In this issue (full contents on next page):

CONTENTS

NOTES ON CONTRIBUTORS

David Clough is Professor of Theological Ethics and Head of the Department of Theology and Religious Studies at the University of Chester. He has just published *On Animals* vol. I - Systematic Theology (T&T Clark/Continuum, 2012).

Peter Colyer is a Research Fellow at the Centre for Christianity and Culture, Regent's Park College, Oxford, and a former Secretary of the Science and Religion Forum.

David L. Gosling has lectured at the University of Delhi and the University of Cambridge, where he is currently a Life Member of Clare Hall. Among his most recent publications is his book *Religion and Ecology in India and Southeast Asia.*

David Leech is a research associate on an AHRC-funded network grant 'Revisioning Cambridge Platonism', and an affiliated lecturer in philosophy of religion, Faculty of Divinity, Cambridge.

Jeffrey A. Lockwood is Professor of Natural Sciences and Humanities, University of Wyoming. His most recent books include *Six-Legged Soldiers: Using Insects as Weapons of War* (Oxford, 2010) and *Philosophical Foundations for the Practices of Ecology* (Cambridge, 2009)

Eric C. Martin is a postdoctoral researcher at LSE writing on the history and philosophy of science, and is part of the Templeton Foundation-funded project, 'God's Order, Man's Order and the Order of Nature'.

Christopher Southgate, a former editor of *Reviews*, is Senior Lecturer in Theology at Exeter University. He is the author of *The Groaning of Creation: God, evolution and the problem of evil*, and the editor of *God, Humanity and the Cosmos: a textbook in science and religion* (3rd ed. 2011).

Joseph Wolyniak is a DPhil Candidate at the University of Oxford (Harris Manchester), Visiting Scholar at Yale University (Interdisciplinary Center for Bioethics), and Vice Chair of The Episcopal Church's Executive Council Committee on Science, Technology & Faith.

EDITORIAL

Summer is almost upon us but before the enjoyment of those long evenings commences I must draw your attention further ahead to the most important date in the calendar for the latter part of this year: the Forum's Chester conference which takes place from the 5th - 7th September 2013 on the theme of Divine Action. This promises to be both a convivial and stimulating event so please be encouraged to book your place. The Forum's website has more details and registration forms. I would also like to draw your attention to the Peacocke Essay Prize which we are running again this year, also on the theme of Divine Action. The competition is open to undergraduate and postgraduate students so please do publicise it to anyone you know who may be interested. I do hope we can replicate the success of last year's competition.

As I write this, the Large Hadron Collider lies dormant as it undergoes repairs and upgrades, a chance for the physicists at CERN to attend to the staggering amount of data collected before its shutdown. Despite the widely reported discovery of the Higgs boson, the LHC has in fact done much to highlight our current ignorance: mere hints that might take us beyond the Standard Model of particular physics have been more elusive than predicted. Our current lack of scientific knowledge is a theme that runs through many of the reviews in this edition encouraging, I hope, a healthy dose of epistemic humility. I am thrilled that our former editor Chris Southgate has written this edition's Book That Made a Difference. He

highlights how the double helix is a relatively new discovery, filling a gap in our knowledge often forgotten because of its familiarity to us today. This edition's review article, contributed by Eric Martin, of Thomas Nagel's most recent book concerns itself with one of the frontiers of our current knowledge, the mind-body problem. Nagel draws attention to the current holes in our scientific understanding of the world in his argument against neo-Darwinian naturalism, illustrating how baffling some of our currently unresolved problems are.

In our other reviews, David Clough discusses a new volume on ecological hermeneutics edited by David Horrell, Cheryl Hunt, Christopher Southgate, and Francesca Stavrakopoulou. Their premise that ecology itself should be a hermeneutic for all theologians is one that deserves sustained attention. A case could be made that ecology should be the single biggest concern of theology itself; the ecological problem is arguably the biggest one we have to face. David Gosling engages in a serious critique of Edelmann's, *Hindu Theology and Biology* raising further questions about scriptural hermeneutics in the science-theology conversation. Joseph Wolyniak reviews the new edited collection of essays, *God and the Scientist,* exploring the work of Forum member John Polkinghorne while Peter Colyer discusses *The House of Truth,* the new monograph from another Forum member Michael Meredith. Jeffrey Lockwood reviews Joseph Fortier's *Confluence of Evolutionary Science and Christian Faith* negotiating the pantheism of Stuart Kauffman and the anthropocentric tendencies of Teilhard

de Chardin's teleology. A reprint of David Leech's review of Alvin Plantinga's notable volume *Where the Conflict Really Lies* takes us back to naturalism but to a very different consideration from Nagel's. For Plantinga a thoroughgoing naturalism is self-defeating and points towards the harmony of religion and science.

As always, I am very grateful to our reviewers and I welcome requests from Forum members to review recently published works. Please be encouraged to peruse the list of books available or to suggest titles for review. In the meantime, please enjoy the latest edition.

THE ARTHUR PEACOCKE

STUDENT ESSAY PRIZE

CALL FOR SUBMISSIONS

On the theme of Divine Action

In memory of its founding President and former Chairman, the Revd Dr Arthur Peacocke, the Science and Religion Forum offers a prize for an essay directly relevant to the theme of its annual conference. This year's conference (5th-7th September 2013 at the University of Chester) has the theme of Divine Action. For further details, see the Forum's website: **www.srforum.org**

The prize is open to all undergraduate and post-graduate students in full or part-time education. The prize will consist of a cash award of £100, free membership of the Forum for one year, and the UK travel and accommodation costs (or equivalent) of the winner's participation in the Forum's 2013 conference.

The essay should not exceed 5000 words in length, including footnotes but excluding references. It should be preceded by an abstract of no more than 250 words, and should be submitted as an email attachment in Microsoft Word format, no later than midnight 31st July 2013 to Dr Louise Hickman: l.hickman@newman.ac.uk. Dr Hickman will answer any questions about the prize. All submissions will be acknowledged within 1 week of receipt.

The essay should be the original work of the applicant – unacknowledged quotation from the work of others will automatically disqualify the entry. Copyright in the essay will remain with the author. Each submission should be accompanied by a statement from the author's Supervisor or Head of Department, confirming the author's student status and indicating awareness that the essay has been submitted. The adjudicators reserve the right not to award the Prize if no entry of sufficient standard is received. Their decision will be final, and no correspondence about it will be entered into.

A BOOK THAT MADE A DIFFERENCE

James D. Watson, ***The Double Helix*** (first published 1968), reissued as *The Annotated and Illustrated Double Helix*, ed. Alexander Gann and Jan Witkowski (New York & London: Simon and Shuster, 2012, pp. 368, £19.99, Hbk, ISBN 978-1476715490).

REVIEWED BY CHRISTOPHER SOUTHGATE

I first read this book as an inquisitive but easily bored fourteen-year-old in my school library in the summer of its first publication. To say that it propelled me into science A-Levels, and thence into the Natural Sciences Tripos, a PhD in biochemistry, and a lifelong curiosity of what constitutes life and makes it work, would be an oversimplification. But I do remember from my first reading the excitement Watson conveys as he recounts the race between Crick and himself at the Cavendish and Linus Pauling at CalTech. Most of all I recall the extraordinary beauty of the solution to the structure of DNA. Even to a fourteen-year-old the way X-ray crystallographs, chemical constraints and biological function were all interpreted in a single concept was deeply satisfying. Indeed, the idea of the double helix is so elegant that it is hard to imagine oneself back into the time before it was even guessed at.

