

## Reviews

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**Christopher M Rios**  
***After the Monkey Trial: Evangelical Scientists and a New Creationism***

New York: Fordham University Press, 2014, 260 pp. hb. \$45. ISBN 978-0-8232-5667-9

This book sets out the history of the American Scientific Affiliation (ASA) and the Research Scientists' Christian Fellowship (RSCF; now Christian in Science, CiS) from the perspective of their internal debates about creation. It concentrates on the period from the Scopes' trial in the mid-1920s to the mid-1980s and should therefore be read alongside Malcolm Jeeves and Sam Berry's article on the history of CiS in this issue of *S&CB*. The book contains six chapters that follow events from Darwin to 1940; 1940-1965 and 1965-1985, with alternate chapters featuring developments in the US and the UK. It provides a historical, rather than a detailed theological perspective, describing the major guiding principles and disagreements.

I found this to be a fascinating read and it introduced me to some of the leading voices and their arguments from the mid-twentieth century (though I sometimes found it difficult to keep track of who was who). Prominent names from the US included Bernard Ramm, Richard Bube, and Walter Hearn, while in the UK, Oliver Barclay, Donald McKay and Reijer Hooykaas played major roles in guiding the scientific, theological and philosophical discussions. Reading this book made me even more grateful for the scientific and theological foundation that these people displayed in defending mainstream science while maintaining a strong evangelical Christian belief in the authority of Scripture.

Needless to say, the different views of how to interpret the early chapters of

Genesis are a main feature of this book. Developments from young earth (six day) creationism, old earth creationism and various forms of concordism were all discussed by the ASA and RSCF before arriving at the present consensus on evolutionary creationism (theistic evolution). All the protagonists in the debate were of course agreed that God is the Creator but, as today, the word creationist has been hijacked (at least in the public perception), by those who take an anti-scientific view.

I was fascinated to learn about the different historical contexts in which the ASA and RSCF were established. The ASA initially appears to have adopted traditional (antievolutionary) evangelical views of geology and evolution and attempted to reconcile science and conservative Christian biblical interpretation against what they saw as the dangers of modern science (*i.e.* evolution). Over time, discussion and sometimes heated debate, this transformed into the present general acceptance of evolution as providing the mechanism by which God worked. In contrast the RSCF, which had close links with IVF (now UCCF), was less concerned with particular scientific issues than about the difference between theism and naturalism. For the RSCF, the problem was the way that science was (and still is) used to justify philosophical materialism. The RSCF at the outset directed its energy towards the scientific community and as an apologetic body for exploring Christian views of science for the benefit of both the church, on issues touching theology and mission, and the scientific community, establishing the compatibility of Christian faith and mainstream scientific views.

In the UK the strong leadership of Oliver Barclay and Donald MacKay is apparent, though they also encouraged both open discussion and the reading of

a breadth of scientific and theological literature. I was impressed to discover that the reading material for early RSCF meetings was circulated in advance, leaving most of the meeting time for open discussion. This format seems to have encouraged a level of dialogue that is rarely achieved even today, though I wonder how it would work in today's busy culture.

This book is worth reading because, although the cultural setting has changed, the issues and questions are still with us. What role can science play in biblical interpretation, what does it mean to say that the Bible is authoritative (does it contain scientific errors), what does it mean to be made in the image of God, what is the fall and original sin? How does God act in the world; can evolution and miracles be equally attributed as God's work? The primacy of the Bible in Christian Belief is a given in evangelical belief; the issue was (and still is) not whether the Bible is the inspired word of God, but how it is so; not whether it contains eternal truth, but how it does so and how it remains relevant in a scientific culture.

Sadly, the public imagination still sees a conflict between science and religion. As Rios points out, Church leaders (especially in the US) often refer to Ken Ham, of *Answers in Genesis*, rather than, say, Francis Collins, while some vocal atheist scientists claim that science makes religious belief unnecessary or deluded. The issues have not gone away and this is therefore a helpful contribution, which one hopes may help to stop history from repeating itself.

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**Christopher Southgate (ed.)  
*God, Humanity and the Cosmos*  
– *Third Edition: A Textbook in  
Science and Religion***

London & New York: T&T Clark  
International, 2011. 501pp. pb. £27.99.  
ISBN 978-0-567-52467-6

I reviewed the second edition of this book for *Science and Christian Belief* (2008) 20, 115, and said then that I was happy to recommend it to readers of this journal. Having read the third edition I have no reason to change that recommendation. The third edition has new additional chapters, 'The new atheism', a helpful addition, and 'Climate change: engaging theology with science in society', and the other chapters have been updated, as have the references. In my previous review I noted the lack of a chapter on climate change, so it is good to see that that important topic has been added. The exercises for the reader that were in some of the chapters of the previous edition have been dropped and this is no great loss. The notes at the end of each chapter have become footnotes, but the useful suggestions for further reading remain. This makes the book only 29 pages longer than the previous edition. Only one new contributor (Geoff Dumbreck – *Psychology and theology*) has joined the writing team.

That said, there are a number of issues that I would want to raise regarding the book's content. As noted in its title, the book is essentially a textbook, but nevertheless still useful for the general reader. The downside is that while it is a good introduction to many aspects of the science and religion debate it lacks detail on some topics. One less good aspect of the book, which I noted in my previous review, is that the depth of treatment of topics varies from chapter to chapter so readers may get a distorted impression of the importance of some topics relative to others.

With regard to the new chapter on climate change, I found the treatment

of the science disappointing and no up-to-date references are given. The Bibliography contains a reference to Sir John Houghton's excellent book on global warming, but only to the 1994 first edition (the fifth edition is due to be published this year). Likewise there seem to be no references to the IPCC reports published in 2007. It seems an omission that the science of global warming is not treated better. Explaining the science would have been a better use of space than the discussion of the so-called scandal of 'Climategate' at the University of East Anglia. Any religious response is predicated on having a good understanding of the science of climate change, so I think a more helpful chapter could have been written. As this is a fast changing area (with the latest IPCC reports appearing in 2013/14) this chapter is in need of a good overhaul (the UEA affair being a faint memory already).

The rapidly expanding nature of some areas of science is also a challenge to a book like this one. For example, the fast developing field of epigenetics is not really considered. Likewise there is little discussion of dark matter and none (that I could find) of dark energy, despite the fact that they are now thought to account for about 27% and 68% of the universe respectively (the remaining 5% being ordinary matter). Geo-engineering, as a response to climate change, is not discussed though this is an ethically challenging topic in science and engineering. A final area that should be included in a future edition is the search for exoplanets, a current scientific 'hot topic' as more exoplanets are being found on an almost daily basis. The theological implications of the possibility of sentient life elsewhere in the universe should be explored.<sup>1</sup> The latter

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<sup>1</sup> Interestingly, this issue is the topic of a recent novel by Michael Faber, *The book of strange new things*, which has been nominated for the 2015 Arthur C. Clarke award

topic is mentioned in the final chapter 'A look to the future' as a possible new theological project.

