Reviews

Eric Dietrich, Chris Fields, John Sullins, Bram van Heuveln, Robin Zebrowski

Great Philosophical Objections to Artificial Intelligence.

London, UK: Bloomsbury Academic, 2021. 300pp. pb. £31.69. ISBN 9781474257107

As IT is turning into QIT (quantum IT) and cognitive science amalgamates with neuroscience and psychology, one may think modern science is taking a step back to the old days of natural philosophy. Two of the authors of this book are qualified philosophers and two professors of cognitive science, based in the US. The fifth author, Chris Fields, is an independent scholar based in France. They certainly teamed well and produced a coherent metaphysical analysis of the history of artificial intelligence (AI). Although the writing does not come anywhere near Christian theology or any theism at all, it does not grind any axe against them either. What I most liked was good understanding of the field of mathematics and the history of computing, which allowed them to expertly survey and examine the AI area from different angles, using very accessible, unambiguous philosophical and technical language.

Chapter 1 is a brilliant explanation of the foundational arguments against AI, related to Goedel's theorem and other classics (Roger Penrose's The Emperor's new Mind, 1989 and The Shadows of the Mind, 1994), making the right conclusion that evaluating Penrose's and other arguments is impossible because they converge on the issues of consciousness, admitting 'we currently have no idea what consciousness is, nor how any physical thing can be conscious' (15).

Chapter 2 continues with describing the Turing imitation game following his ideas that intelligence does not have a precise definition, but it is something we attribute to machines as well as humans in order to make sense of the world. Intelligence and consciousness are separate categories and attributing intelligence to entities does not require them to be conscious. Chapter 3 tells us how later logical empiricism and behaviourism rejected philosophy (the mind) (48) and how philosophers reclaimed the mind with the 'brute facts: we cannot prove others are conscious but we know we ourselves are conscious, have beliefs, hopes, desires emotions, …rich inner lives…beyond reach of science' (49).

Chapter 4 turns more technical in describing the early paradigms for AI: symbol processing, neural networks, which currently is the front runner, embodied situation cognition, dynamic systems and hybrids while Chapter 5 delves into the problem of meaning. The arguments from the Chinese room thought experiment are well explained (95) and the intricacies of designing a robot pencil sharpener are demonstrated (101), to realise in the end that, again, it is all down to consciousness (109). The authors describe why implementing it is a 'unique roadblock to science' (119-20).

Chapter 6 expertly describes how the AI scientists endeavoured to 'put humanity's cognitive specialness in silicon' and failed because 'humans are not mono-intelligences, but open-ended intelligences' (139). Nevertheless, a great advancement in algorithmicising intelligence has been achieved. To make progress 'requires advances in the problem of meaning (semantics) and … in understanding how humans think', but the former 'requires understanding of consciousness' or arguably, 'domain-specific intellectual automatisms' (150-160). Chapter 7 moves the debates from semantics to awareness and the fact that 'we lack generally ac-

knowledged, public, observational methods for determining whether an entity is conscious'. For this reason, it 'feels right' that 'noninfant humans are regarded as conscious by definition' (175). These are 'non-ostensive definitions' [which] can be either theoretical or operational'. An example of the former is Tononi and Koch's (2015) definition as 'integrated information' according to their Integrated Information Theory (IIT), while the latter is based on behavioural and physiological signs like EEG rhythms and on reporting experience or lack of it after surgery. For reasons already explained, non-ostensive definitions are considered 'morally suspicious' (176-177). The authors then make a brief review of the recent work in neuroscience and psychology producing a plethora of new concepts and terms like phenomenal and non-phenomenal awareness, bodily, somatic, perceptual, imaginative and other awareness, spiritual consciousness and many others, which are supposedly paving the path to a psychological neurological model of the human mind and cognition (177-196), but the reader should be careful here as this direction is very controversial.

Chapter 8 is devoted to the ethical issues surrounding AI applications. One of the authors argues that humans are 'examples of intelligence run amok, leading to the unjustified extinction of thousands of species, many of them sentient' 'On the available evidence, then it should be possible to implement machines that are better than we' (199). I am not sure of that. This affirmation reminds me of the persuasion Eve received from the serpent in the garden of Eden. Such machines would be helpful as tools but not as independent agents with ethics based on rule-based algorithms and no consciousness. However, the authors' concerns about political, legal, social, and ethical implications of 'AI powered consumer predictive technologies' remain, which inspired the formation of organisations like the Algorithmic Justice League www.ajl.org (202). Other topics discussed are the semi-autonomous and autonomous weapons (204-210), debated intensively now, as well as the autonomous vehicles (210-217). Finally, Chapter 9 discusses the question of whether embodied AIs can be ethical agents.

I learned a lot from this brilliant writing, which regrettably, fails to recognise the transcendent uncreated trinitarian God of love, who offers ethics based on life situations, described in the Bible in a way beyond mathematical definition. Human personhood in His image is not part of this philosophical discussion, yet the book certainly is very informative and useful to students in the combined area of AI science, philosophy and ethics, with over 200 citations and bibliography of key readings in the field.

Todd Kantchev is Reviews Editor of Science and Christian Belief with degrees in medical physics, computer science and engineering.

Matthew Vest

Ethics Lost in Modernity: Reflections on Wittgenstein and Bioethics

Cascade Books, 2023. 243 pp. pb. £25.
ISBN 9781666747188

I was intrigued by the title of this book, as I have an interest in bioethics, and have lectured on aspects of this subject to University undergraduates studying biological sciences. I knew very little about Wittgenstein and hoped to be educated and find new insights into how complex bioethical decisions might be made. I was profoundly disappointed. The book is largely based on Matthew Vest's PhD thesis at the University of Nottingham, which was supervised by John Milbank. Although there are some variations from the original it reads like a PhD thesis! It appears to be erudite and scholarly, with large numbers of quotations from

eminent philosophers who have had something to say about Wittgenstein. However, it is largely incomprehensible, and will probably only be a resource for professional theoretical ethicists. The book should be read with the help of an online dictionary of German and Latin words and phrases. I suspect that the author may have some interesting things to say, but like Wittgenstein's writing, his overall message is unclear. Of course, Wittgenstein didn't write anything about bioethics, so the arguments are based around his mysticism and 'language games'. Nonetheless I will try to summarise what I think Vest is trying to say.