For this piece I invested in the new hardback 'annotated and illustrated'. It is at times a little laborious – not all those photos of scientists were really needed, except perhaps to reinforce what a male-dominated world physical science was in the early 1950s. What this

edition does add is a collection of letters, reports and reviews surrounding Watson's account. Particularly fascinating are the letters in which Crick tries with increasing impatience to persuade Watson not to publish his admittedly rather sensationalised account. Also Chargaff's extremely censorious review of *The Double Helix*, and the painstaking responses of Watson, Maurice Wilkins, and Max Perutz, exonerating themselves of the charge of having stolen Rosalind Franklin's data from a confidential report.

Those going back to the book now (or perhaps engaging with it for the first time) will be aware of the importance of balancing Watson's account by reading other versions, such as Wilkins' autobiography, and Brenda Maddocks' study of Franklin. But Watson's book vividly conveys the ignorance and blundering around in those early years of what came to be called molecular biology. It seems extraordinary to us now that as great a chemist as Pauling could have published a structure that placed the phosphate backbone on the inside, exposing the more hydrophobic bases to the aqueous environment. And we take for granted now the integration of X-ray work with primary sequences in inferring the structure of macromolecules, forgetting how absolutely new this was at the time.

Another element that emerges from the book is the sheer improbability of Crick and Watson as winners of the race to the structure – they had done little experimental work, and neither of them had anything like the chemical understanding of Pauling, or the

crystallographic excellence of Franklin. But they had huge, and complementary, intellectual confidence. They were in a place – the Cambridge of 1953 – where expertise could be drawn on in all sorts of ways. Moreover, they had huge slices of luck. At a critical moment, Pauling was refused a passport by the US authorities – a reminder that this was also the era of McCarthyism. Franklin released important photographs because she had finally negotiated her departure from what she regarded as the infuriating environment of King's London, and was having a clear-out.

Some of my favourite moments in the book come when other great scientists, who were still active when I was myself at Cambridge, have walk-on parts. Max Perutz, the kindest and most courteous of the intellectual giants I have had the privilege of encountering, accommodates Crick and Watson when it would probably have been easier to turn them away. Alexander Todd, who became Master of my own college, Christ's, is called in to approve the structure from the point of view of organic chemistry. I can picture him doing it, with proper Scottish gravamen, and a smile breaking through at its edge.

Of course Watson is infuriating, in his endless gossip about his peers. He does convey – I remember this so well – how one can become obsessed with a scientific idea and still devote a great deal of time to tennis, and to making opportunities to meet young women. His treatment of Franklin in the book remains in my view unforgivable. She had died in 1958, at the age of thirty-

seven. In his epilogue Watson admits that both his scientific and personal judgments of her were 'often wrong'. If he had been blogging in 1952-3 it is easy to see how these judgments might have seen the light of day. But why he wrote so frivolously and dismissively of her in a text prepared long after she had died, and when he already knew how wrong he had been, is very far from clear.

The Double Helix was a book that made a difference in conveying to this brattish teenager how beautiful biochemistry could be. (It also misled him into supposing that amazing conclusions can be obtained without the huge grind of precise and relentless experimentation – in this the story of Watson and Crick remains very unusual indeed. They were integrators of others' data in a way few thinkers ever have the opportunity, or the intellectual stature, to pull off.) The book's chief value now is to remind us how little of what we regard as familiar about this branch of science was understood only sixty years ago, and therefore that the scientists of 2073 will likewise be astonished at what seems to us excellent progress, but will seem to them mainly like floundering around, while the beautiful and obvious passed most of us by.

REVIEW ARTICLE

Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False*. New York: Oxford University Press, 2012, pp. 144, £15.99 Hbk, ISBN 978-0199919758.

REVIEWED BY ERIC C. MARTIN

Thomas Nagel is one of the foremost Anglophone philosophers. His contributions to ethics and philosophy of mind have been especially noteworthy, and of course it is due to him that at least a generation of graduate students will ponder deeply what it is like to be a bat. Partly on account of that stature, and partly because of his lucid and approachable writing, this text will likely enjoy broad influence beyond academic philosophers. His primary conclusion, also the subtitle of the book, is a bold and attention-grabbing claim that should be relevant for readers of this publication.

In this slim volume, Nagel continues his earlier work on the philosophy of mind, returning to his point about the failure of psychophysical reductionism, or the ability to account for mental phenomena in terms of physical laws. But he extends this point to a broader and more sweeping verdict: the mind-body problem is no local curiosity just to do with human minds, but in fact illustrates the failure of the whole philosophical project of naturalism. The mind-body problem 'invades our understanding of the entire cosmos and its history. The physical sciences and evolutionary biology cannot be

kept insulated from it, and I believe a true appreciation of the difficulty of the problem must eventually change our conception of the place of the physical sciences in describing the natural order' (3). Nagel believes this entails pointing out the limited scope of current naturalistic science, and imagines a future science involving evolutionary theory buttressed with newly retooled principles of teleology that might resolve outstanding problems like consciousness and the origin of life.

The book's intended audience is not immediately clear, as it is lacking the argumentative depth or empirical detail that would presumably be needed to sway a philosophical naturalist. Those who take issue with his pessimism about, for example, naturalistic explanations of the origin of life, will be particularly disappointed with the lack of engagement with biological and biochemical sciences. The book is perhaps best conceived as an argument sketch for other philosophers, bringing together several broad strands of philosophy that collectively tell against his materialist target, or else as an introduction and guide to the informed lay reader – but without many pointers to secondary literature.

The introductory chapter announces Nagel's intention to 'defend the untutored reaction of incredulity to the reductionist neo-Darwinian account of the origin and evolution of life' (6). He writes that the materialist 'consensus' held by many philosophers and scientists is simply not supported by scientific successes, which leave gaping holes in their account of the world. Those holes

include the origin of life, consciousness, meaning, value, and purpose. He believes that a few important evolutionary principles, along with a few well-understood scientific case-studies, do not license belief in the broader naturalistic evolutionary world-view that is supposed to account for the full richness of nature. As applied to our understanding of ourselves – humans – Nagel shares the views of his colleagues that evolutionary naturalism undermines confidence in human reasoning (Alvin Plantinga) and objective moral judgment (Sharon Street). For Nagel, these all tell against the plausibility of neo-Darwinian materialism.

Indeed Nagel is not much impressed by the advances of science: '… the idea that we have in our possession the basic tools needed to understand [the world] is no more credible now than it was in Aristotle's day' (7). Given this strongly pessimistic statement, one wonders whether some version of skepticism or anti-realism might not be a more suitable philosophy rather than a hope for some unspecified future science that will encapsulate the totality of nature. But far from skepticism, Nagel is explicit that he is more of a philosophical idealist who partakes in the optimistic vision that nature is wholly rationally transparent and accessible to human minds (17). Natural laws have a central role here: the 'hidden natural order' (16) is ultimately rendered intelligible via laws of nature. Even when discussing the tenability of Aristotelian teleology, Nagel is clear that if there is teleology, 'its laws should be genuinely universal' (67).

An additional resource for his arguments against materialist neo-Darwinism is intuition: it is just prima facie unlikely that evolutionary scenarios can account for all that it needs to for materialism to come out true. Scientific realists, especially, would be quick to point out that untutored intuitions can and should be overridden by proper appreciation for scientific accounts. Indeed some reviewers have already suggested that the book's basic shortcoming is a failure to appreciate the science, but it is not so simple a matter as that. Nagel's target is a speculative metaphysical picture that has no straightforward logical dependence on scientific details. Even taking stock of all the scientific details still leaves Nagel with a philosophical target to critique. That said, Nagel certainly does not do justice to the richness of contemporary biological sciences and the complex set of explanations used therein; he is too close to assuming that evolution by natural selection exhausts all biological explanations.