To conclude, while I continue to be happy to recommend the book, my view is that any future revision of the book will probably need a more thorough overhaul, with some changes to the writing team, if the next edition is to prove as useful in the future as the editions to-date have proved to be. After all the first edition was published in 1999 and the temptation with revising is to tweak things rather than to start from scratch and take a fresh look at the subject.

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### **John Hughes (ed.)**

#### **The Unknown God: Responses to the New Atheists**

London: SCM, 2013. 110 pp. pb. £12.99.  
ISBN 9781610975797

This edited collection provides a remarkably succinct and entertaining *tour d'horizon* of the most penetrating and sophisticated responses to the New Atheists advanced in recent years. The context is a homiletical one, so the reader should not expect to find much in the way of engaged scholarly disputes: the contributions are, on the whole, very brief and compressed. Still, given that almost every contributor is the author of book-length versions of their arguments elsewhere, this is a shortcoming that can readily be forgiven. Thus Terry Eagleton's elegant arguments against the New Atheism as a sociological phenomenon in Chapter 1 is taken up elsewhere in *Reason, Faith, and Revolution*

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for the best science fiction novel published in 2014.

(2009). Likewise, Conor Cunningham's arguments in Chapter 4 against the devastating implications for rational thought itself of cutting evolutionary science to the cloth of metaphysical naturalism, he made with considerable erudition in *Darwin's Pious Idea* (2010). And, of course, David Bentley Hart's characteristically sharp demolition of the New Atheism is developed more substantially in *Atheist Delusions* (2009) and *The Experience of God* (2013). By the same token, those who are already familiar with these books are unlikely to find anything new in the presentation of them in this anthology.

In short, the collection is a convenient one-stop showcase of theologically and philosophically astute repudiations of the New Atheists. Despite the breadth of intellectual background of the contributors, certain central themes do emerge: that the New Atheism is, in ideological terms, the counterpoint to religious fundamentalism; that the regular invocation of a simple-minded opposition between 'faith' and 'reason' is executed in total ignorance of how these complex terms are actually employed at different stages in intellectual history; that there is in fact very little of novelty or originality in the New Atheism; that the variety of atheism is fixed by the range of religious traditions they reject; and, finally, that the New Atheism is the predictable – even inevitable – sociological outcome of a culture as addicted to consumerism, the cult of celebrity and the sheer gratification of desires as our own.

There are no lowlights in this volume, but some of the arguments are made with particular freshness and originality; indeed these are the contributions that cover different ground from what their authors have argued at greater length elsewhere. In Chapter 4, Conor Cunningham continues his case against the compatibility between metaphysical naturalism and a credible philosophy of mind or a minimally realist moral ontology. His arguments have a transcen-

dental shape to them shared by similar versions of what is sometimes called the Argument from Reason by Arthur Balfour in his Gifford Lectures (published as *Theism and Humanism* in 1915), by G.K. Chesterton in *Orthodoxy* (1922), and most famously perhaps by C.S. Lewis in Chapter 5 of *Miracles* (1947). The basic idea is that evolutionary theory, when seen through the prism of metaphysical naturalism, undercuts any epistemic warrant for holding his beliefs to be true. If our minds are *strictly* identical to our physical brains, then what significance could we attach to the content of this or any other thought? Why suppose that survival benefit is logically conducive to truth-seeking faculties? The argument is a variation, in other words, of Alvin Plantinga's well-known evolutionary argument against naturalism; but Cunningham succeeds in breathing fresh life into it, not least by peppering his polemicisms with a rich array of allusions to patristic and continental thought.

A second highlight is the energetic jeremiad from David Bentley Hart in Chapter 9, lamenting the almost wilfully ignorant and casual attitude towards the complexities of a particular field of intellectual inquiry. As he and others observe, nothing in the expositions by the New Atheists of straw-men snapshots of strategies employed in natural theology shows any sign that they have misunderstood arguments, arguments that after all *continue* to be debated after centuries with a considerably greater degree of conceptual sophistication than any we might find even in New Atheists with philosophical training. Similarly, in the context of the discipline of historical inquiry, when pressed on their self-evident ignorance of the intellectual positions of the great monotheistic traditions, several New Atheists almost express a delight in confessing to their ignorance of an inquiry they believe to have no content. But as a rule, New Atheists do take a very careful interest in questions about

the historical past when these involve showing monotheistic belief in a negative light. Indeed (if I am not mistaken) the *entirety* of Christopher Hitchens's *God Is Not Great* rests on the glaringly fallacious premise that the *truth* of a set of belief commitments could logically depend on the *behaviour* of the people who hold those commitments. Hitchens never tells us what underwrites the inference from the premise that people who believe in God do bad things – even in God's name – to the conclusion that the content of their belief is false. The inference fails, and with it the bulk of Hitchens's supposedly intimidating case against the rationality of theistic belief.

Cunningham and Hart crown what is a continually engaging anthology of informed responses to the New Atheism. The homiletical genre enhances the readability, even if those with a deeper interest in the theoretical failings of this phenomenon are likely to be familiar with the moves taken by the collection's contributors or, if not, will probably want to turn to different sources. But as a compressed display of the calibre and variety of critiques of the New Atheists, this volume will serve very well indeed.

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**Mark Harris**

***The Nature of Creation: Examining the Bible and Science***

Durham: Acumen, 2013. 213pp. pb.  
£16.99, US\$29.95. hb. £55.00, \$90.00. ISBN  
978-1-84465-725-4 (pb) 978-1-84465-724-7  
(hb) (also available in Kindle format)

This is a well-written and engaging book that sets out to bring biblical studies and science together to allow the living God to speak into our critical and modernist framework (13). Harris begins with a brief consideration

of relevant scientific ideas (Chap. 2), including space, time and matter, the laws of nature, and the scientific accounts of beginnings offered by big bang cosmology and evolutionary biology. He then examines the two Genesis creation texts in some detail (Chap. 3), drawing out the complex multifaceted layers of meaning in these texts and cautions against prioritising modern science as a hermeneutical key, as well as against the tendency to want a single incontrovertible answer as to how to read each text. Chapter 4 considers creation motifs in other biblical texts, including the New Testament, giving particular attention to the poetry of the Psalms and creation themes in biblical Wisdom literature (including the Apocrypha), and the close link between creation and the person and work of Christ in the New Testament. Harris then considers the connection between the biblical creation motif and the Trinitarian doctrine developed by the Early Church, before concluding that biblical creation material is perhaps better read as theological articulations about the *nature of God* (79, emphasis original) rather than about the world.