Vest argues that, for practical bioethics, there is a gap between technical/scientific advances and the moral questions that these create. There is nothing surprising in that statement. Vest suggests that philosophy is usually trying to play catch-up and that the field of bioethics is dominated by modern scientistic and quantitative reasoning, which fails to respect the importance of the individual, and has ignored pre-modern ways of thinking. I am not sure that this analysis is correct, and it is an unfair criticism of those who engage in bioethics from a religious (Christian) worldview. He is also critical of the bioethical approaches adopted by Beauchamp and Childress in their widely cited textbook 'Principles of Biomedical Ethics' (now in its 8th edition) which he claims assumes a 'common' or 'universal' morality, thereby bypassing foundational questions (43). In Vest's words they use the language of autonomy, beneficence, nonmaleficence and justice without discerning exactly what these terms mean, describing them as 'cosmopolitan liberals who define their own secular morality (44). Instead, Vest seems to advocate a form of apophatic ethics, which arises from some aspects of Orthodox Christian theology, but which has less to say about the explicit ethical and moral commandments that are contained in scripture.

In essence Vest argues for a more personal approach to bioethics, which is more closely aligned with religious (Christian) and mystical perspectives. There is nothing surprising in that, and most Christian would agree in principle. Vest builds on Wittgenstein's ideas of 'language games' – when we say 'justice' or 'autonomy' or 'beneficence' what exactly do we mean? The answer will be different for each person. Autonomy might harm an individual who makes foolish decisions. Utilitarianism (the greatest good for the greatest number) assumes that we all agree on what is the 'good'. I can talk about pain as I experience it, but I can't begin to fathom another person's pain. So, we need to be very careful about the words that we use. Science may be able to identify 'biological life' but it cannot determine what varieties of life are more meaningful than others and it is not equipped to address questions of ethics. There is much truth in this. However, Vest claims that bioethics is trapped within unexamined 'language games' from which we need to escape. Wittgenstein wasn't anti-science (neither did he identify as a Christian), but spoke of the traditions of wonder and mystery that can't be expressed within scientific thinking. For Wittgenstein (at least in his thoughts and actions expressed in his later lifestyle), the way we live is much more important than the words we use. Some of these concepts will resonate with Christians who are involved in making practical ethical decisions, but they are lost within an unnecessary mountain of 'scholarly' verbiage in the book. If there is a disconnect between quantitative science and the process of making moral bioethical decisions, then this will need to be expressed in language that can be understood by biomedical scientists.

The book is heavy with ethereal philosophical discussions, but it offers little practical guidance on how to make complex bioethical decisions.

Keith Fox is Editor of Science & Christian Belief, Emeritus Professor of Biochemistry in the University of Southampton and former Director of the Faraday Institute for Science and Religion in Cambridge.

Jongseock James Shin

Natural and Cosmic Theodicy: A Trinitarian Panentheistic Vision

Eugene, OR: Pickwick Publications, 2022.
282 pp. pb. £34.00. ISBN 9781666734928

In this impressive scholarly book, Jongseock James Shin tackles that most difficult of theological conundra, the problem of why there is evil, pain and suffering in a universe made by the Christian God, who is taken to be supremely good. He does this in dialogue with four main interlocutors—Catherine Keller, Arthur Peacocke, Wolfhart Pannenberg and Robert Russell—and then produces a theodicy of his own. The book covers a great number of topics in the dialogue between science and theology in recent decades, and the reader acquainted with these will be the better equipped to engage with the technicalities herein.

Shin is concerned to unite creation and redemption, with the latter meaning redemption of the whole cosmos. Redemption is thus to embrace the universe as a whole, which, on current cosmological theories, will eventually either freeze or fry, and will include the living world of nature. He is particularly concerned, like Christopher Southgate and others before him, with animal suffering—even insects suffer pain, he says.

Readers of this journal may be put off by Shin's adoption of panentheism which takes us away from classical orthodoxy. The plain meaning is that creation is part of God but the term is admittedly ambiguous and Shin offers his own nuanced interpretation. My own preference remains with John Polkinghorne's shunning of this term in favour of affirming and balancing God's transcendence and immanence.

Arthur Peacocke is an interlocutor who proposes panentheism. However, Shin is critical of Peacocke's account of divine action as whole-part causation. This is inadequate, he says, since it excludes miracles and special divine action, through which Shin sees God working soteriologically for the eschatological fulfilment of creation.

Catherine Keller is further removed from classical orthodoxy in espousing process thought as well as panentheism. Her God does not create ex nihilo (from nothing) but only ex profundis (out of the depths, i.e. chaos) or ex vetere (out of the old). In responsive love, God lures the creation to fulfil the potentials which emerge for it through mutual interaction with God. This is positive but does not do enough for Shin, since God is not then powerful enough to be responsible for the world's evils, nor indeed to overcome the chaos which remains co-eternal with God. Thus, there is no eschatological redemption, central for Christian theodicy. In contrast to Keller, Peacocke's God creates ex nihilo, so is omnipotent, but chooses to limit himself in divine kenosis. Importantly, for Shin the bodily resurrection of Jesus is vital for his theodicy as pointing to the eschatological redemption, not only of humans, but of all nature and the cosmos. He draws on N. T. Wright and others to support the truth of the resurrection as an historical event and critiques both Keller and Peacocke as downplaying this as some sort of psychological encounter with Christ.