Lest Nagel is appropriated by the Intelligent Design movement, nobody should mistakenly equate circumscribing evolutionary explanations with theism: there have been theistic evolutionists as long as there have been evolutionists, and no less a rationalist critic of religion than Noam Chomsky has denied (until recently) evolutionary accounts of the origin of language. Nagel is quick to state that he has little time for religious solutions to the problems at hand. Belief in God is not a live option for himself, and in any case the postulation of God would still leave God itself unexplained. 'So long as the divine

mind just has to be accepted as a stopping point in the pursuit of understanding, it leaves the process incomplete … Theism pushes the quest for intelligibility outside the world' (21-26).

Chapter 3 turns in more detail to the failures of behaviourism and functionalism, arguing that such materialist theories of mind fail for the same reasons: they might include the brain but they omit subjective experience. Insofar as evolutionary theory is a physical theory, it actually *cannot* account for the appearance of conscious subjects, which is 'logically distinct from anything describable by the physical sciences alone' (44). It follows that evolution cannot be an adequate explanation of the existence of animals like humans. The desired type of explanation must not just show that a particular event is possible, but what makes it *likely* (48).

So evolutionary materialism and theism are both unsatisfactory accounts of nature. What's left? Nagel holds out hope for an alternative 'unified conception of the natural order' (22). But any alternative needs to accomplish more than supervenience, which holds that the mental supervenes on the physical, because such claims are just brute facts, not real explanations. Also, it must accomplish more than emergence, because consciousness is more problematic than standard emergent properties such as liquidity, where the relationships between constituent parts generate a property at the level of the whole. He is favourably disposed towards something like a 'neutral monism' which states that physical stuff arranged in certain ways

is necessarily also conscious experience, but only a partial (physical) description of that state, while the processes themselves are somehow more than physical. He also endorses the tenability of secular teleological laws that favour certain types of outcomes. Nagel is grasping towards new and more comprehensive explanatory principles, and he is happy to admit the speculative nature of his efforts, but insists that such efforts are required by the ostensible failures of reductive materialism.

The final two chapters, on cognition and value respectively, argue how the existence of moral, mathematical and logical truths rest poorly alongside materialism, for these objective truths frustrate any naturalistic accounting. Unlike other animals, human cognition, especially in the form of reasoning, can extend beyond perception of mere appearance to secure the objective reality behind those appearances. When we debate, we assume that we are responsive to reasons that carry their own authority, which is not derived from biological origins. In contrast to ordinary perception, which is more like a response to the environment, when we reason, "something has happened which has gotten our minds into immediate contact with the rational order of the world' (83). Again, 'it is difficult to make sense of all this in traditional naturalistic terms' (72). And again, it is here that we find Nagel's lack of attention to science – especially cognitive science – such a shortcoming. But nevertheless, on the whole, they are wonderful chapters that summarise and highlight tensions between

naturalism and certain kinds of realism (about morals or mathematical knowledge). Some detractors will find that in the face of this tension, it is the realism that should be rejected rather than the naturalism, though that intuition is more often expressed in the case of ethics than for cases like logic.

An initial concern about this book is the target Nagel paints of materialists. The canonical texts cited as 'convincing everyone' of materialism include Steven Weinberg's 1992 *Dreams of a Final Theory* and Richard Dawkins' 1986 *The Blind Watchmaker*. These are indeed strong statements of reductive materialism, but I suppose few self-identifying philosophical materialists would hasten to defend these texts. Most materialists have more nuanced perspectives on science than those texts evince, and in particular, many materialists have given up on epistemic reductionism, or the notion that a single master science – physics – is going to account for the sundry details of absolutely everything. Sciences seem to be proliferating outward, not reducing downward. Even if they hold on to ontological reductionism, many materialists are willing to grant some theoretical autonomy to the various sciences. So the materialist 'consensus' that Nagel repeatedly alludes to may be more partial than he suggests.

A more general concern about the text involves Nagel's stringent demands on human understanding, science, and on what counts as an adequate explanation. Let me explain.

Puzzles like the mind-body problem have yielded impressive philosophical contortions to make sense of the mental and physical aspects of nature without recourse to dualism. One solution has been to deny that mental phenomena exist *at all*. Eliminative materialists argue that mental states predicated in folk theories of mind will be forsaken via the adoption of more satisfactory theories of brain states in future neuroscience. A separate solution has been to stipulate that the mental is *everywhere*. Panpsychists argue that physical stuff can't possibly add up to conscious stuff, and we obviously are conscious, therefore all of nature must have some conscious dimension. There is something 'it is like' not just to be a bat, but even to be an electron.

Such contortions are borne from the desire for overarching and unified accounts of nature, a standard also endorsed by Nagel. He is dissatisfied with systems of knowledge that lack such unity and comprehensiveness. He is put off by both materialist science and religion because each leaves some things unexplained – neither are sufficiently comprehensive! The assumption that scientific knowledge can provide overarching and synoptic accounts of the totality of nature is shared by Nagel and many of his opponents, and this assumption generates many philosophical puzzles. Such requirements on knowledge warrant closer scrutiny. What are the epistemological desiderata that show up the failures of materialism?

For Nagel, adequate explanations are not just possibly or probabilistically true, but *very likely* to be true – the

things explained must be *expected*. Explanations must be part of a *unified* account of nature. They must leave *nothing* unexplained. These standards are, to put it mildly, a very high bar. One worries that these are not the standards of science, but the hopes of a philosophical idealist. As they appear in this text, they are part of a package of poorly-motivated desiderata for fundamentality. Nagel's desire for wholesale systematicity in human knowledge is an 'ungrounded intellectual preference' (26) that is simply 'hard not to believe' in (31). The author provides little by way of argument to convince those who don't already share such preferences for universal laws that will have such comprehensive explanatory scope.

Nagel holds materialism to peculiar epistemic standards, judged by which materialism fails as a project. Those standards themselves are strong ones. There may be independent grounds to reject those standards – not in order to salvage materialism, but because if we maintain such standards, all we will ever produce is more elaborate contortions.

Materialism, interventionist theism, and Nagel's hoped-for future science are hardly the only philosophical options. Alternatives to the law-governed picture of nature have been charted by many philosophers of science, and it is fair to say that there has been a sea change in the way that Science Studies scholars have come to understand the natural sciences. Much of that work has articulated how science produces not universal and necessary laws, but more local

regularities, tendencies, mechanisms, symmetries, or pragmatic generalisations. If our knowledge of nature comes via those more piecemeal ways, and if there is any relationship between epistemology and metaphysics, then we should expect some impact on metaphysical issues of consciousness, free will, and even about the nature of God – so long assumed to be the source of those universal laws. A current project underway at the LSE called 'God's Order, Man's Order and the Order of Nature' is exploring these very issues. It is an interdisciplinary attempt of philosophers, historians and theologians to investigate more pluralistic and disunified accounts of science and of nature itself, and it has produced exciting results.

I share Nagel's sense that one of philosophy's functions can be to point out the shortcomings in our current state of knowledge. Also, Nagel is to be applauded for taking a broader stock of what exists in the world rather than blithely abandoning features that do not currently fit into some reductive picture of science. The world's richness and abundance have struck many as overflowing the confines of the austere reductive images painted by many of science's spokespeople. The sticking point of course is what to make of this sensibility. Nagel doesn't want the mind to be some afterthought that needs to be awkwardly tacked on to a physical account of the world: he thinks the mental should enjoy pride of place in our explanations of the cosmos. But in his quest to establish the mental as 'fundamental' to our

understanding, Nagel bends into his own peculiar contortions.

