17), the importance of the biblical account in the discussion on science and theology

(chap. 19).

One can outline some dimensions of this book which make it unique and very innovative in the field. Apart from the personal account mentioned before, in their methodology, the authors avoid any hardline standing on the truth of what is affirmed either in modern science or in Christian experience. One of the pivotal stances is the fundamental uncertainty related not to the facts of science and its practical implications, but to their interpretation. The authors analyse several examples of such an uncertainty in the physical sciences (quantum theory and cosmology) by making some parallels with theology's historical struggle to avoid accomplished definitions of the Divine (e.g. 215). The idea, that scientific and religious experience involve open-ended hermeneutics places the whole enterprise of relations between science and religion (or theology) into a purely anthropological framework dealing with the mystery of human existence which cannot be elucidated either with the help of physics or biology alone (70, 74, 178, 188, 210). At the same time one can detect a strong religious commitment (see e.g. 36, 44, 109, 162, 169, 174, 183, 189, 233-235, 258-259, 292, 326, 338, 347) present in the analysis of all scientific phenomena, meaning that while science is independent in its ways of interrogating the sense of reality, it is this very science that needs an interpretation of its sense and its very possibility from within a wide experience of existence which naturally involves religious intuitions present in the human history. This, so to speak, theistic or theological commitment is not advocated by reference to the dogmatic formulae or the authority of magisterium, but asserts God's presence in the world as indirectly manifested in the sciences as an element of personal experience of existence – as, for example in an entry for 'God' in the table of the Glossary (36).

After reading this book there remains a feeling that indeed the 'seeking' for truth and the sense of the sciences, its discoveries and their effects in human life, together with the hardship of humanity to grasp the meaning of things, ultimately amounts to the fundamental problem of existence as such, which is a perennial problem. In this sense the book represents another contribution to that open-ended hermeneutics of the apparently ambivalent human position in the universe being stretched between two poles of its finitude and physical embodiment, on the one side, and being a transcending articulating consciousness of the world on the other side. The authors argue for the wholeness of the human phenomenon and the fallacy of any dualisms in the description of the world, but the wholeness of the human person remains an ultimate mystery which can be explicated by the sciences only transiently and asymptotically, so that the fundamental incertitude in responding to fundamental questions does not stop human curiosity thinking about them (79, 110), but rather develops in humans a sort of epistemological humility (111).

In scientific terms the book refers to recent advancements in quantum physics, cosmology, evolutionary biology and astrobiology, supplying the reader with useful references although these are probably not easily accessible to the general public. Unlike any other literature on science and religion it avoids citing numerous books and articles of a biased or even apologetic character. In this sense the reader approaching this book as an initial resource would be puzzled as to know where to place any given discussion. The book does display philosophical insight, but mostly in relation to classical philosophy, not engaging at all with views established in the twentieth century in the dialogue between faith and reason, in particular those in the continental tradition. For example, in the discussion of miracles in chapters 16 and

17, miracles are associated with special 'events' which cannot easily be explained in the rubric of any secular ontology, making a metaphysical way of thinking inapplicable to their interpretation. Yet, in this respect reference to the phenomenology of events studied in modern French philosophy would be relevant as an example of a completely different approach to miracles that challenges classical philosophy. In spite of this one must admit that the book advocates an extremely important aspect of the modern treatment of faith in terms of rationality, so that acknowledgement of God does not compromise the intellectual function of a subject (e.g. 71, 121): 'The scientific outlook is no alternative to a religious outlook, and scientific knowledge does not replace great truths of religion' (235). (This quotation constitutes the *de facto* of the book's *Credo*!)

As to theology, the authors, not being professional theologians, avoid references to any hardline theological sources, referring mostly either to Western classical names, biblical sources or personal experience. This is acceptable to some extent if one reads this book with no explicit commitment to historical truth. However, reading this book from the perspective of a scholar acquainted with two thousand years history of experience of God in the Church Fathers, mystics and ascetics of the past and present, numerous discussions on faith and knowledge in both theological and philosophical literature, I am left with the impression that the real value of this book is as an honest personal account of wrestling with the balance between the mystical presence of God through the fact of life and the outward expression of experience of the material world. Based on such a judgement, one could describe this book as contributing to the narrative of experience of God and experience of the world reminding us about the corpus of individual experiences of God in the world from the past, but adjusted to the demands of the scientifically enlightened society in the present.

In any case, the appearance of such a book under the auspices of the Oxford University Press is an exciting event, inaugurating a new kind of literature related to science and religion where personal accounts of scientists, philosophers and theologians can contribute to the further advance of the ever unfolding mystery of the human condition without degenerating into a form of either scientific or religious fundamentalism. The complete human experience advocated by the authors is explored as they 'keep seeking' the balance between the inevitability of human existence in the material world (narrated by the sciences) and the fundamental inexplicability by human consciousness of the contingent facts of that existence (interpreted in theological narrative).

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Nigel Cameron

The robots are coming: us them and God

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The robots are coming. Should we be worried? Ever since Karel Čapek introduced the word 'robot' to mean a humanoid machine in his 1920 play 'Rossum's Universal Robots', there has been a constant theme in science fiction of robots created as servants turning on their human creators. But is this reflected in factual science?

Nigel Cameron helpfully distinguishes mechanical robots from automatic systems embedded in the world around us. Mechanical robots include not only the homicidal cyborgs of fiction but, more importantly, industrial and domestic

machines that perform boring tasks or those requiring great precision. Increasingly, they also include toys. These offer clear benefits or entertainment, but also present some challenges in changing the nature of employment.