Wolfhart Pannenberg is helpful since he affirms Christ's resurrection as proleptically revealing the eschatological consummation of history. God creates ex nihilo and through general and special divine action guides the creation to its ultimate destiny. Just as there is continuity and discontinuity between Christ's

pre-resurrection and post-resurrection body, so there is between the end of the present creation and the new creation.

Robert J. Russell takes on much of Pannenberg's approach, though with a more up-to-date grasp of the science. Whereas Pannenberg uses the analogy of the Spirit's action with fields in the sense of Faraday, Russell posits bottom-up divine action through quantum indeterminacy in his NIODA (Non-Interventionist Objective Divine Action) approach. He also affirms—and Shin agrees—with Pannenberg but contra Peacocke, the doctrine of creatio ex nihilo in the sense of a temporal beginning to the universe, and engages specifically with the Hawking-Hartle quantum gravity model; this then leads to creatio continua through cosmic fine-tuning and biological evolution.

Shin draws together the insights of his interlocutors to produce his own kenotic-eschatological panentheistic vision of creation as a Trinitarian project in which God co-suffers with his creatures and lures them to consummation in the new, redeemed creation. The book is a difficult read, not made easier by poor copy editing and considerable repetition. It is, nevertheless, a worthy contribution to the modern science-religion dialogue and the vexed question of theodicy.

Rodney Holder is former Course Director of The Faraday Institute for Science and Religion and a Fellow Commoner of St Edmund's College, Cambridge.

Alexei V. Nesteruk

The Universe in the Image of Imago Dei

Eugene, Oregon: Pickwick (Wipf and Stock), 2022. 309pp. pb £37 ISBN 9781666711233

Discussions on the relation between science and religion often take a familiar course in the English-speaking world. This book is profoundly different. Written not just from a theological perspective, but one informed by the tradition of Eastern Orthodox Christianity, its emphases are strikingly different from Catholic or Protestant thought. There is stress on patristic theology, particularly thinkers such as Maximus the Confessor, a Byzantine seventh century theologian. In addition, the writer, a physicist and theologian, draws heavily from post-Kantian traditions in European philosophy, notably that of phenomenology.

That focus on phenomenology means that the judgement of humanity becomes of central importance, because how things appear to humans matter. Alexei Nesteruk, a physicist and theologian, argues that human beings must be at the centre of the issue of mediation between theology and science because we cannot escape the centrality of human consciousness in the world. He claims (35) that scientific research 'is bypassing in its scope the problem of the human presence as the central disclosure and manifestation of the universe'. That, the author concludes, is the leading theme of the dialogue between science and theology. We should not concentrate on the natural world as investigated by science, (to which we have what the author calls 'the natural attitude') so much as the nature of the human person made in the image of God. Much is made of the 'Logos' indwelling the universe, and identified with the Incarnation, which, for Nesteruk, was an event of unique, and unrepeatable, importance. He says, (123) 'the event-like truth of the Incarnation places it in the class of those phenomena whose intuitive saturation invokes an infinite hermeneutics of its appropriation.' If this sentence seems impossibly opaque, its jargon is typical of what appears on every page in this book. We hear a lot of 'saturated phenomena' and 'hypostasis', as in the 'hypostatic inherence of the universe in the Logos of God.' The influence of Byzantine theology, in all its obscurity, is

very clear. There is a glossary of terms at the end of the book, but it must be admitted that sometimes the glossary seems as difficult to interpret as the terms it is trying to explain. While the stress that all science is human science, and the consequent necessity not to forget the function of human consciousness, is salutary, the result can be an excessive emphasis on the role of humanity. Cosmology, we are told (160), is anthropic in its very constitution.

For Nesteruk, sciences must be 'geocentrically bound' (152) because of the human position in the universe. The role of human consciousness, leading, as the author says ultimately to the possibility of the Incarnation, raises questions about the relevance of the new discipline of astrobiology with the possibility of intelligent life not just on earth but on other exoplanets. This is dealt with briskly with the assertion that 'the existence of exoplanets with similar physical conditions does not guarantee an actual existence of life.' Necessary conditions are not sufficient ones.

It can be refreshing to read a book rooted in different theological and philosophical traditions from one's own. It can cast new light on old problems, and this book is particularly strong in stressing the role of God in the Universe through his Logos, as Incarnate in Christ. Yet obscurity can sometimes be mistaken for profundity. With its clunky language and technical terms, this book is an exceptionally difficult one to read for anyone who believes that philosophical clarity is a virtue.

Roger Trigg is Senior Research Fellow at the Ian Ramsey Centre, University of Oxford

James Hannam

The Globe: How the Earth Became Round

London: Reaktion Books, 2023. 376 pp. hb. £13.89 ISBN 9781789147582

The story of how we came to realise that the earth is round is a fascinating case study in the relationship between science and religion. Just like the Copernican Revolution, the story has become ammunition for a certain type of atheist to criticize Christianity - and is also popularly misunderstood.

James Hannam is a noted historian of science. He is a member of the Science and Religion Forum and the British Society for the History of Science, and has published articles in the Spectator, the Mail on Sunday and History Today, as well as in academic journals. He is a Christian, but writes as an academic with no axe to grind for or against religion.

The Globe is a masterful tour de force. James Hannam works through the worldviews of the major ancient civilisations, tracking through to the discovery that the earth is round in ancient Greece. He then describes how that belief spread across the world of middle and late antiquity. With some notable exceptions, Christians, Jews and Muslims mostly embraced the idea. He sets the story straight about Columbus and discusses the Chinese opposition to the Western notion of a spherical earth. As Western knowledge spread in the colonial era, the idea became gradually more accepted. James then tracks the rise of flat-earth conspiracy in 19th century England and discusses the place of the flat-earth in modern day society.

Writing about this topic gives an opportunity to discuss in one book how almost every major civilisation across the last four millennia have understood their place in the cosmos. This makes discussion of flat-earth ideas far more engaging than one might initially think! This is a broad topic, but James writes with a great economy of words, enabling depth and breadth. There are points where The Globe gets quite technical. He gleans the worldview of obscure phi-

losophers through passing references of later writers, discusses ambiguities in the original languages, and points of contention between scholars. However, for the most part this book is quite easy to read. He does not assume any significant background knowledge about people and ancient civilisations.