Nagel places high demands on knowledge that do not appear in the offing from natural sciences. Nagel's conclusion is to criticise the science as radically incomplete, and speculate how a future science might more ably conform to the comprehensiveness borne of an idealist philosophy. An alternative solution would be to keep the science, learn its valuable lessons about what and how humans can know about the world, and adopt a more humble philosophy about what we know and about how the world 'hangs together.' This more humble view would be more closely aligned with the sciences as they are actually practiced, and it would avoid the need to engage in risky guesswork about what science can or cannot achieve in the future.

REVIEWS

David Horrell, Cheryl Hunt, Christopher Southgate and Francesca Stavrakopoulou (eds.), ***Ecological Hermeneutics: Biblical, Historical and Theological Perspectives.*** London: T & T Clark, 2010; pp. 346, £24.99, Pbk, ISBN 978-0567033048.

REVIEWED BY DAVID CLOUGH

I come to this review fresh from reading newspaper headlines of dramatic challenges for food and water security caused by climate change, rising meat consumption and population growth. While these warnings are just the latest in a decades-long process of assimilating the impact human activities are having on our world, this immediate context is an apt reminder of the need for ecological issues to become a greater focus of theological enquiry. Ecology is now too important a topic to be sub-contracted to eco-theologians: it needs to be recognised as a non-negotiable reference point of which all theologians take account where relevant. One crucial aspect of the quality of such theological engagements will be the use they make of the Bible. Frequently, biblical texts have been deployed in very naïve ways, either negatively to show Christianity's disregard for environmental issues, or positively, to retrieve texts that can be claimed to have a positive ecological message. Responses to these challenges have often had difficulties of their own, so that the discussion of theology and

ecology has been under-informed by careful and methodologically self-conscious exegesis.

The editors of this volume, arising from an AHRC-funded project at the University of Exeter, hope that the book will contribute to bringing 'biblical and theological perspectives into closer dialogue through ecologically orientated and hermeneutically informed reflection on the Bible' (9). The book moves from a group of readings of particular biblical texts in an ecological context in Part I, to discussions of the way particular theologians have used the Bible in their work relating to ecology in Part II, and concludes with four proposals for how hermeneutics go forward in Part III. Five of the twenty contributors are from Exeter, nine from elsewhere in the UK, three from Australia, two from North America, and one from South Africa. The volume is divided into three sections: 'Biblical Perspectives', treating issues in the interpretation of particular texts; 'Insights from the History of Interpretation', representing theological engagements with the Bible and/or ecological issues; and 'Contemporary Hermeneutical Possibilities', where authors pay more attention to current challenges.

The essays in the first section treating particular biblical texts are often helpful in setting parameters for constructive engagements with biblical texts. For example, John Rogerson's opening chapter on the creation stories helpfully surveys the strategies that have been used to deal with *kadash* (subdue) and *radah* (have dominion) from Genesis 1.28, noting that some strategies to soften them, such as that of Norbert Lohfink, are not

convincing (25). Rogerson points out, however, that other responses are more promising, notably that the land sabbath of Exodus 23, the prohibition of felling fruit trees (Deut. 20.19–20) and the compassion commanded for lost animals (Deut. 22) 'are arguably the best commentary on the verbs *kadash* and *radah*', where humanity exercises a gracious role in a cruel world (30). Brendan Byrne similarly argues against misreadings of Romans 8.19–22, and Edward Adams argues that while non-destructionist readings of 2 Pet. 3.5–13 are implausible, we should note that the destruction prophesied is not an end in itself but to make way for a new creation, and therefore intensify, rather than abandon, ethical obligations (115–7). These and other chapters provide useful reference points relating to texts oft-cited in ecological contexts, and should be required reading for theologians operating in this field. John Barton's chapter is conspicuous in its recommendation of looking elsewhere than the prophets 'for a sustained presentation of environmental ethics', though his exploration of Robert Murray's theme of cosmic covenant suggests Barton's conclusion may be overly negative.

In the second section, there are some good examples of reflection at the interface between theology and biblical hermeneutics: Francis Watson treats Irenaeus on Genesis and John; Morwenna Ludlow surveys readings of Genesis 1 in the Church Fathers; Paul Santmire considers the shape of Luther's hermeneutics; and Jeremy Law notes Moltmann's claim that theology cannot be dictated by text or exegete, because while exegesis asks what the

text *meant*, theology uniquely asks what it *means* (228). Other chapters in this section seem less interested in an engagement with hermeneutics, however: Mark Wynn provides an interesting exploration of resources in Aquinas for thinking about the place of non-human creatures, but gives little consideration to Aquinas's use of the Bible; David Moss's account of Balthasar's approach to ecology also takes little time to engage with biblical texts. In such cases the editors' project of promoting dialogue between biblical and theological perspectives seems to be left to the reader rather than explicit in the text, though as explorations of theology and ecology the chapters provide material of interest.

The final chapters are a mixed bag: Harry Maier considers how American evangelicals have interpreted Revelation in an environmental context, noting some 'green premillennialists'; Stephen Barton offers an approach to eschatology in an environmental context that, he claims, goes beyond alternatives from Richard Hays and Kathryn Tanner; Tim Gorringe offers reflections on current food and agricultural practice provoked by four lectionary readings for Rogation Sunday; and Ernst Conradie draws attention to the doctrinal presuppositions evident in projects in ecological hermeneutics.

The resulting volume goes some way to meeting its aim of provoking dialogue between biblical and theological perspectives, but perhaps more importantly provides a stimulating range of resources for encouraging its readers to take the dialogue seriously.

Much more work is necessary in connection with virtually all the chapters in this book, as the editors would be the first to agree. Hopefully, therefore, the explorations presented here will be a further stimulus to intelligent and well-informed discussion of how urgent ecological questions can be addressed in biblical and theological modes.

Jonathan B. Edelmann, *Hindu Theology and Biology: the Bhāgavata Purāṇa and Contemporary Theory*. Oxford: Oxford University Press, 2012; pp. 251, £74 Hbk, ISBN 978-0-19-964154-3.

REVIEWED BY DAVID L. GOSLING

There are fundamental problems about attempts to discover modern scientific truths in the ancient scriptures of world religions. Are such comparisons literally valid, coincidental, contextually suggestive, or completely anachronistic, on the grounds that things which could not have been known scientifically at a certain point in time could not have been 'revealed' in scripture?

Jonathan Edelmann summarises his objectives as being, first, 'to establish a realistic picture of how Darwinism and religion interacted', second, 'to answer the difficult question as to why "science" ... mattered to the Hindu traditions', especially the Bhāgavata Purāṇa, and third, to 'relate the two apparently disparate systems of thought' (vii–viii). By doing this, Edelmann hopes in the long run to exemplify 'a fruitful dialogue between Hinduism and science' which 'will encourage scholars of

Hinduism to engage more seriously with science and religion using the disciplined methods of comparative and historical analysis' (ix).

So far so good. But problems occur when one considers why the Bhāgavata Purāṇa is given so much prominence as a Hindu scripture, rather than, say, the Upanishads, which are among the more foundational *śruti* (i.e. declared) documents. Even within the Upanishads that are cited, there is no mention of the Chāndogya, with its famous equation between *brahman* and *ātman* which was so important to nineteenth-century Hindu scientists seeking a rapprochement between science and religion, or the theistic Śvetāśvatara. Similarly with authors and commentators there are appreciative acknowledgements of Keith Ward, who, at least until recently, claimed little familiarity with Asian religion, but no mention of Julius Lipner, who is arguably the finest modern scholar in this area.