The following two chapters explore ways of understanding the biblical creation texts from a scientific perspective (Chap. 5) and a theological one (Chap. 6). Harris cautions in Chapter 5 against trying to separate natural from supernatural in Biblical texts and against viewing the ancient Hebrews as primitive compared with modern scientific societies. He then brings biblical and Rabbinic conceptions of first, time and then, space into conversation with the latest developments in physics, including quantum theory and the possibility of multiverses. Chapter 6 explores two theological concepts widely used to refer to God's creative activity, namely *creatio ex nihilo* and *creatio continua*. Harris asks whether science can shed light on these and then considers whether either is anticipated in the biblical witness. He cautions against the

danger of anachronistic readings and trying to equate theological categories with specific scientific models, but nevertheless considers that both concepts can be helpful in thinking through contingency in its various aspects.

Chapters 7 and 8 grapple with the thorny problem of sin, suffering and evil. Chapter 7 returns to the biblical account of creation and the second (Yahwist or J) creation account in Genesis 2-3, because of the importance of this text in post-Darwinian science and religion discussion. Harris discusses the problematic doctrine of the Fall and its relation to evolutionary biology, including key theological questions such as the problem of evil and the achievement of Christ's death on the cross. He grapples with the meaning of Paul's statements about sin and death in Romans 5 and highlights the fact that much of the traditional Christian understanding of the Fall is drawn from Augustinian rather than Pauline theology before suggesting that the question of so-called 'natural evil' must be addressed alongside human evil. Chapter 8 takes us into this territory, and Harris examines the problem of pain and suffering, including the 'shadow side' of evolution, before considering whether the redemption of creation, and in particular the suffering of Christ, offer any kind of solution. After a discussion of Irenaeus' vision of creation, whereby the creation was never perfect but was fit for purpose and intended to grow towards perfection in the eschatological future. (160)

The last full chapter explores first scientific and then theological models for understanding the end of the earth/universe, with the majority of space devoted to discussion of biblical and theological eschatologies. Drawing on the notion of *creatio ex vetere*, Harris highlights both the metaphorical nature and the subtleties of biblical eschatological texts, which are characterised by hope and faith and a moral dimension that can never be shared by sci-

ence. The concluding summary (Chap. 10) attempts to bring the preceding material together by suggesting that the three creation 'categories' of *ex nihilo*, *continua* and *ex vetere* are one creative action that point to both the unity and the diversity of God. The categories are reflective of the Trinitarian nature of God though not to be identified with individual persons of the Trinity. A Trinitarian view of creation emphasises the relational aspect of all creation as well as highlighting that the role of the Son of God in completing and perfecting creation is intrinsically tied up with his creative and redemptive activities.

In this rich volume, Harris covers a wide range of complex and often controversial issues that arise when we try to relate the Bible to modern science. He does so in a way that is sympathetic to the concerns of conservative Christians yet drawing attention to the interpretive problems that traditional viewpoints often adopt unquestioningly. Having highlighted the complexity and ambiguity of the biblical material, Harris offers a subtle and fully Trinitarian account that by no means solves all the problems, but that enables a constructive engagement with science. This is a book worth reading and pondering.

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### **Peter S. Williams**

#### ***C.S. Lewis vs the New Atheists***

Paternoster (Authentic Media, Milton Keynes), 2013. 275 pp. pb. £12.99. ISBN 978-1-84227-770-6

This book is a distinctive addition to the range of Christian responses to the writings of the new atheists including Richard Dawkins, Sam Harris, Daniel Dennett, Victor Stenger and Christopher Hitchens. Peter Williams's strategy is to review and challenge their views

with special reference to the writings of C.S. Lewis and his pilgrim's regress from atheism to theism and Christianity. Lewis's expertise was primarily in philosophy and literature, although his writings have had a profound and positive effect on many scientists – for example Francis Collins. (The present reviewer would want to acknowledge with gratitude the debt he owes to Lewis.) Williams is also a philosopher rather than a scientist. The emphasis in this book is very much on philosophy, rather than on science, and it seems to me that it is not aimed specifically at the readership of this journal. His chapter on the positively blunt sword of scientism is perhaps the most relevant, though again the emphasis is on philosophy rather than science. Where there is specific interaction with some scientific issues, Williams's sympathy with the intelligent design movement is evident, but not obtrusive.

Following two introductory chapters analysing and critiquing both the development and basic ideas of the new atheists, and exploring the relevant development of Lewis's thoughts relating to atheism, there are four chapters in which each of four central arguments for God are discussed in more detail, bringing Lewis's incisive comments to bear on current controversies. First, he explores the argument from unfulfilled desire, the sense that we have of longing for something which cannot be fully satisfied by any purely physical experience, but points beyond, in fact to the supernatural. Secondly, he examines the argument from our belief that reason can be trusted, that our mental processes are related to issues of truth; and asks how they can be trusted if they are purely the consequence of irrational material processes. Thirdly, he deals with our fundamental moral sense; that when we protest about the injustice of the world and senseless evil, we actually feel that our moral judgement has a genuine basis; whereas if we reject any idea of absolute moral values, we really

have no right to make such a protest. Finally he deals with arguments about the person of Jesus, and the impossibility of regarding him simply as a good teacher. In each of these chapters there is a detailed interaction with the arguments of the new atheists, and relevant and eloquent quotations from Lewis are brought to bear, though perhaps inevitably there is a certain amount of repetition, with some of the Lewis quotations appearing a number of times in different chapters.

With these reservations, I recommend this book as a stimulating and informative contribution. It is very fully referenced, not only to written material but also to a wide variety of video, audio and web based material. I am grateful to have read it, and will regard it as a useful resource. As someone with no formal training in philosophy I found it accessible and understandable; but I am not qualified to offer a formal philosophical critique!

**Paul Wraight has retired from teaching physics and engineering at the University of Aberdeen, but maintains his interest in design and related issues.**

**Ruth M. Bancewicz**  
***God in the Lab: How Science Enhances Faith***

Monarch Books, 2015. 256pp. pb. \$8.99.  
ISBN 978-0-85721-568-0

The author Ruth Bancewicz, a former research biologist and currently a Senior Research Associate at The Faraday Institute for Science and Religion, has contributed significantly to the conversation between Christianity and Science over the past decade, especially with the production of the excellent 'Test of Faith' website and resource materials. As she explains in the first chapter of *God in the Lab*, this current book represents an attempt to start new conversations about the interface between science and faith, rather than

simply responding to common issues raised. The book is the final output of a Templeton Foundation-funded project, which also included her blog *scienceandbelief.org*.

The provocative subtitle of the book, *How science enhances faith*, sums up the author's goal in writing. Here we go beyond a discussion about how science is consistent with faith and how it is possible to be a scientist and a Christian (still a radical idea for many), to how science and faith can actually mutually benefit one another. In that regard, the subtitle could equally be 'How faith enhances science'. The journey the author brings us on, which she clearly is very passionate about, is to firstly understand how scientific research works at the coal face, then to succinctly explain how science and Christianity fit together for her, before launching into more innovative areas of thought around how imagination, creativity, beauty, wonder and awe typify both science and Christianity. The style of the book is similar to some of the author's blog posts, being personal and conversational, which works well since much of the content is drawn from interactions and conversations with research scientists who are Christians.