The author points out that the historic belief in a flat-earth should not cause us to belittle the people of the past – we would believe in a flat-earth if it was what we were taught, since the world does seem flat. The Egyptians, Babylonians, Persians, and Chinese all believed that the earth was flat and that they inhabited the centre of it. Hence the Mediterranean is the "middle sea" and China is the "middle kingdom". It is only when we travel long distances and see changes in the night sky, or find that sunrise occurs earlier, that we start to have reasons to doubt the flat earth. And even then, there are other explanations of these phenomena. So, it is not surprising that ancient civilisations assumed that the earth was flat, and the spherical earth took many centuries to be widely accepted.

James Hannam provides insightful discussion of biblical cosmology in both Old and New Testaments. The Hebrew scriptures describe the world as a flat-earth (e.g., "the four corners of the earth" from Isa. 11:12), because they describe the world as it is seen and experienced. However, the biblical texts do not teach that the earth is flat – they are concerned with other matters, and such descriptions are more poetic than scientific. These distinctions are helpful and no doubt important for other science-religion questions. The author further points out an intriguing comparison between the temptation narratives in Matthew and Luke. Matthew writes that the devil took Jesus "to a very high mountain and showed him all the kingdoms of the world" (Matt. 4:8); implying that all the world's kingdoms could be shown to Jesus if He was taken somewhere sufficiently high. Luke writes: "The devil led him up to a high place and showed him in an instant all the kingdoms of the world" (Lk. 4:5). Instead of using the more familiar term kosmos for world as Matthew does, Luke uses the word oikoumenē, which refers to the three continents of Europe, Africa and Asia. This subtle difference indicates a difference in cosmological perspective. Matthew uses the language of Hebrew flat-earth cosmology, whereas the Gentile Luke, writing with the knowledge of the spherical earth, uses the language of Greek cosmology.

In summary, The Globe is an excellent example of history-of-science writing. It is expansive in scope without being excessively detailed. It is neither dumbed down, nor impossible for the layman. The story of how the spherical earth came to be believed is an instructive case study in the relationship between science and religion. Many in the church and outside would benefit from reading this.

Carl Thomas holds a PhD in atmospheric physics from Imperial College London and is currently in ministry training at St Helen's Church, Bishopsgate.

Jamie Boulding

The Multiverse and Participatory Metaphysics: A Theological Exploration

Abingdon: Routledge, 2022. 188 pp. pb £130. ISBN 9780367857165

This is a book for those interested in metaphysics and philosophical theology rather than for those who I understand to be the average readers of Science and Christian Belief. Its stated aim is "to provide the first systematic theological engagement with the key metaphysical issues arising from multiverse theory" (1). Boulding seeks to achieve this by employing participatory metaphysics – the

idea that creation exists by participation in God (165) – based on the work of three key thinkers: Plato, Aquinas and Nicholas of Cusa.

The first chapter gives a good introduction to the current range of multiverse theories, and to the ideas underlying participatory metaphysics. Boulding wants to move beyond the dichotomous views that a) the fine tuning of the universe suggests the existence of God and b) that the existence a multiverse explains fine tuning and so dispenses with a need for God. He believes that a dialogue between multiverse theories (of which there are many and on which no agreement exists among scientists) and participatory metaphysics is a fruitful way forward.

The next three chapters look at Plato and cosmic multiplicity, Aquinas and cosmic diversity, and Nicholas of Cusa and cosmic infinity, respectively. In each chapter Boulding also interacts with three modern writers on the multiverse and tries to show how participatory metaphysics is relevant to their views. So, he has a total of twelve "conversation" partners in this relatively short book. The fifth and final chapter summarises the outcomes of Boulding's study and suggests future directions for the science and theology dialogue. The book is based on Boulding's PhD thesis and the writing betrays its origins – with somewhat too much repetitive summarising.

On reading the book I felt that I had learnt much about Platonic and Neoplatonic thought but not much theology, and in particular specifically Christian theology. Much of the participatory metaphysics discussed seems to ignore biblical theology. For example, Boulding states that Aquinas developed his participatory metaphysics to explain the relationship between the diversity of creation and the unity of God's perfect being (84, 98), but no mention is made of God's Trinitarian being, the paradigmatic example of unity and diversity (cf. Gunton's The One, The Three and The Many). Throughout the book there seems to be an overemphasis on the oneness and unity of God, which fits well with Platonic and Neoplatonic thought but less so with the specifically Christian concept of the Trinity.

In discussing Nicholas of Cusa's views, Boulding say that one participatory insight about the God-creation relationship is "so in God everything is God" (124) which seems more like pantheism or panentheism than Christianity. He explains this by saying "'in' signifies participation, and not conflation or direct identification" (125), but then talks about the "enfolding" of all things on God (125) and "all things exist in God as God" (128). He also notes (126) that Cusa proposes that creation is an 'image' of God, but surely man and woman and Jesus are the image of God (Gen. 1:27; Col. 1:15) while creation merely displays God's invisible qualities (Rom. 1:20). Likewise, Cusa's view that "God imparts being and perfection to all" (127) seems at odds with Genesis' description of God declaring His creation good (not perfect – the two are not equivalent). Perfection seems to take us back to Platonic and Neoplatonic categories rather than biblical ones. One last point on Cusa is that he uses mathematical symbolism as a way of ascending to God (152), but God (Jesus) descended to us because we are incapable of ascending to Him.