Edelmann would have done well to pay more attention to nineteenth-century Hindu scientists and reformers, who largely shaped the beliefs of contemporary educated Hindus, and how they viewed their own scriptures. He mentions the Bengali physicist turned biologist, Jagadish Chandra Bose (1858–1937), quoting him via one of my own early publications, but then jumps from Bose's emphasis on *brahman* in the Upanishads to his beloved Bhāgavata, composed many centuries later and based on a theistic interpretation of reality far removed from Bose's worldview. A few paragraphs later he observes,

> According to my own observations, most Hindus see Western science merely in terms of worldly goals, as a source of income or as a way of improving life in this world, and this may be one reason why they have paid so little attention to the natural sciences in their constructive theology. (211)

This, argues Edelmann, has left Hindu thought 'voiceless in one of the most innovative areas of academia: the science-religion dialogue'. But if he had considered Satyendra Nath Bose (the other Bose, whom he does not seem to be aware of), who collaborated with Einstein in his quest for a unified field theory, P. C. Roy, Srinivasa Ramanujan, Meghnad Saha, or Nobel Prize winner C. V. Raman, he might have concluded differently. Instead of these universally recognised Indian scientists, we are presented with a Princeton astrophysicist who 'finds a resonance between the contemplative practices of Hinduism, Buddhism and Taoism and the meditation that the practice of science entails ... the experimental approaches of Buddhism and Hinduism are similar to that of science' (210). But is science limited to only a single approach?

Edelmann's liking for the Bhāgavata Purāṇa may reflect the teaching of the Hare Krishna movement, to which he belongs, but even within this scripture there are major problems over preferences and omissions. The Bhāgavata text discusses biological issues such as human procreation to such an extent that it can function very

generally as an interface between this comparatively late part of the Hindu tradition and science. But what are we to make of the hells into which we shall be thrown to cook in boiling oil if we behave inappropriately? Of course Jews and Christians face similar problems with some of their early Hebrew scriptures, but their understanding of progressive divine revelation can help them avoid inconsistencies between similar passages and the notion of an ultimately loving God. Edelmann glosses over such embarrassments.

There are some strange comparisons between Hindu religious and scientific ways of knowing reality:

> For the *Bhāgavata*, it is the practice of yoga and for science it is the peer review of the scientific community ... members of both traditions use testimony when formulating their understanding of reality. For scientists, the use of testimony means relying on and trusting in the words and text of those deemed reliable by the scientific community; for Vaishnavas it means relying on and trusting in the words of the *Bhāgavata* ... . (220)

I doubt if many practising scientists would agree with such sentiments. However the main scientific objection to Edelmann's basic thesis is that from the methodological standpoint of mainstream science it is deeply anachronistic.

Fraser Watts and Christopher C. Knight (eds.), *God and the Scientist: Exploring the Work of John Polkinghorne.* Farnham: Ashgate, 2012; pp. 298, £17.99, Pbk, ISBN 978-1-4094-4570-8.

REVIEWED BY JOSEPH WOLYNIAK

Despite the indelible mark John Polkinghorne has left on the science-religion dialogue, there is a surprising lack of introductory material surveying his life and work. Though characteristically pellucid (one always has the sense that Polkinghorne writes as a priest addressing his parish), the sheer volume of Polkinghorne's work can be daunting – hundreds of books, articles, and essays on subjects ranging from quantum electrodynamics to Trinitarian systematics. Those seeking a handle on the Polkinghorne corpus have thus been left with a quandary: Where to begin?

Now we need look no further. Fraser Watts and Christopher C. Knight's *God and the Scientist: Exploring the Work of John Polkinghorne* offers an impressive collection of essays from leading and emerging scholars engaging Polkinghorne's thought and legacy. Accessible but substantive, the collection is somewhere between a helpful handbook and a fitting Festschrift. Tough edited collections are often uneven, this book reads with a commendable comprehensiveness, cogency, and counterpoise of critique and compliment. The evident forethought and careful assemblage are a credit to the editors, while the component essays do justice to their

esteemed interlocutor. This book is undoubtedly an instant standard-bearer on Polkinghorne's import.

Part of the Ashgate Science and Religion Series, the volume is (as the editors note in their preface) the result of a 2010 gathering at the Ian Ramsey Centre (Oxford), marking Polkinghorne's eightieth birthday. It represents a selection of prize-winning entries in an essay competition alongside invited contributions from a slate of seminal figures. An impressive assortment from Pat Bennett, Daniel Darg, Junghyung Kim, Russell Re Manning, Nicholas Saunders, James Watkins, and Terry Wright stands alongside rich first-rate contributions from Ian Barbour, Nancy Cartwright (with Eric Martin), Philip Clayton, Robert John Russell, Keith Ward, Fraser Watts, and Michael Welker. The collection is rounded out with an introduction and conclusion by Polkinghorne himself, offering a succinct overview of his work as a 'bottom-up thinker' addressing the 'cousinly relation between science and religion' (3) and, finally, engaging commonalities and contrarieties with his dialogue partners (ch. 16).

The essays run the gamut of engagement with Polkinghorne's work. Some explore areas of concord and discord with other leading figures in science and religion. Ian Barbour revisits a three-way dialogue between himself, Polkinghorne, and the late Arthur Peacocke, highlighting the similarities and differences in their thought, noting contextual variances (i.e., the locales in which each thinker's work was developed and disseminated) as a possible explanation of apparent

divergence (ch. 2). Nancy Cartwright and Eric Martin survey points of congruity and incongruity with respect to Polkinghorne and Cartwright's views on order in nature, surmising that despite differences both seek 'to generate alternatives to the deterministic, mechanical world view promulgated for so long in the name of science' (75, ch. 5). Junghyung Kim suggests fruitful dialogue between Jürgen Moltmann and Polkinghorne might help us begin to 'overcome the current dissonance between biblical eschatology and physical cosmology' (153, ch. 10). Other authors examine in detail crucial aspects of Polkinghorne's thought, unpacking the significance thereof. Terry Wright carefully examines Polkinghorne's views on divine action vis-à-vis 'informational causality' set against the Thomistic conception of primary causality (34, ch. 3). Nicholas Saunders considers Polkinghorne's work on chaos theory, asserting 'boundary conditions' for chaos-based modeling and 'critical realist claims for the theory itself' (65, ch. 4). Daniel Darg proffers a 'computational analogy' for God's relation to the world via complexity-inducing 'if-statements' code, building on Polkinghorne's understanding of natural law (ch. 7). Philip Clayton offers a fascinating reappraisal of Polkinghorne's kenotic Christology, teasing out wider implications for the field of science-religion as a whole – in the context of a conversation featuring 'vastly different theologies, in dialogue with the whole range of sciences' (256, ch. 14). Michael Welker recounts decades of work with Polkinghorne on topics ranging from pneumatology and

eschatology, to developing a 'Relational Ontology' in conversation with John Zizoulas, to examining love and law in conversation with Chinese Confucian and neo-Confucian traditions (ch. 15).