Embedded systems, on the other hand, range from satellite navigation in cars, through internet search engines, to automated financial trading. The word 'robot' should be understood to include any system that senses its environment and can affect it autonomously, and these hidden systems are more insidious. There are obvious dangers in the deployment of autonomous weapons by the military, but the dangers of relinquishing control of our financial systems, energy infrastructure or even cars to autonomous systems are just as worrying.

The Bible, of course, says nothing explicit about the philosophical, social and theological implications of automation. However, as in all things, it gives us a framework within which we can assess the value of human endeavours, and Nigel Cameron starts by exploring the biblical basis of what it means to be human. God created people in his own image, but what is that image? The opening verses of Genesis portray God as a creator and ruler, with people made for relationship with him and with each other. Are we delegating that rule to machines? Are we sacrificing human relationships for something synthetic?

Nigel Cameron continues with a whirlwind tour of recent developments and future possibilities. These range from robots in the work place that are already replacing blue-collar workers through to intelligent systems that might soon replace white-collar workers in professions such as medicine and law. Robotic toys are growing in popularity, both as conversational dolls for young children and as companions for the elderly. There is obvious value in these, but also a warning that we are delegating to machines the personal relationships for which we were created. Something has gone seriously wrong when a mother post messages to her 'friends' on a smartphone while her child has a conversation with an electronic doll.

Indeed, we should think carefully about our own relationships with people and with machines. It is often convenient to anthropomorphise machines, especially when they display human aspects in their interactions or even their physical appearance. Speaking to a machine and listening to its response or interacting with a machine that happens to be wrapped up so that it that vaguely resembles a person should not fool us into thinking that it actually is a person. Talk of 'robot rights' or even 'robot spirituality' betrays a failure to distinguish a simulation from the real thing.

The chapter about the 'singularity' when robot intelligence overtakes human intelligence is more speculative, but still serve to keep us aware of possible dangers. However, Nigel Cameron says much less about autonomous weapons and social media, both of which present immediate dangers. Of course, these dangers are just the dangers inherent in any system created by people who are either cavalier in their motivation or lack competence. These are the general issues facing any profession but can easily be left behind with the rapid pace of change in technology.

Nigel Cameron freely admits to being a non-technologist, and this book is written by a layman for lay people. The book is indeed free from daunting technical details, but also slightly exuberant in its suggestions of possible and probable advances. This book is unashamedly aimed at the popular market. Nevertheless, even the more sensational chapters have enough truth at their core to provide useful stimulation.

Each of the seventeen chapters ends

with relevant questions that help the reader reflect on the ideas being discussed, and would also make a good starting point for group discussions. The challenge for Christians is to exercise rule and enjoy relationships as God intended. Robots – in the form of autonomous systems – may have a role to play in assisting us in those, but God still expects us to rule wisely and maintain our relationships with him and with each other. We remain responsible for ensuring the motivation and competence of those building and deploying robots, and we must be careful to distinguish simulations from the real thing. Only then can we engage with changes in the world around us and bring biblical perspective to bear on them.

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Stanley P. Rosenburg, General Editor, Michael Burdett, Michael Lloyd, and Benno van den Toren (assoc. eds.)

Finding Ourselves after Darwin: Conversations on the Image of God, Original Sin, and the Problem of Evil

Grand Rapids, MI: Baker Academic, 2018.
375 pp. pb. £19.99 ISBN: 978-0801098246

Nearly 150 years after Charles Darwin outlined his theory of human evolution in *The Descent of Man* (1871), Christians continue to wrestle with its theological implications. This edited volume examines three Christian doctrines in the light of this evolutionary science: the creation of humanity in the image of God, the original sin of the first humans, and the goodness of God in the face of natural evil.

In an opening methodological chapter, associate editor Benno van den Toren introduces a distinction between doctrine and theological theory. The former is 'what the Christian community teaches concerning her faith' (13). The latter are 'theories that theologians have developed to explain and make sense of these doctrines or teachings of the church' (13). In this way, doctrines are primary and define the boundaries of Christian belief, while theological theories are secondary and allow for the exploration of doctrinal implications. It is in this 'space for conceptual flexibility' (23) that the authors of this volume explore the three aforementioned Christian doctrines within an evolutionary context. But a question often arose in my mind, what criteria determine doctrinal status? These were never explicitly defined. For example, is the historicity of Adam a doctrinal truth? Some contributors assume it is, while others do not.

The first part of this book presents various theological theories regarding the image of God. Wentzel van Huyssteen draws from a wide range of academic disciplines and argues that these 'will enable theology to revise its notion of the *imago Dei* as emerging from nature itself' (44). Mark Harris offers powerful evidence for a functional interpretation of the image of God. Notably, this is the dominant view within biblical scholarship. It contends that the concept and language of the image and likeness of god was used to designate ancient Near Eastern kings. But in a radical and polemical re-conceptualisation, the biblical author of Genesis 1 'appears to have *democratized* the ANE idea of the monarchy representing a deity' (57; italics original). In other words, according to Scripture, all humans are kings and rulers of God's creation (Gen. 1:28).