The final chapter summarises the key points in Boulding's attempt to show the relevance of participatory metaphysics to multiverse theory. He states that his approach is theological (171), but I would suggest that it is more philosophical. He hopes that others might "apply a participatory outlook to other key questions in the theology and science dialogue", for example to evolutionary biology. Based on this book I would argue that participatory metaphysics seems far too depend-

ent on Platonic and Neoplatonic thinking and is insufficiently biblical and Trinitarian, so unlikely to bring together science and Christian belief as this journal seeks to.

Naïvely, I do not see that the possible existence of a multiverse poses any greater challenge to theistic belief than any other aspect of science does. Whether there is a universe, or a multiverse still leaves Heidegger's so-called fundamental question of metaphysics "why is there something rather than nothing" unanswered irrespective (18). I am not convinced that participatory metaphysics really helps me much here.

Meric Srokosz is an Emeritus Fellow at the National Oceanography Centre, Southampton, a former Associate Director of the Faraday Institute, Cambridge, and the author with Rebecca Watson of Blue Planet, Blue God: the Bible and the Sea.

Peter S Williams

A Universe from Someone: Essays In Natural Theology

Eugene, Oregon: Wipf & Stock, 2022. 133 pp. pb £22. ISBN 9781666702927

This short book is a collection of essays and debate transcripts from philosopher Peter S Williams' years of engaging with sceptics. This accessible contribution is a useful guide to those looking to gain deeper understanding of arguments for God's existence. Each chapter is brief, with Williams providing copious footnotes to signpost to a variety of resources for more fruitful dialogue with sceptics. The finest is a marvelous response to Lawrence Krauss' A Universe From Nothing. This response is an outstanding collection of his own analogies and the poignant criticisms of others, collected into a devastating critique of Krauss' withered attack on theism.

There are two significant issues: Firstly, natural theology is given such a broad treatment, that one can finish the book wondering if science simply means the cosmological argument, fine tuning and design. Any reader buying this book in hope of understanding science and religion further needs reminding from the start that this is a philosophical guide, written by a philosopher. There is almost no science in this book.

Secondly, Peter's book is an apologetic for Intelligent Design. As a biologist, I could not understand that despite the dramatic change of landscape over the past two decades (gene editing, cancer immunotherapy, the bioinformatics revolution, numerous Nobels given for CRISPR, the structure of the ribosome, even sequencing the Neanderthal genome etc.) there is no mention whatsoever of biology as it is now. Instead, we are treated to quotations from the small camp of Discovery Institute writers whose work is older, including Moreland. Williams tells us that their work is relevant and cutting edge when it is no such thing (90), yet the work in biology and chemistry that is cutting edge is missing. Intelligent Design has settled the issue according to Williams (94) whose bibliography is exclusively ID proponents. There is no single mention of theistic evolution in the entire book. Other views on science and religion debated over the last century, from the inter-war work of Eddington to the convergent evolution of Conway-Morris and everything in between, are missing. In this regard, his conception of natural theology come across as scientifically deficient and narrow, despite the definition being broad and the approach evidential: the science in natural theology is simply cosmology and design, with even these extremely limited in the book.

Sam McKee is lecturer in philosophy of science at Manchester Metropolitan University and a researcher in DNA repair.

Denis Alexander and Alister McGrath (Eds.)
Coming to faith through Dawkins: 12 Essays on the pathway from New Atheism to Christianity
Grand Rapids, Kregel Publications, 2023.
271 pp. pb. £13.35. ISBN 9780825448225.

This book is composed of a set of twelve essays, each written by a different Christian believer who has at some point in their past been an atheist, and has also encountered Dawkins' writings. The common thread is that each author has formed a critical view of Dawkins' arguments against Christianity and has, as a result of a combination of intellectual honesty and spiritual awakening, come to a firm faith in Jesus. The writers are however very different in both personal character and academic background, with some in the arts and others in the sciences, and with very different approaches to faith.

Most speak of a personal element to their faith, where they come to a sure knowledge of God through experiencing the presence of Jesus in their lives, as a confirmation of their intellectual understanding of the sound historicity and philosophical completeness of the gospel. Many have a similar experience to CS Lewis who, faced with the logical consequence of his intellectual and spiritual enquiry, admitted defeat and accepted Christian faith as the only reasonable response. And yet each time, this step of acknowledging the lordship of Jesus has been presented as a positive choice rather than an inevitable outcome, and confirmed by subsequent spiritual growth.

There is something for everyone, and the writing styles are of a high standard, being well written without being overly technical. For each essay, the distinct personality of the writer is well expressed, and their journey into faith presented with spirit and conviction. The criticisms of Dawkins which have led them to faith in Christ are usually expressed courteously, although sometimes there is irritation expressed with Dawkins' tone, polemical style and narrow choice of the angle of attack. What is very attractive about this set of essays is that the stories are highly personal and individual and showcase the way that there are many paths to faith, across many landscapes, but that the country explored, and the goal of faith attained, is the same throughout.

However, this collection of essays is not intended to be a systematic critique of all of Dawkins' arguments, as they are charting the personal journeys to faith of the essayists. While the cosmological anthropic principle is the most extensively discussed and the historic evidence for the resurrection of Christ referred to more than once, other challenges raised by Dawkins are not answered. Notably, the scientific implausibility of the Virgin Birth, the argument from morality against Hell and the Atonement, and the assertion that Christianity is merely an emotional crutch are not addressed. The main critique of Dawkins in these essays focuses on Dawkins' dismissive tone and selectivity of argument, as well as challenging where Dawkins' morality comes from. The accounts of personal meaning and purpose in particular seem to play into Dawkins' hands, although the authors take pains to point out their experience of a spiritual reality.

Nevertheless, the book remains an unapologetic declaration of faith in Jesus by a wide range of authors, most of whom have a scientific background, and for whom Dawkins' writings, principally The God Delusion, served to repel the authors from atheism and propel them towards faith in Jesus. Perhaps the unequivocal teachings, obedient suffering and unique identity of Jesus will always offend the purely cerebral and continue to evade

merely intellectual arguments, and the merit of these essays is that it puts personal and spiritual reality squarely at the centre of the discourse into the reality of God.