Chapter 2, 'Life in the lab' was fascinating. The author suggests 'Practising scientists may wish to skip this chapter', (13) yet as a practising scientist I found this one of the most interesting parts of the book, as it describes very accurately how day-to-day research works in a modern science lab, with lots of interesting insights from Dr Harvey McMahon about ideas and thought processes that underpin his approach to research as a Christian. I think other research scientists will also find this chapter highly interesting, as much as a 'compare and contrast' exercise with one's own approaches as a very successful exercise in explaining how a research lab functions. For anyone from a non-science background wanting an insight into how research actually

works, this is excellent material.

The main themes of the book are covered in Chapters 4 to 8: Creativity, Imagination, Beauty, Wonder and Awe. In each of these chapters, the author carefully weaves together her own personal insights, historical perspectives, biblical content and quotations and thoughts from specific interviewed scientists, which gives a well-rounded picture of how these topics are critical to both good science and good theology. There is a logical flow to the order in which they are dealt with too, and each chapter builds on insights from the previous one, which does lead to a sense of arriving at the heart of the author's thesis once one gets to 'Awe'.

As might be expected, covering such vast topics in such a short book does make some of the sections feel incomplete, or to be just scratching the surface. For me an example of this was the section on 'God and Imagination', (105) which very briefly began to address the idea of how using our imagination is a reflection of being made in the image of God, before it wound up. But the goal of the book is not to be comprehensive, but to be provocative and to initiate new conversations about science and faith, a goal that the book definitely does achieve. For those wanting more, there is a good bibliography included, too.

I found the final chapter (Chapter 9) an excellent succinct synthesis of the ideas discussed in the book and a helpful summary of the journey that the author has brought the reader through. In fact I would recommend that this chapter be read first prior to launching into the book, as a compass for the journey ahead.

Overall I found the book highly readable, although at times it took me a while to 'catch up' with the author's thinking or thought structure on the more abstract topics such as imagination and wonder, probably due to the fact that although we all think about

such topics, it is still quite rare to read about them in the context of science and faith intersecting.

This book will appeal to a number of audiences, both young and old, academic and non-academic, which is one of its great strengths. For example, practising Christian research scientists will draw encouragement and inspiration from the personal insights of fellow Christians working in the sciences. Also, those outside the sciences who desire to understand the motivations of Christians involved in research. I hope it will also be read by both scientists and non-scientists who believe that there is a conflict between Christianity and science, and if so such readers will be challenged by how comfortable Christian scientists are expressing their faith through their scientific research – a faith that enhances science rather than co-existing uncomfortably with it.

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### **Tom McLeish**

#### ***Faith and Wisdom in Science***

Oxford University Press, 2014. 284pp. hb. £18.99. ISBN 978-0-19-870261-0

Think of a world, says McLeish, in which music were dead. Few people read music; nobody goes to concerts; and, to be honest, the only reason it still exists at all is that it is economically valuable. Academic experts study a so-called ‘sonology’, but all life and joy in music has been lost. This, says McLeish, is the crisis facing science. And yet, paradoxically, modern science holds a position of huge cultural power; as Angela Tilby puts it, ‘like priests in a former age, scientists seem to guard the key to knowledge’. (8) The fundamental question that McLeish therefore sets out to answer in *Faith and Wisdom in Science* is: what is science for?

First, though, a word on what McLeish’s book is not. It is not about science and theology. For those who find the science and religion debate quite stale, it is, in fact, a rather welcome breath of fresh air. The key move, argues McLeish, is to re-frame the relationship by swapping the conjunction: we shouldn’t talk about science *and* theology, but about a theology *of* science and a science *of* theology. Neither is the book a theodicy. McLeish’s centrepiece is a detailed exposition on the book of Job and he does mention the question of Job’s unmerited suffering, but he doesn’t aim to prove the existence of God in spite of it. Instead, he is concerned with the broader question of how humankind can be reconciled to the ‘sheer inhuman otherness of matter’ (to quote George Steiner). (23) And thirdly, the book is not a natural theology. What McLeish in the end proposes is that we look at nature with God, rather than look for God in nature.

The text is dense, rich with intellectual anecdotes, and wide-ranging. Having laid out his project, McLeish switches between scientific stories and biblical exegesis. In chapter two, he uses a series of scientific vignettes to highlight the very human side of science—the ups, the downs, the breakthroughs, the pitfalls and the personal journeys of the scientists themselves—whilst chapter four outlines our scientific understanding of a few specific natural phenomena. Meanwhile, chapters three, five and six chart the course of the natural world as it is referred to in the Old and New Testaments, particularly focusing on a ‘nature trail’ through the book of Job.

The real climax, though, comes in the final two chapters, which McLeish builds up to throughout the book. At this point it is helpful to summarise the diagnosis so far. Science, or at least the public perception of it (and in some cases the practice of it), has become deeply inhuman. McLeish finds ‘no room for a clinical, monolithic, scientific methodology of established fact and proof, to the

exclusion of the human values of doubt, faith and belief'.(166) What is more, 'the wisdom to use [science] does not seem to come with the package'.(7) Too often, says this analysis, science has become either the preserve of apparent boffins or a commercial tool for the greedy. It seems, therefore, that we have some serious problems with what science is and how it should be used.

McLeish's solution, in chapter seven, is his *theology of science*. He identifies, in the book of Job and elsewhere, 'an ancient recognition of the unpredictable aspects of the world—the whirlwind, the earthquake, the flood' (105) and suggests that science is the very human process by which we might become reconciled to them. 'A theology of science... situates our exploration of nature... within a Christian theology, the grounded outworking of the ministry of reconciliation between humankind and the world.'(209) In other words, the principal purpose of science is to contribute to healing our broken relationship with the world—and, for that matter, our broken relationships with each other.

In the last chapter, McLeish explores the ramifications of this proposed purpose for science. He talks about science as a bridging point in inter-religious dialogue, and the way in which his thesis might go some way towards mending an increasingly fractured academy. This also leads to some fairly strong criticism of recent obsessions with research metrics; not only do such measures sway the course of research towards the purely instrumental—which, as McLeish highlights, is really the business of technology rather than science—but it also creates an unnecessarily bureaucratic environment in which creative thinking is rarely given rein to flourish.

So, is the argument persuasive? McLeish's critique of the dehumanised nature and cultural supremacy of modern science is urgently needed, but

his remedy in this instance is specifically Christian. As he rightly notes, the Christian tradition furnishes him with ample resources to prove the point, but, to gain traction in wider society, one wonders whether similar, non-Christian responses exist—indeed the brief reference to inter-religious dialogue suggests that McLeish may well think that this is the case. This also relates to a second concern: who is going to listen? If the thesis is to take root, then it must cross traditional disciplinary and confessional boundaries. Policymakers, funders, religious leaders and academics of all stripes—to name just a few—should all read this book. Let us hope that it gets the wide-ranging audience it deserves.