Aku Visala attempts to salvage a component of the traditional substantive interpretation of the image of God. This view is associated with the existence of a soul and a set of capacities such as rationality and morality. He proposes 'a more moderate form of dualism in which

souls are forms of bodies or emergent substances' (69). Visala maintains that mentality is the seat of the soul and believes this averts the anti-essentialism and population thinking of evolutionary biology. An implication of his position is that animals have souls, since mental processes are pervasive in nature. Similarly, Thomas Oord argues, 'If being intelligent or using reason identifies one as bearing God's image, many creatures must be made in the image of God' (84). Oord also presents a relational understanding of God's image in that 'creatures live out the image of God when they love' (88). Finally, Ted Peters offers a proleptic (anticipatory) *imago Dei* in that it is ultimately eschatological. Embracing a dysteleological view of nature with 'no purpose, direction, meaning, *telos*, or end,' he defends the provocative notion that the current creation is not 'very good' (99) and 'the *imago Dei* derives not from Adam and Eve in the past' (106). Instead, it is only in the future eschaton that these biblical beliefs will become a reality.

Part two of this book deals with the doctrine of original sin. It is here where evolutionary science has the greatest impact on what the church has taught throughout history. Associate editor Benno van den Toren asserts that all contributors in this section 'believe and argue that their understanding of the doctrine does justice to the central content of the historical doctrine and to the Scriptures while allowing for a critical dialogue with, and accommodation of, critical scientific issues' (114).

In doing so, van den Toren and others distinguish between (1) 'the universality, pervasiveness, and inherited nature of the human disposition to sinning and the unavoidability that humans therefore fall into sin' (111), and (2) whether the doctrine of original sin requires a first human/couple and the inheritance of their guilt. Yet numerous authors identify two components in the historic (Augustinian) doctrine of original sin: the original first sin of Adam and Eve [*peccatum originale originans*] and the hereditary passing on of original sin/guilt to later generations of humans [*peccatum originale originatum*] (118, 130, 176). Even though I reject the Augustinian formulation, in my opinion, theological theories that fail to include the historicity of a sinful first couple and the imputation of their guilt to all humans *do not* do 'justice to the central content of the historical doctrine and to the Scriptures.'

The chapter by C. John Collins comes closest to the traditional understanding of original sin. Acknowledging that modern genetics reveal human origins cannot be bottlenecked to only two individuals, he embraces a federal headship model and contends that 'Adam and Eve can be seen as king and queen of the initial human population' (158). Collins's concordist hermeneutic also leads him to a God-of-the-gaps view of origins with the Creator having the 'freedom to inject new things into the unfolding' of evolution (157). In mitigating the bite of Augustine's stain of original sin and condemnation of most people (*massa damnata*), including unbaptised infants, Andrew Pinsent appeals to Thomas Aquinas and understands original sin to be 'a disposition to acquire a disposition to sin' (137). He rejects the notion of the fallenness of creation and justifies that 'the absence of grace cannot be regarded as a defect of nature' (136).

In another palliation of the traditional Augustinian belief that original sin is 'an utterly malignant and catastrophic event' (162), Andrew McCoy calls on Irenaeus of Lyons and his belief that the creation was originally incomplete and not perfect, and that Adam and Eve were created immature and intended for spiritual development. McCoy emphasises Irenaeus' contention that Christ is the recapitulation of both humanity and nature. He writes, 'Christ elevates human develop-

ment toward perfection in God by restoring humanity to that which God originally intended for creation before the fall of Adam and Eve into sin … recapitulation of our humanity necessarily means redemption of creation as originally created from the beginning' (168, 170). Lastly, Christopher Hays outlines a 'non-historical approach' to original sin that is the furthest from the historic doctrine. In defending a non-concordist hermeneutic of Genesis 2-3, he rejects the historicity of Adam and Eve and their originating sin, while accepting the universality of sin in humans. Of all the contributions in this book, this chapter by Hays is the one I resonate with most.

The third and final part of the book deals with theodicy and evolution. Associate editor Michael Lloyd recognises that biological pain and death predate humans, eliminating their sin as an explanation for the existence of natural evil. But he notes, 'The problem with evolution for Christian belief has never been scientific as such; it has always been moral … why would a good God have chosen such a violent way of achieving that goal?' (210).

In magnifying the issue raised by Lloyd, concordist C. Ben Mitchell points to biblical passages that support a cosmic fall – Genesis 3:15-17, Romans 8:18-23, and by implication the renewal of a fallen creation in Isaiah 65:25 and Revelation 21:3-4. Mitchell offers no solutions, but only questions and concerns. He polemically argues that Christians who take a 'straightforward reading of the text *seriously* worry that theistic evolutionist accounts undermine the authority and reliability of the Bible' (221; my italics). Stanley P. Rosenberg in an insightful examination of Augustine's view of nature goes against the commonly received interpretation of his theodicy (e.g., John Hick) by proposing that suffering, disease, and death are not evil, but instead reflect a privation of good. In other words, 'Evil is the absence of good' and 'each created thing originally contained, and still retains, a degree of goodness' (232). Rosenberg tersely concludes, 'The physical world is not by nature evil for Augustine' (243). And Michael Lloyd defends a theodicy based on fallen angels who introduced natural evil into the world eons prior to the appearance of sinful humans. But as one whose scientific speciality is the evolution of teeth and jaws, this strikes me as a fallen angels-of-the-gaps theory. Am I to rewrite my scientific papers by removing the natural mechanisms leading to carnivorous dentitions and claim that wicked angels created vicious canines and flesh tearing carnassials?