Christina Biggs is a postdoctoral researcher at the School of Chemistry at the University of Bristol, investigating the correlations between air pollution and traffic in Bristol, and has previously been Local Group Leader of CiS Bristol.

Mike Hulme

Climate Change isn't everything. Liberating climate politics from alarmism

Cambridge, UK: Polity Press, 2023. 200 pp. pb £14.99. ISBN: 9781509556168

I found this book deeply disturbing for it challenged my rather monochrome, scientific view of climate change. Mike Hulme has a long track record in climate science. He has contributed to several IPCC reports and is currently Professor of Human Geography at the University of Cambridge.

The central thesis of this book is that the present public conversation about climate change is being overtaken by the ideology of 'climatism' (8). Climatism is a way of seeing the world, in which there is a 'settled belief that the dominant explanation of all social, economic and ecological phenomena is a human-caused change in the climate. (Thus), complex political and socio-ecological challenges are reduced to and solved by resolving the issue of human-induced climate change' (27-28). Hulme argues that climatism has become a master-narrative about 'the present and future state of the world…which offers a seeming explanation for nearly everything' (14) and offers the tempting allure of simplifying what are in reality complex social problems. Hulme documents the rise of climatism and the reasons for its ascendancy, but then moves on to warn of the dangers that this ideology presents. Amongst these there are three that resonated with me.

First is the complex nature of climate change and the dangers of over-simplifying the problem. He illustrates his argument with examples of the wrongful attribution of some extreme weather events to climate change when, in reality, some of these stories are primarily about something else such as changes in land use or the implementation of particular economic and social policies. This is the allure of climatism. In the language of social policy, climate change is characterised as a 'wicked problem' (120, 182-183), one that is almost irreducibly complex. It represents a problem to which there is no straightforward scientific solution and, because there are so many unknowns, one where proffered solutions pose the real possibility of unintended and harmful consequences.

A second danger comes from some contemporary writing which plays into the climatism agenda. Naomi Klein's book 'This changes everything: climate vs capitalism', to which Hulme's title Climate Change Isn't Everything may be seen as a direct response, uses the ideas of climatism to challenge that of the prevailing ideology of capitalism. Hulme comments that 'to use climate science as a trump card to shut down ideological opponents…turns science into an ideological weapon' (155), which in the long term is harmful to science itself.

A third danger lies in the familiar mantra 'just follow the science' for as Hulme points out science is not neutral. Even climate science is vulnerable to influence by climatist thinking. This is illustrated with a discussion of the different climate scenarios proposed by the IPCC and the way in which models which play to the greatest drama get the most extensive press.

As an antidote to climatism Hulme suggests that we show a greater humility towards the role that science has in contributing towards our understanding of the future. Further, given the complexity of the climate-change problem we must allow for 'clumsy solutions' (139) which are administered in a spirit of pragmatism. Climate change is but one lens through which we view the many development problems identified by the United Nations.

So how do we as Christians respond to the ideology of climatism? Throughout the book Mike Hulme is at pains to point out that he is in no way denying the reality of climate change and sees limiting its impact as a necessary ambition. However, we are being invited to recognise that the effects of changes in climate are not simply determined by climate alone but rather are mediated through a range of social, cultural and political factors. I recognise the power of these arguments. And yet at the same time I see a warming world and more worryingly, in many places I see business as usual. In the global north I see few policy initiatives that are effecting serious change whereas in the global south I read of farmers struggling with the unpredictability of seasonal rains. So where does this leave the nuanced approach? Maybe a little alarmism is necessary.

Whilst this is not an explicitly Christian book, I would commend it to Christians in churches and charities advocating for climate justice for it allows us to form more rounded arguments. For those wanting a more theological approach see Chris Doran's book reviewed in S&CB 30:2.

Hugh Rollinson, is Emeritus Professor of Earth Sciences at the University of Derby and former course director at the Faraday Institute for Science and Religion

John Loughlin (ed.)

Human Dignity in the Judaeo-Christian Tradition: Catholic, Orthodox, Anglican and Protestant Perspectives

Bloomsbury Academic, 2021. 283 pp. pb. £28.99 ISBN 9781350238138

While the Universal Declaration of Human Rights recognizes dignity as the foundation of all rights, its definition of dignity is deliberately vague. Loughlin's collection explores the historical and theological roots of human dignity in the various Christian denominations, including Catholicism, Orthodoxy, Anglicanism, and Protestantism.

It delves into the classical Greek, Roman, and Scriptural roots of human dignity, examining the works of prominent theologians like St. Thomas Aquinas and St. John Paul II. Additionally, it explores how Renaissance art and music reflected humanist ideals of human dignity, noting continuity rather than outright rejection of what went before.

In his introduction, Loughlin acknowledges the existence of secular critiques of Christian notions of dignity. These critiques range from the nihilistic pessimism of Friedrich Nietzsche to the radicalism of Peter Singer, who challenges human exceptionalism ("speciesism") and defends infanticide in certain cases. Loughlin argues that secular humanists like George Kateb, while recognizing human dignity, often dismiss religious perspectives. Noting that religion is a key aspect of humanity, as is a great capacity for evil and destruction, Loughlin warns that atheism risks reducing humans to animals lacking obvious inherent dignity or equality.

The book originates from a series of academic lectures that offer valuable insights, but which lack a fully unified and sustained narrative and analysis. However, Loughlin's introduction provides a helpful framework, and the essays

themselves follow a broadly chronological order. The "image of God" concept and its interpretations predominate, and the dualities of human glory and misery, spirituality and physicality, and the individual and society recur several times.

One potential shortcoming is the unsystematic discussion of the nuances of "dignity" itself. Christianity majors on our inherent worth as human beings, but the word also refers to calm, serious, self-controlled behaviour. Delving deeper into these distinct yet interconnected ideas could have helped frame arguments in the book and in society.