Some authors issue friendly challenges. Robert John Russell takes up the theological significance of time, affirming Polkinghorne's commitment to a 'flowing-time view of nature and history' while challenging his 'dipolar theism' (91, ch. 6). Fraser Watts pushes on Polkinghorne's conceptions of a fine-tuned universe and the universe's end, proposing 'the gradual transformation of the universe as a possible alternative to the new creation theory that Polkinghorne favors' (151, ch. 9). Pat Bennett takes on Polkinghorne's critical realism and 'efforts to establish an equality of relationship and areas of consonance' between science and theology, suggesting instead (following J. Wentzel van Huyssteen) a postfoundational 'flexible transversal rationality' which might enable theologians to 'move forward in a true *trans*disciplinary engagement with the biological sciences' (196, ch. 11). Russell Re Manning intriguingly both commends and critiques the tendency of 'liberal theologies to a rhetorical posture of modesty that sits ill at ease with their apologetic ambition' and challenges Polkinghorne to develop 'a more robust apologetic stance' with respect to his natural theology (215, ch. 12). Others note consonance with other thinkers that Polkinghorne (and his readers) may have missed. Keith Ward advances his unabashed idealism, suggesting 'much modern science is wholly compatible with

idealism, and Polkinghorne's own position is much nearer to [George] Berkeley's than he seems to think' (137, ch. 8). James Watkins explores the hitherto neglected influence of W.H. Vanstone's theory of human creativity on Polkinghorne, suggesting the 'artistic analogy [as] an excellent metaphorical background for Polkinghorne's theology of creation' (241, ch. 13).

There are some minor editorial infelicities. The citation styles could have been standardized (as it stands, contributions slip between modified Chicago, Turabian, Harvard, and MLA styles from essay to essay). Contributors observe varying quotation conventions, oscillating between American and British styles. Several authors refer to their contributions as 'papers' when 'essays' may have been more appropriate for the culled collection (especially as this volume is self-consciously more than mere conference proceedings). A few authors are a bit overly informal in referring to Polkinghorne as 'John' (perhaps appropriate for the presentations, arguably less so for the book). But these are unsubstantial quibbles given the quality of the work as a whole.

The book includes an imminently helpful, chronologically arranged list of selected works – featuring some 29 books and 93 articles. It will make for excellent reading alongside a limited but growing list of works addressing the Polkinghorne oeuvre, including: Christopher Knight's entry on Polkinghorne in *The Blackwell Companion to Science and Christianity* (J.B. Stump & Alan Padgett, eds., 2012); *The Polkinghorne Reader* (with material authored by Polkinghorne and edited by

Thomas Jay Oord, 2010); Dean Nelson and Karl Giberson's *Quantum Leap: How John Polkinghorne Found God in Science and Religion* (2011); Johannes Maria Steinke's *John Polkinghorne: Konsonanz von Naturwissenschaft und Theologie* (2006); and, finally, Polkinghorne's own *From Physicist to Priest: An Autobiography* (2007).

In *God and the Scientist*, Watts and Knight have done a service to Polkinghorne but in so doing they've done a service to us all. They've not only introduced us to a scholar and person they highly esteem and deeply admire, they've introduced us to the subject he loves. A most fitting honor and tribute indeed.

Michael Meredith, *The House of Truth: Living and Dying in a Quantum Universe.* The Word of the Dragon Publishers, 2011, £9.95, Pbk, ISBN 978-0-9568884-0-2.

REVIEWED BY PETER COLYER

Michael Meredith, who is a member of the Science and Religion Forum, conducts us along his personal journey in search of a comprehensive and satisfying structure of universal 'Truth', which will encompass his scientific training, his spiritual perspectives and his personal and family life. In short, a universal meaning of Truth for all areas. The book is intended for persons looking for meaning and truth, offering Michael's own search as an encouragement.

Michael writes beautifully and poetically, enabling us to share his beloved Welsh hills, his long and loving relationship with his wife, and his conversations with numerous friends. As the Archbishop of Canterbury writes in a Foreword, Michael is 'unashamedly personal in his presentation of the issues – recognising, it seems, that most of us can digest new insights as stories when we would find it difficult to digest them as theory.'

These conversations form the material for most of the chapters. His interlocutors include Hindu, Sikh and Muslim friends, an Archbishop, a lay reader and a Christian professor of physics, personal friends not known outside Michael's own circle, and of course his wife Jeanette. One chapter appears to be a near verbatim conversation with Rowan Williams.

As a good engineer, Michael likes diagrams, and through his stories he gradually builds a picture of systematic truth based on the vertical and horizontal y and x axes of a conventional graph, dividing the field into four quadrants. These quadrants transpose into four 'rooms', which form the House of Truth of the title. The four aspects or types of Truth are personal experience (top right quadrant), inner personal debate (top left), open public debate (bottom left) and public empirical verification (bottom right). Michael suggests that the personal search for religious truth follows this plan in an anti-clockwise direction, moving from publicly known information through public and private debate to personal experience, while scientific enquiry moves in a

clockwise direction, from personal inspiration through individual and wider debate to demonstrable fact.

The main scientific discussion of the book occurs in two chapters describing conversations about quantum mechanics with Professor Chris Isham. The primary conclusion appears to be that this is an area of mystery and speculation at least on a par with many religious beliefs. Michael's analysis of thirteen randomly selected statements by Richard Dawkins points out that twelve of them belong in the 'rooms' of opinion and debate and are not scientific truths as implied in the way they are presented. Michael assents to the wisdom found in all the faiths with which he has conducted dialogues, and others besides (120-121). Most of these are desirable statements encouraging peace, harmony, righteousness and humility – one wonders whether they satisfy all the questions raised by lives which are often a long way from these ideals. I would wish that he had said more about his Christian faith than his description of Jesus as 'Ultimate Significance'.

A few small quibbles: Michael is too hasty in dismissing the approach of the Abrahamic faiths towards suffering as a concentration upon the Devil and the effects of sin (116). The biblical statement that 'suffering produces endurance, and endurance produces character, and character produces hope' (Romans 5.3-4) is in fact not far from the more eastern sentiments that Michael espouses. Second, the discovery of DNA is attributed a little too closely to the work of Gregor Mendel (190). Mendel's work on heredity was an important step, but

not quite as close to DNA as suggested. And the suggestion that the four (or five?) rooms of a pre-historic temple in Malta indicate that these ancient people were thinking similar thoughts about truth is too tenuous to be persuasive. This may have been a tongue-in-cheek speculation, though it does not come across like that.

Michael's story is a heart-warming account of his professional and thorough search for Truth. His diagrammatic approach will not suit everyone, but it does provide valuable insights into this difficult and important area.

Joseph Fortier, ***Confluence of Evolutionary Science and Christian Faith.*** Bloomington, IN.: Xlibris, 2012, pp. 266, £14.99, Pbk, ISBN: 978-1-46538-079-1.

REVIEWED BY JEFFREY A. LOCKWOOD

Confluence of Evolutionary Science and Christian Faith by Joseph Fortier is a thoughtful and novel reformation of Catholic theology which accommodates evolution by incorporating complexity theory. Fortier's work is scholarly and systematic, but the book does not bog down in academic pedantry due to the author's heartfelt connection to the subject. In short, *Confluence* is an intellectually sound, theologically earnest contribution to evolutionary theology, a project that arguably began with Pierre Teilhard de Chardin's audacious work and now incorporates Stuart Kauffman's insights on complexity.

Confluence consists of three parts, the first two are relatively easy and the third is appropriately difficult. The book begins with a concise and compelling dismissal of ahistorical biblical literalism—a minority view among theologians but the favoured straw man of Daniel Dennett and Richard Dawkins. Fortier explains the function of myth in recounting the history of Genesis; the biblical stories of creation were intended to express the spiritual nature of humans and God's relationships with the world—not the actual course of biophysical events.

In the second part, Fortier covers evolution, from molecular genetics to fossil formation to radiocarbon dating. For undergraduate students and lay readers, this is a necessary foundation for what is to come. For most scholars, Chapters 2-4 can be skimmed to review the basics. I might quibble about a few details (e.g., sympatric speciation is overlooked), but the science is sound and the examples, figures, and historical accounts make a potentially dry, mini-textbook into readable prose.