The last three chapters on the problem of evil were the most stimulating. Richard Swinburne argues persuasively for an Irenaean pedagogical evolutionary theodicy. Natural evil offers opportunities for 'higher-order goods' to arise (283). Swinburne asserts that these goods would not evolve by 'merely allowing the suffering caused by moral evil;' instead, 'we need disease, accident, and the weakness of old age' (283). Christopher Southgate recognises the failure of fall-based theodicies and proposes a 'compound theodicy.' He first acknowledges a mysterious aspect regarding natural evil, and then begins provisionally with an 'only way or package deal argument,' supplemented with a co-suffering God and an eschatological redemption of non-human creatures (305). Finally, Vince Vitale asserts 'that our existence as the individuals that we are depends on the evil and suffering that preceded our coming to be' (308). He goes so far as to claim that 'without evil and suffering those who exist could not have lived at all' (324). Vitale also introduces a helpful analogy between divine creation and human procreation to justify evil in the world. If we have no moral concerns about bringing children into this existence with all its moral and natural evils, then we should not have any problems with a Creator us-

ing a violent and unsavory evolutionary process as his method of creation.

In closing I would like to offer some critical comments. First, a tacit (at times overt) concordist hermeneutic undergirds many contributions in this book. But the historicity of Adam and cosmic fall reflect ancient conceptualisations of nature, and most contributors seem to be unaware of this. Attempting to integrate these notions into biological evolution is equivalent to tacking on the biblical three-tier universe (e.g., Phil. 2:10) at the tail end of cosmological evolution. Second, there seems to be a form of doctrinal 'inerrancy' embraced by most authors. However, these historic doctrines were formulated during a time when geocentricity was the dominant paradigm. If we do not accept this ancient astronomy, then there is no reason for us to accept the ancient understanding of biological origins of that day, such as the *de novo* origins of humans (which ultimately derives from the ancient Near East). From my perspective, these problems are easily resolved if we identify the ancient cosmology and ancient biology in *both* Holy Scripture and Christian doctrine, and then deem these as incidental and nonessential. More specifically, we need to move beyond a historical Adam and Eve, original sin, and the cosmic fall.

Though I disagree with roughly three-quarters of the positions presented in this book, I thoroughly enjoyed reading it (three times) and found it to be extraordinarily thought-provoking. It is richly documented, remarkably readable, and offers a wide range of insightful views by many prominent scholars at the interface between Christian faith and human evolutionary science. This is a valuable contribution and I very much recommend it.

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Gillian Straine (ed.)

Are There Limits to Science?

Newcastle upon Tyne, U.K.: Cambridge Scholars Publishing, 2017. xvi+185 pp. pb. £61.99. ISBN 978-1-4438-9581-1

How far can the dialogue between science and religion go? 'Limits' is the topic which this book seeks to address, the place where the boundaries between science and religion exist, and where important questions are asked. The book is the outcome of the 2016 conference of the U.K.'s Science and Religion Forum, which brings together leading scientific and theological thinkers to reflect on key issues. The editor, Gillian Straine, as well as the Publicity Officer for the forum, is the director of The Guild of Health and St Raphael, an ecumenical organisation promoting, resourcing and researching the healing ministry. The forum seeks to promote that science and religion, when properly understood, is not in opposition, but complementary in the search for truth. This gives an indication of the perspective of the book's authors.

As with many books consisting of conference presentations, the topic range is broad and the level of treatment variable. However, the contributions are thoughtful and a stimulant for further study. The book is divided into three parts: Chapters 1-5 are contributions from invited speakers, Chapters 6-11, have some of the short paper sessions and the book concludes with Chapters 12-14 on 'transhumanism and human enhancement', 'some after dinner thoughts' and 'closing reflections'. As a further taster to the book a few of the chapters are mentioned below.

In Chapter 1, 'God, naturalism and the limits of science' (8-20), Fiona Ellis proposes a new way of conceptualising a naturalism that is beyond scientific naturalism and constructively engages with theism and Christianity. McDowell's secular expansive naturalism imposes limits on science by acknowledging values, which cannot be comprehended in

scientific terms, but by human rational evaluative processes. However, these values are devoid of any supernatural inclusion. The theistic expansive naturalism of Ellis has a broader view of nature which involves God. Here, God does not belong to a separate supernatural realm, but God is seen in all things. Leidenhag, in Chapter 2 (21-39), offers a critique of Ellis's theistic expansive naturalism with particular concerns in using McDowell's philosophy which is committed to a Wittgensteinian quietism. He suggests instead that Taliaferro's dualism would be of great benefit for furthering Ellis's theological vision. Clearly more thought is needed in this area.

In Chapter 4, 'The wild experiment: emotion, reason, and the limits of science' (61-79), Donovan Schaefer proposes an internal limit where science is woven with emotion, and not separated from it. Emotion is within the practice of science itself, for example, the capacity for interest and excitement, and the interrelationships with thought and memory are important for knowledge development. Schaefer links ideas from David Hume and William James to contemporary work on Affect Theory. Hume and James both say that 'epistemology makes emotion central to the process of organizing information systematically in the generation of science' (68). This internal limit notably opens up new grounds for limit places.

In the final chapter in part 1 (Chap. 5), 'What should Christian theology (not) learn from science? The case of the human brain' (80-100), Neil Messer looks at the human brain, a complex organ where the limits of science and the limits of religion meet. In seeking a Christian understanding of what it means to be human (theological enquiry) Messer introduces five types of approach with different contributions to the understanding from theology and the scientific study of religion: cognitive, evolutionary and neuroscientific approaches. He argues for a typology in which theology sets the agenda and critically acquires insights from science. A remark by Karl Barth is used to summarise the proposal as follows: 'phenomena of the human' are 'like an interesting commentary on a text which must be known and read for itself if the commentary is to be intelligible and useful'.