The first, foundational chapter is by John Day. Day examines the "image of God" concept in its biblical context and its later development. He argues that the image and likeness of God refer to intelligence and creative power, potentially including our physical form, given God's portrayal in human-like terms within scripture.

While most essays contribute to the overall exploration of Christian thought, the third chapter, "Christ as Imago Dei – A Missed Opportunity of Ante-Nicene Christian Theology," by Vladimir Latinovic, seems less relevant. The focus deviates from human dignity generally and dismisses Trinitarian readings of the Scriptures. While discarding Trinitarianism sidesteps certain problems and aligns with non-Trinitarian religions, the essay does not consider how such a drastic dismissal of fundamental Christian doctrines undermines the credibility of the whole Christian tradition.

Bringing things up to the present, Roger Trigg explores the role of dignity in discussions of religious freedom, while Michael Burdett compares transhumanist ideas with Christian notions of the image of God. Finally, Callum MacKellar defends inherent human dignity as a basis of universal rights and equalities that is threatened by euthanasia, eugenics and abortion.

Overall, this book is not a systematic historical, theological or bioethical account but rather a rich, academic introduction to influential Christian ideas about human dignity and their application to contemporary issues. It offers a valuable resource for academics and students seeking historical context and diverse theological perspectives on this important and contested concept. The last two essays, focusing on transhumanism, robotics, and bioethics, likely hold the most immediate interest for readers of this journal.

Patrick Richmond is Vicar of Christ Church, Eaton, Norwich, Chair of Science and Faith in Norfolk, and an associate of the Faraday Institute.

Noreen Herzfeld

The Artifice of Intelligence: Divine and Human Relationship in a Robotic Age

Minneapolis: Fortress Press, 2023. 200 pp. pb £22.22. ISBN 9781506486901

By now, almost everyone is aware of what the much-heralded revolution in Artificial Intelligence (AI) is purported to offer us. Very soon, our current technological lifestyle and world-view are set to be overtaken by brand-new innovative applications of AI, from self-driving vehicles to entire films and novels being written and produced completely by AI.

Most works discussing this subject do so from a relentlessly utopian, techno-evangelical perspective, but this book takes a rather different, more philosophical and theological approach. Instead, author Noreen Herzfeld considers somewhat deeper issues, namely: 1. What kind of relationship can people authentically have with AIs? 2. How does the increasing presence of AI within society change our perception of ourselves and God?

Broadly speaking, how AI tech impacts our relations with each other and our worldview as seen from a Christian perspective. Perspicaciously, Lutheran theologian Ted Peters lucidly states in the forward: 'We call ourselves intelligent. We are so very smart that we plan to invent a future with a posthuman species smarter than we are. Smart? Yes. Wise? Well, that's questionable.'

Crucially, Herzfeld's first chapter provides an essential core for appreciating the rest of the book, containing key insights linking the remaining chapters together. Appropriately enough, the context is set with a concise history of AI and its potential applications. AI's long-term major goal is widely acknowledged as artificial general intelligence (AGI), broadly corresponding to human-level intelligence and capability – currently unattained. Given the focus on authentic relationships, Herzfeld takes her theological lead from Karl Barth. Following Jewish theologian Martin Buber, Barth observes that authentic relationships between people possess an 'I – Thou' character - namely the recognition that 'I am as Thou art' - rather than the 'I – It' relationship we have with things. Herzfeld shows how Barth sees authenticity in terms of presence (looking the other in the eye), direct communication (speaking and listening to each other), agency (helping and assisting each other), and finally, freedom (gladly offering help and companionship). She further notes that, although humanity was made in the Image of God, AI is being made in the image of man - or more precisely, the Internet, which is problematical at best.

This culminates in considering whether AIs have personhood: 'Do AIs truly make their own decisions, or do they act solely on the will of the programmer? Could an AI enter a contract? How would one hold a machine legally or morally culpable? Does it possess intrinsic worth? Our understanding of what it means to be a person is simultaneously too vaguely defined and too specifically applied. Legal systems demand yes-or-no answers, while our intuition finds no easy demarcation, no identifiable line, the crossing of which confers personhood.' This first chapter ends with the following core question:

'Barth insists that it is only through a consideration of the person of Jesus that we can grasp who God is and who we are meant to be. In taking on a human body, God became fully present to humanity. By enduring our suffering and mortality, God entered a fully authentic relationship with humankind. But what can suffering or mortality mean to a machine? Can we have a fulfilling relationship with something that does not share our embodied condition?'

Each of the remaining chapters takes the form of a philosophical and theological meditation, ruminating upon Barth's criteria for authentic relationships, and applying it in various contexts to the situation pertaining between humans and AIs. Although it is fully acknowledged that AGI has not yet been achieved, it might very well happen quite soon - which certainly gives urgency to the considerations given here. Even if AGI is not achieved in the near term, the attitude of many users to AI-enabled technologies confers person-like qualities and attributes to their implementation. This shocked computer scientist Joseph Weizenbaum when he deployed the very first chatbot, ELIZA, back in 1966, well over 50 years before ChatGPT. It simply goes to show that Herzfeld's concerns are indeed well-placed and continue to be relevant, even urgent.

The final two chapters are perhaps the most profoundly theological in their character and consequently, also the most challenging. Therein, Herzfeld further cautions us on how AI is already being used:

'However, we sometimes act as if AI were a god by giving it blind adherence or far too much authority. We let algorithms decide in too many cases who gets parole, who sees what ads, who gets hired or fired, or who gets what medical treatment. Surveillance programs watch our every keystroke and, all too often, our physical movements. [...] When we give AIs blind adherence, we treat them like gods; they are then, in fact, idols—gods made in our own image that we think we can control.'

As perhaps indicated by mentioning 'artifice' in the book title, Herzfeld explicitly contends that 'AI can be a good tool when used with care. It is an incomplete partner and a terrible surrogate for other humans.'