In the third part, Fortier builds his argument using the work of Teilhard and Kauffman. He sets the stage using the typology of science-faith stances proposed by Ian Barbour. Beginning with the approach of conflict, Fortier contends that this strategy is founded on simplistic and mistaken views of religion and science. The next option, independence, holds that religion and science are wholly autonomous enterprises, lacking shared content around which to build fruitful discourse—a view that Fortier rejects. He also sets aside the strategy of dialogue as

being too-easy compatibilism. Fortier favours integration in the form of a theology of nature (beginning with and reforming religion through understanding science) rather than natural theology (beginning with science and inferring God via natural phenomena).

Fortier next provides a concise account of complexity science, based largely on the work of Stuart Kauffman. Distilling this field requires omitting some important elements and simplifying complicated ideas, but Fortier does a credible job. He makes clear that reductionistic accounts of nature are often insufficient, and that the concept of emergence is vital to understanding evolution. In short, law-like ordering of complex, adaptive systems gives rise to overall regularities but does not dictate the course of individual events. From Kauffman's 'order for free' principle one might infer that the biophysical world is drawn toward ever greater complexity—from physics to chemistry, to biology, to consciousness, to Teilhard.

Fortier develops his evolutionary theology by drawing parallels between—and exploring flaws within—the views of Teilhard and Kauffman. The similarities are intriguing, but the claim that Teilhard foresaw much of modern evolutionary biology and complexity science seems overly bold. He clearly anticipated punctuated equilibrium, but it's less convincing that various passages presaged emergence, phase transitions, edge-of-chaos dynamics and other elements of complexity. Teilhard wrote with such evocatively poetic imprecision, that clear linkages to the mathematically rigorous work of

complexity scientists are plausible but not entirely compelling.

What if Teilhard had known about modern evolutionary science and Kauffman's work? Fortier proposes that he may well have modified his view of evolution being goal-directed and anthropocentric, recognising purposive evolution reflected theological optimism rather than biological empiricism. But even Fortier balks at the implication that biological complexification could have played out differently—that human consciousness was entirely contingent.

The fundamental difference between Kauffman and Teilhard was that the latter believed a complete account of evolution had to incorporate the religious dimension. Kauffman grudgingly admits to a kind of pantheism in which God is the sum of biophysical existence, but this is less than Teilhard would accept. And Fortier doubts that the materialistic determinism to which complexity science is committed can account for genuine novelty. However, it's not clear why emergence necessarily fails in this regard. The deeper problem, as Fortier astutely points out, is that science cannot address whether such novelty—whatever its origin—comes with meaning or purpose. Had Fortier been able to moderate a discussion between Teilhard and Kauffman, perhaps the former's teleology would have been moderated by contingency and the latter's pantheism would have been expanded into panentheism.

Integrating Christian theology and evolutionary biology vis-à-vis complexity gives rise to fascinating, if

not entirely satisfactory, responses to two perennial issues: God's role and the problem of evil. The challenge in making sense of God and science is preserving the relevance of the former and the integrity of the latter. Fortier maintains that God evinces the selfless love of 'a helping servant.' In respecting human dignity, God both longs for our completion and allows the world to self-organise without intrusive meddling. Omnipotence is viewed not as forceful coercion—as people tend to assume—but defenceless vulnerability (akin to the 'persuasion' of process theology and the work of Jesus, Gandhi, King, and Mandela).

With God being engaged in long-suffering love of humanity, we come to the issue of theodicy. Natural selection is a story of enormous suffering. If the point of Teilhardian progress is to bring about the end of suffering through evolutionary unification, why did an omniscient and omnibenevolent God make a fragmented universe in the first place? Appeals to free-will don't suffice leaving us with raw, epistemic humility. At least Fortier tries to relieve the misery of our having to bear 'the intelligent design creationists and evolutionary materialists as they continue their tedious and ultimately pointless debate.'

Confluence is an admirable and perhaps achievable objective. After all, science and religion are grounded in faith (that empiricism is reliable and God exists, respectively) and both are products of the human mind. And it behooves us to remember that we are working from a single case—ourselves. Moreover, as the investment brochures warn, past performance is no

guarantee of future returns. Fortier sagely notes that the backward-looking methods of science are not well suited for anticipating novelty. But the forward-looking approach arising from a religious attitude of hope is prone to imaginative flights of fancy. Fortier recognises the potential and admit the limits of both methods, and this seems to be crucial if, as he concludes with a rare and refreshing dip into poetic metaphor, 'Somewhere ahead in the forest, the two streams join and become confluent.'

In sum, Fortier's book had the enchanting quality of tempting me to imagine a conversation between Teilhard and Kauffman:

Do you agree with Einstein that God doesn't play dice?" asks Teilhard.

"I don't know if there is a God, but I know that the dice are loaded," Kauffman replies.

"Loaded dice," Teilhard chuckles, "what a lovely image."

"Yes, but I prefer to imagine God as the ultimate, strange attractor," say Kauffman.

Nodding, Teilhard adds, "Maybe so, as long as your attractor has a personality."

"I said it was strange," Kauffman answers.

"Love *is* wonderfully strange," Teilhard replies.

REVIEWS REPRODUCED FROM ELSEWHERE

Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion and Naturalism.* Oxford: Oxford University Press, 2012, pp. 376, £17.99, Hbk, ISBN 978-0199812097.

REVIEWED BY DAVID LEECH

A version of this review was first published in *The Tablet* 10th May 2012. Reproduced with the kind permission of the publisher: http://www.thetablet.co.uk.

The past several years have seen a flow of Christian responses to New Atheism and its 'Four Horsemen' (Dawkins, Dennett, Hitchens, and Harris). In this new book, Alvin Plantinga, described on the dustjacket – not unreasonably – as 'the world's leading philosopher of religion', adds his very considerable contribution to the debate.

Citing C. D. Broad's remark that science-religion discussions 'had acquired something of the repulsiveness of half cold mutton in half-congealed gravy', Plantinga quips that the Four Horsemen's contributions are by contrast overheated and overdone. His own contribution – which he hopes will be 'more judicious and more appetising' – amounts to the striking argument that 'there is superficial conflict but deep concord between science and theistic religion, but superficial concord and deep conflict between science and naturalism.'

His argument can be summarised as follows: in Part I, he notes areas of putative conflict between science and

Christian belief (evolution, miracles, special divine action), but argues that the conflicts are only apparent, and there is in fact no conflict between theistic religion and sober science, but only between theistic religion and philosophical 'add-ons'.

For instance, in the case of evolutionary theory, the claim that evolution is *unguided* is an add-on, as is the assumption that the physical universe is a closed system. Special divine action in the world is compatible with the various conservation laws because these laws apply to systems that are causally closed, but it is not a part of physics to claim that the universe *is* a closed system. Moreover, contemporary quantum mechanics doesn't pose a problem for divine special action anyway, because it only assigns probabilities to possible outcomes.

In Part II, Plantinga acknowledges that there are some areas of actual conflict between science and Christian belief, in particular evolutionary psychology and scientific scripture scholarship. Especially noteworthy here is his treatment of the new theories of religion – 'the place to look for the most overt conflict' – which claim that religion is either adaptive or a by-product of our having the kind of brains we have.

These, he notes, are *real* conflicts, but they are only superficial, because they don't supply defeaters for theistic belief. This is because the scientific evidence base, constrained by methodological naturalism ('in science we should proceed as if the supernatural is not given'), makes up only a part of the total Christian evidence base.

In Part III Plantinga argues that there is *concord* between Christian belief and science. He examines the 'fine-tuning' arguments (cosmological and biological) for theism, and claims that they offer non-negligible evidence for theistic belief. In chapter 9 he goes further, arguing that there are several ways in which Christian and theistic stances are 'deeply hospitable to science'. This is because, according to Christian belief, God has created humans in his image, and this means that we – like God himself – can have knowledge about reality; he has created us so that there is a match between our cognitive capacities and the world.