Chapter 9, 'Naturalism, the limits of science and the case for non-scientific knowledge' (131-143), also discusses naturalism. Emmanuel Nartey emphasises that there are important and irreducible characteristics of the world and experience which naturalism does not include. Furthermore, different ways of knowing, scientific and non-scientific, provide several levels of explanation and perspectives that enhance the understanding of reality. Non-scientific knowledge includes knowledge of one's own mental states, moral knowledge, religious knowledge and mathematical knowledge. The discussion correctly infers that scientific inquiry cannot establish truths in these areas, thus giving evidence of the limits of science.

Including science and religion topics in educational contexts is an important pursuit and so it was pleasing to read Chapter 11 (154-165), 'Ways to develop students' appreciation of the power and limitations of science', by Billingsley and Nassaji. An interdisciplinary workshop, 'Can a robot hear?' for students aged 14-16, is described in the chapter. Two main objectives are for students (i) to appreciate that some questions are more amenable to scientific methods than others; and (ii) to appreciate that some questions are more metaphysically sensitive than others. Survey results from before and after the workshop gave evidence of change in students' thinking about the power and limitations of science.

The insights presented in this book are extremely useful to scholars, students

and others seeking to explore the limits of the fields of science and religion, however, be aware that the philosophy is generally at an advanced level.

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Christopher Southgate

Theology in a Suffering World: Glory and Longing

Cambridge: Cambridge University Press, 2018. 290 pp. hb. £75.00. ISBN 978-1-107-15369-1

The strength of Christopher Southgate's latest monograph, *Theology in a Suffering World*, is that it tackles head-on one of the greatest problems for theology raised by Darwin's theory of evolution: how could a God who is both omnipotent and omnibenevolent employ such a cruel and wasteful method as natural selection as a means of bringing His creation into being? The traditional theological answer, of course, is that God didn't: the death, suffering and disease which bedevil both animal and human life are not the result of God's original intention for His creation; on the contrary, God's creation was, in the beginning, good, and the pain and destruction that we see are the result of the Fall of humankind.

So thought St Augustine, and so think many Christians to this day. While few would hold that this account fully resolves the problem of evil, it at least has the theological advantage of affirming that God's world was originally good and that the violence that we see is *not* God's intention for His creation: it is a good world, corrupted only by means of humankind's sinful transgression. However, as Southgate rightly shows in this book, such a view is now scientifically untenable. The 'natural evil' that we see is not the product of human sin; the findings of palaeontology and the fossil record make it abundantly clear that violence and pain long preceded the emergence of *Homo sapiens*. In fact, death of the weak is an intrinsic part of the mechanism of natural selection. Life would never have evolved without it. This much appears to be true scientifically. My key difficulty, however, lies with the theological conclusion that Southgate draws from this – and the 'answer' that he develops out of the ashes of the Augustinian theodicy.

Southgate is at great pains to stress throughout that God is good and loving. However, if the 'natural evils' that most trouble us – predation, the slow, painful death of a child suffering from cancer – were present from the beginning and are necessary for evolutionary development, then, Southgate reasons, they must perforce be a sign of this loving God's intention for the world. In God's creation, Southgate tells us, we see 'great beauty, physical intricacy and biological diversity' (1). But we also see creatures tearing each other apart and suffering chronic disease and many species becoming extinct. The evolutionary process has produced tremendous value, but what might be called 'disvalue' is inextricably bound up with the value. The aspects of nature we admire are products of the same violent processes that cause suffering. We must therefore repudiate 'any simplistic theology which associates all goodness and beauty with God and all violence, cruelty, and suffering with rebellion either by humans or some other powers opposed to God' (2). Instead, Southgate insists, we have 'to acknowledge that processes involving violence, and to which suffering is intrinsic, ultimately derive from God's creative activity'. In short: 'God seems to have *used* processes that necessarily involve violence as part of God's creative plan' (140). This is obviously deeply problematic theologically, for, as Gregory of Nyssa saw, God

and creation are morally inseparable; as such, the doctrine of creation constitutes an assertion about the nature of God in Himself. The idea that God's nature is in essence violent leaves one with a profoundly troubling view of God.

And it is not just animal pain and extinction that are essential to life, according to Southgate. The most disturbing part of his thesis is that the suffering and death of human children are also fundamental to the evolutionary process; they are, thus, willed by God. Underlying his case, of course, is the Darwinian axiom that, among any group of living things, more offspring are born than can possibly survive. Death is thus the fuel of evolution. And given that humans are as much the products of, and subject to, evolution as any other species, this means that a sizeable proportion of *human children* must suffer and die to ensure the evolution of their species.

Southgate assures us, however, that while we might find it difficult to square such a view with the notion of a loving God, the suffering of children is essential in order to drive evolution forward. To illustrate this, he offers the example of a young girl whose painful infection with malaria enables mosquitoes to reproduce and multiply. This, he informs us, is a sign of the 'intricacy and efficacy of the complex life cycle of the parasite', which '…expresses something of the fecundity and generativity of creation'. And this too, Southgate tells us, 'hard and troubling though it is to say, is an aspect of the divine glory' (143-144). *What?* The suffering of an innocent young girl 'is an aspect of the divine glory'? I'm afraid my sympathy lies with Dostoyevsky's Ivan Karamazov who protested that even heavenly paradise is not worth 'the tears of one tortured child'. As Ivan tells his brother Alyosha, if that's the price of heaven he must 'respectfully return his ticket' to God.