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**Dick Swaab**

(transl. from the Dutch by

**Jane Hedley-Prole)**

***We Are Our Brains – From the Womb to Alzheimer's***

London: Allen Lane, 2014. 448 pp. hb.  
£20.00. ISBN-13 978-0241003725

At one level this book can be read as an entertaining romp through the highways and byways of clinical neuroscience, complete with the kind of entertaining accounts of brain dysfunction which help to maintain the attention of first year undergraduate medical students. In fact for much of the book I remained under the impression that the text must indeed be based on the notes for such an undergraduate course. It was only well into the book upon reaching page 383 that I discovered that in fact the book is based on a series of newspaper columns that the author published in the Dutch newspaper *NRC Handelsblad* in response to readers' questions. That helps to explain the

somewhat racy and opinionated style, the repetitious nature of some of the material and the campaigning against the author's pet hates, upon which more below.

The book certainly covers a wide range of brain topics of contemporary interest: there is good material on pre-natal and post-natal brain development, and what can go wrong in response to genetic and environmental inputs. Puberty, love and sexual behaviour receive plenty of attention; there are helpful and stern warnings against drug addictions and boxing and the damage they can do to the brain; and some interesting material on aggression, autism, schizophrenia, Alzheimer's Disease and much else besides.

A weakness of the science is the lack of citations, excepting the author's own papers, which are cited liberally. The problem with this is that some of the author's papers are quite dated and the reader is not introduced to the newer findings that might have introduced greater nuance into the discussion. Another problem is that in some cases no one else has been able to reproduce the author's original findings. A case in point is a paper published by the author's research group in 1990<sup>2</sup> which reported various differences in the brains of homosexual and heterosexual men. But other groups have been unable to reproduce these findings.<sup>3</sup> Inclusion of such 'failure-to-replicate' studies in *We Are Our Brains* might have helped the reader to reach more judicious conclusions.

Unfortunately such sloppy and imbalanced scientific reporting is rife throughout the book once one gets past the sweeping generalisations to the

detail. Just one example is mentioned here to make the point. On page 61 the author states that sexual orientation is 50% genetically determined..., the context clearly indicating that it is the heritability of the trait which is in mind. But heritability values do not entail such a conclusion. Heritability, not to be confused with 'inheritance', is a population statistic which does not apply to individuals, and refers only to the proportion of variance in the population that can be ascribed to genetic variation in that population. Heritability values for same sex attraction have been reported in the range 30-50% in men and 8-50% per cent in women. A proportion of variance in a population cannot 'determine' anything. Unfortunately the author makes the same error with regard to heritability on page 275 where the claim is made that spirituality is 50% genetically determined – which is nonsense. The author quotes approvingly from Charles Darwin in the front of the book: 'False facts are highly injurious to the progress of science, for they often endure long.' Indeed so, but perhaps the main problem in the present volume is the half-truths or the scientific speculations presented as if they were already facts.

The author has an antipathy to religion and a disbelief in free will. The author's main rant against religion (and it is a rant worthy of a Dawkins text) comes in Chapter 15 entitled 'Neurotheology: The Brain and Religion'. The Chapter is a mixture of dodgy statistics, assertions without evidence and cheap jibes. The author even seems to believe in the 'God gene' as promoted by Dean Hamer, a notion that no academic geneticist takes seriously. The chapter is, as you might expect from this type of genre, replete with brain scanning data from Carmelite nuns and tales of religious experience linked to temporal lobe epilepsy. No doubt it all once made entertaining copy for the readers of *NRC Handelsblad*, but the chapter is not a good advertisement for the idea

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2 Brain Research 537, 141-148.

3 See for instance Byne, W. et al. (2001), *Hormones and Behavior* 40, 86-92, and Lasco, M.S. et al. (2002), *Brain Research* 936, 95-98.

that scientists are those who carry out objective, evidence-based investigations.

Another bugbear of the author's is the notion of free will. In fact his strident materialistic philosophy opposition to the idea of free will and commitment to an absolute determinism, makes the writings of Sam Harris seem quite mild by comparison. Here is a sample: 'Our behaviour is determined by birth'; (327) 'We approve of things or reject them, not because we have thought about the matter so deeply but because we cannot do otherwise'; (328) 'We aren't free to decide to change our ... religion.' (386) and other similar comments besides. Not only does the author not believe in free will but he is also a fatalist. In fact in reading this text one gains a strong impression that he is a secularised Dutch ultra-Calvinist. In this respect the author departs sharply from the convictions of his fellow-materialist Richard Dawkins, who famously wrote at the end of *The Selfish Gene* that 'We, alone on earth, can rebel against the tyranny of the selfish replicators.' For Dick Swaab, rebellion is apparently not an option, yet the evidence that people do as a matter of fact change their religion is so clear and so obvious that it is puzzling as to how a scientist interested in evidence could possibly make the claim that 'We aren't free to change our...religion.'

Overall, it is unfortunate that the author uses the popularisation of brain science in the present volume as an excuse to mount a metaphysical hobby horse from which he rails against the evils of religion and the illusion of free will. These defects, together with some sloppy science reporting, entail that this book cannot be recommended. There is, in any case, a great outpouring of other popular books on brain science at present, most of them considerably more accurate and philosophically more astute than this one.

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**Celia Deane-Drummond**  
***The Wisdom of the Liminal:  
Evolution and Other Animals in  
Human Becoming***

Grand Rapids, MI: Eerdmans, 2014. 317 pp. pb. \$23.99. ISBN: 9780802868671.

Celia Deane-Drummond has produced another important work for those interested in science and religion. *Wisdom of the Liminal* is an ambitious attempt to describe human nature in the context of humanity's enmeshed and entangled relationships with other creatures. Deane-Drummond's primary interactions are with a broad spectrum of evolutionary scientists, and theologically with Aquinas and Hans Urs von Balthasar.

The first chapter sets out Deane-Drummond's project against other literature in theological anthropology, particularly emphasising the place of theo-drama in her account. She also expresses her desire to maintain human distinctiveness, which she believes is most helpfully discerned in light of thoughtful encounter with other animals. (42)

Following this introductory chapter, there are six chapters comparing human to non-human animal traits in areas that have commonly been contentious in the discussion of human uniqueness: reason, freedom, morality, language, sociality and justice.

The overall aim of the work is to show that the boundaries between human and non-human animals have become increasingly blurred by scientific discoveries. The ever-expanding liminal space between humans and non-humans calls for wisdom in ethics and theological definitions. While these latter topics are not explored in this monograph, Deane-Drummond promises they will

be covered in forthcoming work.