On the other hand, Plantinga argues in Part IV ('Deep Conflict') that this does not hold in the case of science and naturalism. In this case there is only superficial concord, but in reality, there is a serious conflict. Here he redeploys his famous Evolutionary Argument against Naturalism: it is improbable, he argues, granted naturalism and evolution, that our cognitive faculties would be reliable. In that case, the naturalist has a defeater for the claim that her cognitive faculties are reliable. But since all her beliefs without exception have been produced by her faculties – including her beliefs in naturalism and evolution – these are beliefs which it would not be rational for her to accept (it would be self-referentially incoherent).

Where the Conflict Really Lies wittily and authoritatively exposes the New Atheist's ignorance of contemporary serious debate in the philosophy of religion, and their preference for 'inane ridicule' to argument.

Those familiar with Plantinga's work will recognise his signature Reformed Epistemology approach here: Christian belief can be rational without evidence or argument, because Christian belief can be 'properly basic', so one chiefly needs to fend off 'defeaters'. Catholic philosophers, by contrast, are likely to evince a deeper respect for natural theology, evaluate more positively the prospects for human reason in acquiring religious knowledge, and wonder whether fending off defeaters is enough. But there is nevertheless much common ground here on which Reformed and Catholic philosophers can agree.

Plantinga's argument can be fairly heavy going in places. Although intended for 'anyone with an interest in the subject', some parts may be forbiddingly technical for the non-specialist. That said, however, it is worth the extra effort invested. Plantinga is an intellectual heavyweight in the philosophy of religion, and those who want to keep abreast of the best work in this area would be well advised to read this long-awaited contribution.

SHORT REVIEWS BY THE EDITOR

Michael Palmer, *The Atheist's Primer.* Cambridge: The Lutterworth Press, 2012, pp. 169, £15.25, Pbk, ISBN 978-0-7188-9297-5.

This book is an abridgement of Palmer's *The Atheist's Creed* (it omits the primary source material) and it offers an engaging introduction, accessible to the general reader, to the history of atheism and to some of the main contemporary philosophical arguments for atheism. In doing this it reclaims atheism as part of a richer tradition than its neo-Darwinist 'new atheist' incarnation belies. Given that current debates about atheism within the field of science and religion tend to be shaped by 'new' atheism, there is much benefit that could be gained from more consideration of the more 'philosophical' atheists, particularly Nietzsche, Marx and Freud who form Palmer's central trinity of non-theists.

Palmer's brief history of atheism serves as a useful reminder that the tradition has roots in ancient Greek thought and his critiques of the design, cosmological and moral arguments, and of miracles and religious experience together with his consideration of evil present a cogent summary of the main positions including all the usual suspects from Hume, Leibniz and Dostoevsky to John Hick, Alvin Plantinga and J. L. Mackie. Palmer's own argument in favour of positive atheism would be enhanced further with more consideration of the differences between the scientific reductionism of the new atheism and the atheism of

Nietzsche, Freud and Marx. He notes that Nietzsche would be 'fairly dismissive' of Dawkins' or Dennett's atheism (an understatement if ever there was one) but his discussion would be greatly enhanced by serious scrutiny of evolutionary ethics and epistemology. It would also have been interesting to hear Palmer's response to alternative readings of the history of atheism, particularly Gavin Hyman's. Despite that, the book's summary of the main positions is an interesting read which highlights the more potent arguments for atheism and it will be especially helpful for those without a philosophical background.

Cornel W. du Toit (ed.), ***Homo Transcendentalis? Transcendence in Science and Religion: Interdisciplinary Perspectives.*** University of South Africa: Research Institute for Theology and Religion, 2010, pp. 251, Pbk, ISBN 978-1-86888-65-55.

This volume, explores different aspects of transcendence (scientific, philosophical, theological and aesthetic) and represents the proceedings of the 2010 conference of the South African Science and Religion Forum. It endeavours to make a distinctly South African contribution to the science-theology conversation and this leads to an interdisciplinary collection through which both scientists and theologians might better understand themselves and the world.

The book is based on the premise that human are wired for transcendence and so we cannot escape it, even in a post-metaphysical age. Cornel Du Toit's

chapter aims for a redefinition of transcendence that embraces the postmodern rejection of metaphysical transcendence. He proposes an immanent transcendence experienced in the startlingly new, tragic and unknown. The rest of the chapters deal with radically diverse aspects of transcendence including transcendence in physics (defined in terms of the discipline pointing towards more than what is available to its method), transcendence in mystical theology and transcendence in traditional African religions. The interdisciplinary angle makes the book an important contribution to the consideration of transcendence. There are insights informed by anthropology and neuroscience in the chapters by Etienne van der Walt and François Durand. Amanda du Preez's fascinating chapter on modern art and the photography of Oleg Dou draws parallels between posthumanism and the aesthetic goal of transcendence and in doing so she warns of the potential dangers in the obliteration of immanence. Every chapter offers something of interest to those working in the field of science and theology and the book showcases the evident dynamism of the South African Science and Religion Forum.

Russell A. Butkus and Steven A. Kolmes, ***Environmental Science and Theology in Dialogue.*** New York: Orbis Books, 2011, pp. 244, £17.99, Pbk, ISBN 978-1-57075-912-3.

Butkus and Kolmes present a thought provoking volume that puts eco-theology at the heart of the relationship between science and theology, and which seeks a dialogue between the two through interdisciplinarity. The book will make a helpful teaching resource and textbook and it is aimed primarily at students: there are questions for discussion, learning exercises and further reading recommendations at the end of each chapter. This volume is more than just a student resource however: it presents a methodology that seeks to integrate the scientific and theological analyses of ecological problems and so it would prove useful to a wider audience.

The book covers various specific crises including the salmon crisis and climate change while exploring models of God to develop suggestions for sustainability. There are some important discussions that are omitted – for example, the authors stress that the business community is needed as a committed partner for us to free ourselves from our destructive habits but there is no robust consideration of the role that capitalism has played in environmental destruction. Ecofeminism (only briefly mentioned) has much to say about this and it could enrich their valuable search for a thoroughly interdisciplinary approach. That said, there is much here to spark sober reflection on our current ecological crisis.

PUBLICATIONS BY MEMBERS OF THE FORUM

Peter Colyer *The Prescientific Bible* (forthcoming June 2013)

BOOKS AVAILABLE FOR REVIEW

Robert W. Fuller *Religion and Science: A Beautiful Friendship.* Ebook available at https://www.smashwords.com/books/view/209786

John Haught, *Science and Faith: A New Introduction.* Paulist Press, 2013.

Russell Re Manning (ed.) *The Oxford Handbook of Natural Theology.* Oxford University Press, 2013.

Russell Re Manning and Michael Byrne (eds.), *Science and Religion in the Twenty-First Century: The Boyle Lectures.*

Jeanine Thweatt-Bates *Cyborg Selves: A Theological Anthropology of the Posthuman.* Ashgate. 2012.

Frans De Waal, *The Bonobo and the Atheist: In Search of Humanism among the Primates.* W. W. Norton, 2013.

Amos Yong, *The Cosmic Breath.* Brill. 2013.

The Editor welcomes offers to review these publications. Please contact her on L.Hickman@newman.ac.uk

NOTE: This Journal aims to publish original and reprinted reviews of books published in the science-religion area. The Editor regrets that she is not able to publish, or enter into dialogue on, original articles not tied to a book in the field.