Southgate is acutely aware of the moral difficulties here. However, he cannot rid himself of the notion that, if violence is at the heart of natural selection, this is obviously the way God intended the world to be. Southgate is clearly in danger of committing the naturalistic fallacy: that is, confusing what *is* the case (the natural world is violent) with what *ought* to be (such violence is good because it is willed by God).

There are moments, however, when even Southgate himself seems to concede that all this is difficult to square with a loving God. This is presumably why he argues that this cruel and pitiless system was the 'only way' God could have brought this world into being. Such an assertion is, however, difficult to reconcile with Southgate's repeated insistence on God's absolute sovereignty and omnipotence. If God is indeed omnipotent, then a variety of creative possibilities must surely have been open to Him. God was not obliged to choose this system. While Southgate denies being a process theologian, tinkering with God's omnipotence in the way he does here shows that he is not immune from appropriating such ideas when it is expedient for him to do so.

One way out of this difficulty would be to posit the idea, defended by Alvin Plantinga, that creation *was corrupted*, not by human sin, but by a Cosmic (or Angelic) Fall long before the emergence of humankind. However, Southgate dismisses this as impossible on the grounds that it would involve God granting to beings lesser than Himself the freedom and power to disfigure His creation. But isn't this precisely what God did when He gifted freedom to human beings – a power they spectacularly misused to the point of killing on a cross the One Christians recognise as God incarnate? If God gave such power to humans to disfigure what He had made, why could He not give it also to angels?

For Southgate, however, we need to be 'honest'. Reality must take priority over

erroneous biblical claims. If Scripture tells us that the 'evils' we see in nature are caused by some agency other than God (whether human or angelic), then Scripture is clearly wrong. The difficulty for Southgate is that his idea of God as loving is also based on Scripture. So, if 'reality' tells us that nature is inherently cruel, and if, as Southgate proposes, such cruelty is willed by God, then, in the interests of consistency, ought we not to conclude that Scripture is equally wrong in its claim that God is loving?00

I am also troubled by Southgate's claims about the origin of human 'sin'. The innate tendency for human selfishness is not, he tells us, something which stems from 'an informed decision' on the part of the first fully self-conscious humans to defy God; rather, it is an 'entirely predictable product of the naturally evolved drives of primates in a competitive and hostile environment' (242). If this is so, however, in what sense can we follow Southgate in saying that it is Christ who 'heals' and 'transforms' the 'sin' of the world when it appears that it was Christ (as God) who endowed us with these selfish instincts?

Southgate goes on to claim that God, having created a world in which suffering is necessary, not only 'suffers with' sentient creatures, but, through Christ, goes on to 'redeem it'. This raises manifold problems. It implies a God who deliberately chooses to use a painful process to create, and then enters into it in order to share the pain that He Himself has caused.

Further, the fact that creation requires 'redemption' surely undermines Southgate's claim that the world as we see it now is as God originally intended it to be. For, if nothing has ever 'gone wrong' with creation, why does it need Christ to 'redeem' it? Is Christ 'saving' the world from the negative consequences of the system that He (as God) originally put in place? And why should humans strive to act in non-violent ways, when the use of violence has been sanctioned by God Himself?

Furthermore, can we really accept without any sense of outrage such a utilitarian view of God, one in which God deliberately disposes of innocent creatures and uses them instrumentally as means to ends? How can Southgate reconcile this with the Jesus in the Gospels who defended the weak and vulnerable, if their very exploitation is vital to an evolutionary process that He Himself put in place? What sense does it make for Jesus to protest against disease and suffering if they are, according to Southgate, an inevitable part of the system that Jesus (as God) created?

All this leaves one wondering why Southgate would wish to believe in such a perverse notion of God and what exactly it would take for him to accept that his assertion that God is loving has been disproved. Southgate's 'theodicy' surely pushes us to the conclusion that, if God uses such a cruel method to create, then it is impossible to claim that He is benevolent. Surely, then, when faced with suffering in nature, the most plausible response is to follow the philosopher Wesley Wildman and abandon belief in the benevolence of God altogether.

Fortunately, however, for those who wish to remain Christians, Southgate's deplorable picture of God and creation is not one shared by the New Testament. The Pauline and Johannine texts speak of the world as somehow under the dominion of malign powers. How we understand these powers has changed throughout history, but, as David Bentley Hart cogently argues, what is clear is that one 'cannot look at cosmic reality and see written in it the design and ends of God in a straightforward way'. The Christian claim, affirmed explicitly in Romans 8, has always been that creation as a whole is 'fallen' and is groaning in anticipation of salvation.

Let us be clear: the fundamentalist belief that there was some specific event which we call the Fall is now untenable. But Bentley Hart is surely right when he says that the myth of the man, the woman and the serpent, and other such myths, represent a kind of universal human archetype. They suggest, he avers, that deep within the human psyche there is an intuition that humankind and indeed all of creation – even in those dimensions that, in terms of cosmic history, precede the human – are alienated from God. And the nature of this alienation is, he maintains, 'impossible to understand except in the light of its negation, which is reconciliation with God'.

Perhaps we need the humility to concede with St Paul that, this side of eternity, we 'see through a glass darkly'. Our current scientific understanding of pre-human pain and suffering may yet be proved wrong. We should not, like Southgate, use it to come to premature conclusions that it is the will of a good God and therefore not an evil. Good may come out of the suffering of pain, but the pain in and of itself remains bad.