'Human reason and animal cognition' focuses primarily on Deane-Drummond's argument that Aquinas emphasises the continuity between human and non-human intelligences, while also allowing a distinction: humans can direct intellect and will towards divine ends in a way that other animals cannot. (88) Deane-Drummond also points out that Aquinas's account of animal reasoning is closer to the views held by scientists today than has been accounted for. (72)

'Human freedom and animal agency' teases out the complexities of freedom and considers these in light of studies on human cognition, levels of intention and theory of mind. 'Human morality and animal virtue' argues that instead of judging non-human behaviour by human moral standards, non-human behaviour should be considered in light of the contextual morality of the species being studied. Deane-Drummond illustrates her suggestion through highly engaging work on the relationship between humans and hyenas.

'Human language and animal communication' challenges some contemporary theories on the emergence of language by relying on the work of anthropologists who situate the emergence of language far earlier in human evolutionary development than previously thought. The author shows how this allows for an emergence of language shaped by awareness of and communality with other animals. (190)

'Evolving social worlds' traces themes of cooperation, conscience, niche-construction theory and the sociality of the Trinity through the lens of an improvised and responsive theo-drama. A favourite section is when, in the discussion of human social worlds, Deane-Drummond uses the behaviour of evolutionary theory researchers themselves as her case study! (206-207)

'Human justice and animal fairness' sets human justice in biological

grounds through Aquinas's account, which Deane-Drummond associates closely with Aristotle's views. The final chapter explores the drama of kinship, investigating how the emergence of altruism and love are present in the theo-drama of creation.

Thorough in her research, Deane-Drummond draws widely on scientific research. The writing style is appropriate for graduate researchers, but I would hesitate to give it to undergraduates. The writing is replete with Deane-Drummond's characteristically long and densely packed sentences: it takes concentration, but it is worth the effort.

If I were to offer one critique: it was unclear to me why Deane-Drummond relied so heavily on von Balthasar and Aquinas. Theo-drama, for example, played a very small role through most of the chapters, and often Deane Drummond's own critiques seem to locate von Balthasar in a patriarchal and anthropocentric past. Aquinas, too, often had to be rescued carefully from devastating statements about women and non-human animals. Even then, their thoughts had to be extended significantly and often speculatively in light of contemporary science. Deane-Drummond succeeds in showing that the views of Aquinas and von Balthasar are more relevant to the modern dialogue than one might expect, but it is unclear that the gains they bring are sufficient to outweigh the significant critiques and extensions that are necessary to use them at all. Use of these thinkers may have been better suited to a work that was not trying to cover so much ground. Because of the author's focus on these two theologians, the project is less conversant with recent ecotheological developments than might be desired. Theologians one might expect to see, such as Michael Northcott or Ernst Conradie make little or no contribution, nor do some of the classic authors of ecotheology, such as Annie Dillard or Wendell Berry, whose rich reflections about the need for wis-

dom in the entanglement of human and non-human animals would seem to be particularly relevant. Their exclusion might be due to the overall exclusion from this monograph of ethical questions, which Deane-Drummond promises in future work on sustainability.

Still, *Wisdom of the Liminal* is no small feat of scholarship, and Deane-Drummond's accomplishment should not be understated. Anyone interested in new evolutionary discoveries across a range of sciences and distilled through the author's incisive critiques will enjoy this book.

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### **Owen Gingerich *God's Planet***

Cambridge MA: Harvard University Press, 2014. 170 pp. pb. £14.95. ISBN 978-0-674-41710-6

Owen Gingerich is an eminent astronomer, who has written a brilliant little book on the well-trodden subject of science and religion, but in novel ways, using his understanding of the history of scientific ideas. He discusses three examples, Copernicus, Darwin and Hoyle, and asks – were they right? – but the answers are more subtle than expected.

Three themes weave their way throughout. The first is that new ideas, which may now seem obvious, often took a while to bed down and be accepted. The second is that Stephen Jay Gould's magisteria have repeatedly overlapped over the centuries, so that physics cannot be truly separated from metaphysics. Science and religion use evidence differently but have the same goal of a coherent understanding. The third theme is that 'Why?' questions need a metaphysical approach that is often implicit and culturally influenced. Thus, views of science are coloured by personal belief, examples being state-

ments that 'evolution is atheistic' or 'science tells us we are here by pure chance'.

The first section of the book discusses Nicolaus Copernicus (1473-1543). Why did it take a century and a half for his heliocentric cosmology to be accepted: that the Earth is spinning and moving around a stationary Sun? This revolutionary suggestion defied common sense. Why are we not spun off into space?

Consequently, Copernicus was reluctant to publish his ideas and he only did so at the age of 70 in the 400-page *De Revolutionibus Orbium Coelestium*. What appealed to him was the model's irresistible beauty, with longer-period planets lying outside shorter-period ones, and its natural explanation of why Mars, Jupiter and Saturn periodically stop in their tracks and move backwards against the background stars. One consequence, an annual parallax for positions of background stars, was not observed until 1838, and the rotation of the Earth was demonstrated by Foucault with his famous pendulum, only in 1851.

Against this, the early medieval picture of Ptolemy's model had its own beauty and order, with the Earth in the centre surrounded by planetary spheres, and beyond the stars layers of saints and angels, with God the creator holding everything in his arms. Science is far more entangled with a humanistic or theological vision than we might expect.

At the beginning of the seventeenth century, there was no physical evidence in favour of the heliocentric system except for its unifying aesthetic appeal. Thus, Galileo was unable to answer Cardinal Bellarmine's challenge to come up with a proof for the Earth's motion. What finally turned the tide was Newton's *Principia* (1687), with its solar system moving by gravitation around the Sun.

Charles Darwin (1809-1892) is turned to next. In the USA only 40% of people and 10% of churchgoers now believe he was right about evolution. Gingerich discusses reasons for this and places Darwin in a historical context, outlines how Darwin developed his ideas and describes how the concept of evolution has itself evolved and been enriched by studies of the Earth's age, the fossil record and genetics. He is unsympathetic to the statement that 'Evolution demands atheism', and instead accepts Freeman Dyson's opinion that 'It looks as if this universe knew we were coming.'

On Darwin's return home from his five-year *Beagle* voyage, most naturalists rejected the claim that one species could change to another, and instead thought that each form is created miraculously by God. Darwin, however, knew that pigeon fanciers breed different lines of unusual pigeons and noted that species on the Galapagos were similar to but subtly different from those in nearby South America. He also read the essay by *Malthus*, which argued that, if world population became too large, famine would lead to starvation. This led him to conclude that 'Favourable variations would tend to be preserved and unfavourable ones destroyed. The result would be the formation of new species.'