Ultimately, of course, we have to live in the face of the reality we know. But to assert, as Southgate does, that extreme pain and suffering are the will of a good and loving God so offends our moral instincts that the God of which they speak is not worth worshipping. As Ivan Karamazov concluded, the only moral thing to do is to 'return our ticket'.

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Richard Boyle

Natural Novelty: The Newness Manifest in Existence

USA: University Press of America, 2015. 260 pp. hb. £47.95. ISBN 978-0-7618-6708-1

This book seeks to find an answer to a deceptively simple question – how do new things happen? In the quest to articulate what is meant by natural novelty, and to examine its various aspects, the author has produced a work of superb erudition – a tour de force of twentieth century thinking on this issue. The task of characterising genuine novelty is an ambitious one, and the book succeeds in illustrating its many subtle and technical philosophical trappings. It is a great strength of this book that it navigates these challenges with scholarly deft and ingenuity. Novelty is rescued from more traditional paradigms that attempt to render it insubstantial, and/or dismiss it as a mere illusion. Prior assessments of newness are skilfully, and quite convincingly shown to be inadequate, and the author ventures an interesting, and dare I say, novel interpretation.

A rigorous system of notation is advanced in the early sections of the book – to facilitate the exposition. Some use is made of notation that would traditionally be associated with set theory and formal logic. Training in either of these disciplines is not necessary to understand the content, and the author does an admirable job of summarising key insights in plain English, in the text that immediately follows each exercise. For the mathematically inclined, the advantage of the notation is not so much in constructing formal proof, as in making the meaningful content of the arguments manifestly clear.

Key ideas in the work are developed in the context of evolutionary biology. The topic is explored from a fantastically broad perspective. Some attention is even directed to wrestling with the enigma of consciousness in the context of

evolutionary biology. The author draws upon his considerable expertise in the biological sciences, and upon his doctoral research in earth system modelling to produce a highly informative chapter entitled 'Life on earth'. It is refreshing that this scientific account is interspersed with fascinating references to highly relevant matters of philosophy.

The final chapters delve more substantially into the philosophical dimensions of the problem – the work culminates in a scholarly exposition, and synthesis of relevant ideas from both the continental and the analytic philosophical traditions. The profound insights into language offered by Heidegger and Wittgenstein are explored in some depth, and a striking connection is made between their contributions and the notion of novelty.

This book is impressive in terms of its scope, and its ambition. It articulates the phenomena of natural novelty in an eloquent and distinctive style. The reader is guided through the developments in the field from both a scientific and philosophical perspective. In the course of the book links are made between wildly diverse fields, including: philosophy of language, historical and natural science, epistemology, and theory of mind. The contextual embellishments are hugely informative, and make for fascinating reading.

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Mark Cosgrove

The Brain, the Mind and the Person Within: The Enduring Mystery of the Soul

Grand Rapids: Kregel Academic, 2018. 180 pp. pb. £ 15.99. ISBN 978-08254-4526-2

Mark Cosgrove efficiently manages 'to help the reader understand the issue or the science involved with the human without being too technical in [his] writing' (8). In this respect his book is a model of clarity. It opens up the rapidly changing neurosciences for its readers in a non-threatening way. It neatly turns around the 'God of the gaps' argument strategy to indicate the corresponding trap of 'science in the gaps' (19). It offers a grand tour of the neurotransmitters and brain workings (46 et seq.). It reinforces the hardness of the 'hard problem' (62). An essentially non-dualist picture of the person is acknowledged. (70, 88) There is a compassionate take on the compromised aspects of personhood in degenerative and other neuropsychological disorders, (133) wisely pointing out that God and we help bring people into full personhood. (114) Salutary warnings are given regarding transhumanist development in robotics, artificial intelligence and neuro-technology. Here, strange advances sometimes make Cosgrove wonder 'who is steering the scientific spaceship' (131). To which one might respond wryly that maybe it is often the nihilistic forces of late capitalism in pursuit of the god of profit! On the whole, though, so far so good.

Descartes' contribution to modern philosophy is commonly taken to indicate a radical separation of mind and body, generalised to that between spirit and matter. Cosgrove implicitly treats this as opening the door to a scientific naturalism, which, in the case of neuroscience (at times to be read as cognitive and affective neuroscience), has produced so much by way fascinating and beneficial goods from our ever increasing knowledge of functional neuro-anatomy, neuro-connectivity and neuro-chemistry, to neuro-psychology and the rest. But methodological naturalism need not imply a methodological, Dawkinsian or Dennettian atheism ultimately grounded in a reductionist account of mind, brain, consciousness. Instead, as the author points out, there are irreducible aspects

of mind, consciousness, persons made in the image of God, and so on, which easily vitiate the 'nothing buttery' of the bar room atheists.

The author elides the fact, however, that Cartesian philosophy has helped introduce other assumptions into our modern world-view. These include: a radical disjunction between the subjective and objective where the myth of subjective meaning and autonomy is asserted in the face of a dead materialism; a split between a voluntarist approach to the conscious and a mechanistic approach to the non-conscious; an emphasis on representational accounts of mind; a solipsistic subject ultimately trying to make sense of an ultimately meaningless world. In the resulting division of labour, we then too easily slip into hard, objective, mechanistic, third-person psychology and a neuroscience tipping into materialism, and pit these against a soft, subjective, meaningful, striving idealism. Not only have mind and brain, and body and spirit, now come completely apart, so too have nature and culture. Hence, in attempting valiantly and creatively to qualify and rebut the errors resulting from such a reductive materialism, Cosgrove's otherwise informative, useful, and sincere, monograph frequently falls into not unrelated philosophical traps. While he is most likely aware of some these dangers, there are places where the ghost still haunts the machine (39, 88), and his title is the give-away: the person is *within*. Despite the author's best endeavours in his eagerness to rightly reject a reductionist materialism, Cosgrove's person frequently retreats inside the skull and looks out at a world of mindless matter.