Darwin shared his ideas with Harvard botanist Asa Gray, but was reluctant to publish. In September 1857, Darwin sent Gray a précis of his theory of natural selection, but was dismayed to receive the following summer a similar thesis from naturalist Alfred Russel Wallace. He had been working on his theory for fifteen years, so this was the stimulus he needed and in less than a year *On the Origin of Species by Means of Natural Selection* was published. Others had proposed transmutation of species, but Darwin and Wallace were the first to propose a mechanism. *Origin of Species* concluded with the words 'from so simple a beginning endless

forms most beautiful and most wonderful have been, and are being, evolved', but in the second printing two months later he added the words 'by the Creator'.

The final section of the book about Fred Hoyle (1915-2001) discusses two contemporary issues where people are often unaware of the metaphysical assumptions brought to science, namely, multiverses and extra-terrestrial life. Hoyle solved a major puzzle, namely, how heavy elements such as carbon can be formed. Hydrogen, helium and a little lithium can be made in the big bang, but the problem was that the lack of a stable nucleus of mass 5 meant that the path to building heavier elements inside stars was a mystery. Hoyle suggested a new example of fine-tuning, that the carbon atom (essential to life as we know it) has a resonance level at a precise level to enhance the production of carbon to the observed abundance. Later, Willy Fowler detected the resonance exactly where Hoyle had predicted.

Many constants of nature seem fine-tuned to allow the existence of intelligent life on Earth, which leads to the *atheist dilemma*, that either there is purpose in the universe or there are monstrous coincidences. To Gingerich, the alternative of multiverses is outside physics and so is part of metaphysics. For him, belief in a creator God gives a coherent understanding of why the universe seems so congenially designed for the existence of intelligent, self-reflective life. Fine tuning is not a proof for the existence of God, but the universe does make more sense with this understanding. At present, he regards the multiverse as metaphysical fantasy, but, if its existence is demonstrated in future, he would still regard the fine-tuned physical parameters as somehow God-given.

In conclusion, this wonderful wee book is a real delight to read, and I shall certainly be recommending it to those

who are seeking new insights into the relation between science and religion.

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**Paul Marston**

***Great Astronomers in European History***

The University of Central Lancashire,  
2014. 496 pp. pb. £20. ISBN 978-1-901922-97-4

I greatly enjoyed reading Paul Marston's book: a work which I had seen previously in its original teaching format as a text for the 'Astronomy Distance Learning Course' of the University of Central Lancashire (UCLAN). It provides a wide, detailed and thoroughly accessible history of astronomy, extending from pre-classical antiquity to the early twentieth century. And Dr Marston sees the development of Western astronomy as intimately related to the intellectual perspectives of the Judaeo-Christian religious tradition. While in no way 'pushing' a religious line, he never loses sight of the constant and inescapable interaction between science and theism, and how so many eminent astronomers saw their Christian faith as the foundation upon which their scientific work was built.

The book is an excellent 'myth-buster', challenging, from demonstrated evidence, the essentially fictitious model that science only 'progressed' once brave men dared to defy ecclesiastical authority. In particular, this 'science versus religion' myth is firmly confronted in Chapter 6, which deals with Galileo. Paul Marston also challenges the myth that science had 'founding fathers', who somehow towered above the lesser men (very few women, of course, until Caroline Herschel in the late eighteenth century) and showed them the way forward. For while I wholly endorse Dr Marston's view that there were truly

'great astronomers' whose contributions were of the highest importance, I also agree with his scepticism about the heroes and giants model of 'founding fathers'.

In Chapter 1, dealing with the nature of science and history, the author conducts the reader through a review of the various philosophical theories pertaining to the subject. Here we find discussions of the various 'models' proposed by predominantly twentieth-century philosophers, sociologists and historians of science, such as Thomas Kuhn's concept of scientific 'revolutions'. Here too we encounter reductionism, relativism, positivism and other attempts to explain what science is. All very useful material, especially for the student who may be confused by the competing theories on offer, for Paul Marston lays them before us and explains their respective claims in clear language.

Indeed, the whole book is written in a clear and transparent style, with no mathematics beyond the occasional diagram explaining such things as equants, epicycles, and Kepler's Laws, and – always a major strength, as far as I am concerned – with no sociological jargon.

We are then conducted through the remaining 11 chapters, dealing with: early cosmology; Copernicus; Tycho Brahe; Johannes Kepler; Galileo; Jeremiah Horrocks; Newton; William Herschel; the discovery of Neptune; the life on other worlds debate; and early astrophysics. Each chapter is divided into sub-sections, with in-text illustrations, which provide context in an easy-to-follow structure. There are also six pages of colour plates, each one subdivided into many small plates showing portraits, locations, and instruments. Many chapters contain question sections, where readers are invited to test themselves and reflect upon what they have read. In particular, I like the three Galileo questions, (237) which invite the reader to consider to what extent

Galileo's success (and, one might add, downfall in 1633) was precipitated by his 'knack of self-publicity' and 'sleight of hand' in arguments, and whether his great discoveries could have been made by someone else. Hardly the 'reverential' view, but one which, in my own opinion, is very close to the truth.

Each chapter is thoroughly documented, and concludes with bibliographies of accessible primary and secondary sources. My only criticism of the book as a whole is the absence of an index, for, while the layout and structure are clear and sequential, an index, nonetheless, is a handy way of locating something quickly.

But what of the chapter contents? Not only are they full of solid historical and scientific information, but they 'set the record straight'. There is no heroising or demonising and – as I said – the very positive role played by Christian thinking, from the time of St Augustine and the Church Fathers to Victorian debates about life on other worlds, simply shines through. As it does anyway, if it is not deliberately snuffed out by historical writers pushing secularist agendas.

And there were some chapters which I especially enjoyed. For example, I applaud Paul Marston's treatment of Johannes Kepler, which covered not just the Three Laws, but also the nature of the patronage he received. For the explicitly Copernican Kepler was a lifelong Lutheran, yet for many years he was employed and deeply respected by two fervently Catholic Holy Roman Emperors. Why did Kepler not suffer Galileo's later fate? (Did personal 'style' and temperament play a part?)

And as a Lancastrian myself, I really liked the prominence Paul Marston gave to Jeremiah Horrocks: the young man who, as I have suggested elsewhere, made the next great advances in heliocentric astronomy after Kepler and Galileo – yet in a remote Lancashire village.

At a time, moreover, when the discovery of exo-planets is feeding an obsession with 'ET', Paul Marston's discussion of the long, detailed, and often *Christian* debate about the possibility of God putting life on other worlds is very apposite. I also liked his common-sense approach to the achievement of Sir Isaac Newton, and applaud the way in which he puts paid to those fashionable 'psychoanalysis' theories that try to 'explain' the motives of a seventeenth-century Cambridge bachelor don in the context of twentieth-century Freudian complexes.