This may in part be because the book's argument strategy appears to be grounded in a tacit assumption and category error: namely that it is possible to bring science and Christianity into direct dialogue, without the help of a serious, critical friend: a philosophical theology deeply marinated in the Christian philosophical tradition. What might have helped Cosgrove's account in this regard is a more through application of a traditional, participatory ontology, which asserts that *all* creation, whether mind, matter, or culture, is continuously held in being by God and is charged with significance. From this perspective there really is no brute, meaningless stuff. Consciousness becomes our awareness of and co-inherence with *a world*, not of representations or information in the head (cf. 59), a fallen imperfect world, perhaps, but one still potentially revealing truth, beauty, goodness, and the grandeur of God. Nor need we be left striving in a fideistic fashion for meaning in a technocratic, sterile environment. Combined with the so called 4E approach to cognition and neuroscience, which emphasises our embodied, embedded, extended and enactive nature, a more integrated, harmonious and interconnected hierarchy of being could be explored. At the eleventh hour, Cosgrove seems to intuit at least some of this, and notes that the world of culture and artefacts, 'the obvious world around us' (170), potentially contributes much needed meaning to the study of the skull's interior – but too little and too late.

That said, this should be a useful primer for Christians struggling with their faith in the face of the seemingly relentless onslaught from scientism. For the professional scholar, however, it says as much about the culturally dominant strands of US psychology and neuroscience, and the philosophical blind-spots of certain strands of the Christian tradition, as it does for the possibility of future, deeper dialogues between science and religion.

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Roger Trigg
Does Science Undermine Faith?
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There is a widely-held belief that science has disproved religion. To many, religious belief consists of a collection of superstitions that we now know, thanks to science, to be untrue. This view is appealing because it makes much sense: religious practice often *is* superstitious and should be challenged – and the scientific method provides a powerful means to do so. Science opposes religion to the extent that religion is superstitious, and this is good. But not all religion is superstitious, and *faith* is different from religion. Does science leave no place for faith whatsoever? Some would argue, yes, and go further still: not only is the primacy of science over religion clearly true, but science provides the *only* foundation upon which a proper understanding of the world, and our place in it, can be built. This view is also compelling, but is it *true*? Does science undermine faith? This is a question that appears straightforward but, once considered, rapidly unravels. Is science the only judge of truth? If so, what is *truth*? Or, is the view of scientific supremacy a defence that is 'useful for blocking arguments and shrugging off responsibilities' as Mary Midgely in *Evolution as a Religion* has argued. If so, does science itself involve faith? Faith in *what,* then? In *Does Science Undermine Faith?* Roger Trigg starts to unpick these questions.

The book is a rapid tour of some of the (often implicit) assumptions behind the view that science supersedes faith. At only 40 pages, there is not much space for in-depth analysis. Yet, this brevity is a benefit: this is a hefty topic, and one that many readers may want to know more about, but not study in detail. The material is clearly presented and thought-provoking, and while it covers a tremendous range of topics and thinkers in brief, it is not unnecessarily philosophical. I found the discussion on the foundations of science to be of particular interest.

In mathematics we start with *axioms* – statements of self-evident truth – that are not themselves proven but assumed, and upon which all arguments are built. Religions would call them statements of *faith*. Such statements represent fundamental collective intuitions about the world that cannot be fully justified – and so are open to debate – yet are *necessary*. All systems of belief have such statements: far from being irrational, without them there is no reason, because there are no foundations upon which to build an argument. In the case of modern science these foundations are theistic and, as Trigg discusses, this fact still has importance.

The founders of modern science based its authority on the God-given ability of humanity to reason about the world as it really is. *Reason is the candle of the Lord* as the Cambridge Platonists said. This belief is the foundation upon which the scientific method was built. As Trigg notes: 'Science … cannot exist in its own bubble, but needs presuppositions that have to be grounded elsewhere. The most central of these is a trust in human reason that is not conditioned by circumstance, physiology or whatever'. Yet, (as Trigg argues) in a purely naturalistic view, where does this trust come from? If as a by-product of a naturalistic evolutionary process, as is a reasonable assertion, then there is no basis to trust human reason and therefore no reason to trust science: 'We may accidentally have hit on the truth, or not'. This argument is important because it shows how foundational beliefs can be carried unconsciously. It is also important to note that the argument is not against evolutionary theory per se, but rather on a purely naturalistic basis for our trust in reason.

The notion that 'Science … cannot exist in its own bubble' was a theme that I would have liked to see explored more. There is a tendency in Western society

to romanticise science as a pure pursuit of truth, that stands alone from other human endeavours. In fact, science is a much more practical matter. It is usually a social endeavour – performed by groups of individuals with the same biases, ambitions and flaws as everyone else – and, nowadays, a career. Most of the work of career scientists has little to do with abstract notions such as the pursuit of truth, or the tension between science and faith. Indeed, most scientists don't have the time to even begin pondering such notions at work; they are occupied with more pressing matters such as managing their staff, writing reports, and getting ahead in their careers, the same as everyone else. The very notion that science might be a means to truth is itself a relic of a simpler, more religious time. Roger Trigg's book is a reminder that nevertheless this is the case: truth can be found by both science and faith, and the search for truth is most effective when they work together.

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