I have few criticisms of *Great Astronomers*, with the possible exception of any serious attention being paid to medieval Arabic astronomers, and a handful of typographical errors, one instance being 'Whirley' for 'Shirley'. (210)

But this is an excellent, comprehensive and very accessible book, which not only lays out the terrain of astronomical history, but also documents its intimate, fruitful, and creative relationship with the Judaeo-Christian faith.

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**Antoine Bret**  
***The World is Not Six Thousand Years Old – So What?***

Eugene, Oregon: Cascade Books, 2014.  
108pp. \$16.00. ISBN 978-1-62032-705-0

First and foremost, this book is about credibility. The popular misconception that there is a choice to be made between scientific and Christian beliefs about origins, means that books such as this are both important and necessary. Bret argues that science and belief can be perfectly harmonised and that believing in an old earth is no threat to

the Christian faith. Addressed primarily to those in Christian circles with an interest in questions about origins, Bret wants to put the record straight.

In just over 100 pages the case is succinctly and convincingly made. Those that propagate the misconception neither understand the nature of the scientific pursuit nor understand correctly the biblical creation texts. The opening chapters argue that a non-literal reading of parts of Scripture has long been accepted and is essential. Indeed, even a rudimentary understanding of literature demands it. Bret does not question the reliability of the Bible, but correctly questions the reliability of the interpreter. (18) There is also an important chapter (chap. 3) on how science and the scientific community work. He explains how new theories replace old theories; how peer review operates; and how the very nature of the scientific pursuit makes conspiracy theories about science highly implausible.

What I enjoyed most about the book was its boldness. Written with a relaxed tone and in terms that address a wide audience it is not reticent to use phrases such as ‘this is an observed fact in relation to the scientific evidence for an old universe, and utterly wrong in respect of young earth protagonists’. The more technical chapters 4 and 5, where Bret’s expertise in astrophysics comes to the fore, spell out the evidence for why the universe is old. The details may be beyond the technical understanding of some readers, but the overall argument is not lost in the process. The radio dating and astrophysics speak for themselves.

Science is about credibility. Scientific theory stands, falls and is re-shaped by evidence. Christian belief is about credibility. There is no virtue in ignorance. Truth and understanding are the shared pursuit of science and belief. In the interest of being credible, more writing with this type of intellectual rigour and boldness is in my view very

welcome. I would recommend this book.

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**Kelly James Clark**  
***Religion and the Sciences***  
***of Origins: Historical and***  
***Contemporary Discussions***

London: Palgrave Macmillan, 2014. 288 pp. pb. £16:00. ISBN: 978-1-137-41480-9

This is a watershed contribution to the literature on science and religion, written by an American Christian philosopher who is neither a scientist nor a theologian and who is therefore able to say much more about the field in overview than might otherwise be convenient. Its design for teaching use at an introductory and undergraduate level is evident in eschewing specialist vocabulary and in its clear explanations of most of the concepts referenced, whether in philosophy, neuroscience or ethics. More examination of the problem of under-determination of theories could support his later arguments. The endnotes helpfully extend the discussion and provide, along with the extensive bibliography, fulsome references to very up-to-date resources on the impressive range of topics covered. Clarke credits a wide range of academics with whom he shared chapter drafts in the production of this Templeton funded volume.

Many chapters begin with a pithy mythological ‘history’ which Clark then critiques and uses as a springboard for theoretical analysis and development of an argument. He sometimes acknowledges significant tangential issues, signposting links and further research. The writing is pleasingly colourful, often humorous and only refers to Richard Dawkins et al when really justified. The passages on significant figures, including Bacon, Boyle, Newton and Descartes are expertly extended to give a multifaceted view of their contributions and interactions. Clark is

very clear in reporting the views of his sources, before moving on to his own analysis, and then pithily sums up the main points, contrasting them in a bold yet balanced manner.

Using the abbreviation (and TV title) 'CSI', Clark explores the three hypotheses of conflict, separation and integration for the relationship between science and religion, driving to his key point that the overall debate is really between naturalism and theism. While he often actually espouses a dialogue model in practice, it is a shame he did not acknowledge this explicitly. The chapter on Galileo, teasing out the principles we can glean from his Letter to the Grand Duchess Christina, is a highlight of the book.

Clark navigates many of the inter-related complex issues in his chapters on Genesis, Darwin and developments in evolutionary theory, although not always seamlessly. He does not touch on theological questions of revelation, but makes much of Augustine as a guide for hermeneutics, especially his principle of accommodation in biblical literature. Despite a thorough account of the 1925 Scopes trial, there is almost no discussion of the modern motivations of Biblical Creationists or ID supporters here or elsewhere in the book, which could reflect an assumption that readers will be familiar with Henry Morris, Ken Ham, Michael Behe et al, but in any case, this apparent hiatus in academic detachment amounts to a significant flaw in the range of this book. There can only be genuine dialogue if all partners feel included. It would also enhance the science to acknowledge the theoretical work of Simon Conway Morris, as his ideas about convergence would provide Clark's argument with a sounder basis for his later discussions of possible divine guidance of evolution as well as fine tuning.

In 'Judaism and Evolution', Clarke summarises the extraordinary role of Jews in the history of physics but

shows the difficulty in extracting lessons on possible connections between science and religion from the perspectives of, say, Bohr or Einstein. He contrasts the efforts of Rabbi Slifkin (b1975), who grasps the nettle of evolutionary science and reaches for a model of rationalism that takes Torah and Talmud seriously as a basis for the intellectual and moral goals of society, with the physicist Lee Spetner (b1924), who attempts an integrationist approach while still taking Torah very seriously, as the 'creationists' do. Clark allows his readers to spot parallels between Slifkin's adoption of the figurative reading stance of Maimonides (1138-1204) with Christian theists' reference to Augustine, wisely only making brief comments of his own to this effect, leaving Jewish readers to draw their own conclusions.

Half of the lengthy final chapter on 'Islam and Evolution' is a primer on Islam, creation theology in the Quran and historical contexts for the reception of Darwinism, making the case that evolution theory was introduced as a constituent part of Western colonial imperialism at a time when Muslim academic standards had declined under oppressive political domination. Clark deploys his growing expertise honed as Senior Research Fellow at the Kaufman Interfaith Institute in this chapter, contrasting the creationist polemicism of Adnan Oktar (b1956) with the Hashemite University biologist Prof Rana Dajani, who is working on the appropriation of evolution into a Muslim world-view. Regarding Islam, Clark shows that the polymath philosopher Averroes (1126-1198) provides Dajani with the machinery for epistemological and hermeneutical corrections to literalistic interpretations. It is only in this chapter that Clark deals with 'fundamentalism' as a category, bracketing both overzealous religionists and scientific scientists together. This sets up his conclusion that through the exercise of proper humility, Muslims, Christians and Jews can collectively 'trust their

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## Book Reviews

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cognitive faculties' as they grasp the meaning of creation in the image of God which 'ennobles humanity' as they correctly handle both the book of Nature and their books of Scripture.

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