In conclusion, this was not an easy read. Although the writing style is lucid and clear, the overall structure and content are somewhat challenging. It could have had further consolidation and editing. With these minor reservations, I can certainly recommend this work as a good introduction to the deeper social, philosophical, and theological ramifications of applying AI.

Brian Monahan is a retired computer scientist, mathematician and software developer, living near Bristol UK.

Paul Moes & Donald J. Tellinghuisen

Exploring Psychology and Christian Faith: An Introductory Guide (Second Edition)

Grand Rapids: Baker Academic, 2023.
pp.272 pb. £18.95. ISBN 9781540964687

In Exploring Psychology and Christian Faith Moes and Tellinghuisen develop a dialogue between scientific psychology and a biblically grounded anthropology. In doing so the authors deserve credit for both, the breadth of the psychological topics considered, and the accessible tone they manage to maintain throughout. The book engages with the nature of consciousness, perception, memory, emotion, sociality, development, psychopathology, psychotherapy, and medication, to provide only an incomplete list. The book is intended as a textbook or companion for undergraduates taking an introductory psychology course or a course on the relationship between science and religion. Students will no doubt value the effort the authors have gone to in the second edition, working to simplify their prose and providing easily accessible definitions to key terms. The discussion questions at the end of each chapter, retained from the previous edition, are also hugely helpful. Together these features make the authors' depth of psychological scholarship easily accessible.

While the work might not be explicitly intended for clergy, those involved in church leadership will be particularly interested by the central role that the Church plays throughout. While not a formal theme, the centrality with which the authors view relationships for human personhood means that they consistently return to the Church as the site of Christian discipleship and sanctification. The potential usefulness of the work for clergy is further enhanced by the pastoral tone with which Moes and Tellinghuisen treat a range of topics including human limitedness (20), pornography use (76-77), anger (180), and the use of medication to treat psychopathology (195-6).

To explore psychology and Christian faith the authors set out a biblically grounded anthropology composed of five themes: 1. humans are relational persons; 2. humans are broken in need of redemption; 3. humans are embodied; 4. humans are responsible limited agents; 5. humans are meaning seekers. While fully acknowledging that this is an incomplete list Moes and Tellinghuisen understand there to be 'wide agreement among bibli-

cal scholars and laypeople alike' on them (10). These five themes are unpacked in chapter one and then brought into conversation with each of the psychological topics explored in later chapters. The theological discussion in chapter one might have been enhanced by greater theological breadth of interlocutors. Notably this chapter contains no citation from a theologian born before the twentieth century. St Augustine's sermons on the Psalms, for instance, would have provided a unifying voice by which all five themes could have been integrated and developed.

The five themes, outlined in chapter one, are theologically uncontroversial. More debatable is the way Moes and Tellinghuisen appear to understand the relationship between the natural and supernatural. Describing this relationship, they refer to the 'natural (versus supernatural)' (29), [my emphasis] suggesting an oppositional relationship between the two. In doing so they suggest that psychology (which focuses on the natural) cannot be used to shed light on the activity of the Holy Spirit (the supernatural). Reflecting this, the authors contrast human cognition, desires and actions with the work of the Holy Spirit (65, 75-6, 116). This gives the impression that the Spirit works outside of the human person's natural faculties. Indeed reflecting this, Moes and Tellinghuisen write 'faith isn't something people can earn, so it's different from other kinds of beliefs studied by psychologists' (164).

This will no doubt be a concern to catholic readers who, with Thomas Aquinas, understand grace to work through the perfection of human persons' natural faculties. However, it may well strike some Protestant readers as questionable too, as reflected in the work of Protestant theologians Kathryn Tanner (Christ the Key) and Simeon Zahl (The Holy Spirit and Christian Experience) both of whom appeal to the embodiedness of human persons (a central theme for Moes and Tellinghuisen) to argue that the Spirit works through human persons' natural, psychological faculties. Indeed, this claim reflects the work of psychologists of religion like Fraser Watts, Bonnie Poon Zahl, and Nicholas Gibson who understand religious cognition to make use of the same psychological systems as non-religious cognition.

Overall Moes and Tellinghuisen have provided a hugely accessible introduction to a broad range of psychological topics bringing each into conversation with a biblical anthropology. Students of psychology will no doubt benefit from their reflections on the relationship between psychology and Christian faith and all readers will value the authors' sensitive and pastoral treatment of an array of issues. However, I am left wondering how psychology might help us explore life lived in the Holy Spirit? To best answer this, I believe we will need an interdisciplinary dialogue where the dichotomy between the natural and supernatural is truly shaken.

Ed Chan-Stroud is a DPhil Candidate at Oxford University working across Theology and Psychology. He is about to start as an ordinand in the Church of England.

Mary L. Vanden Berg

Aquinas, Science, and Human Uniqueness: An Integrated Approach to the Question of What Makes Us Human

Eugene, OR: Cascade Books, 2022. 158 pp. pb. £18.00. ISBN 9781725267770

Are humans unique, and if so, how? Vanden Berg takes an interdisciplinary approach to this question, incorporating insights from Scripture, theology, and science. She starts with theology, following Aquinas in her view of human nature, holding that humans are composites of a body (matter) and a rational soul (body)

and form (soul). We are made in the image of God and for relationship with God. Thus, our material nature makes us similar to the animals, but our rational soul sets us apart.

Next, she moves to biblical anthropology and traces the Scriptural support for human uniqueness. This chapter dovetails nicely with the chapter on theology, and includes a discussion of what is entailed by the image of God.

From Scripture and theology, we get a view of humans as specially unique, that is, 'set apart and above the rest of creation' (108). But does science support this view? This is the topic of the third chapter. Vanden Berg catalogues a surprising number of ways that research supports the claim that humans are similar to other animals, including the ability to make and use tools, wage war, live in community, and express moral behavior such as sympathy, empathy, and altruism. Yet, science also indicates that humans are specially unique. For example, humans differ from other animals in being able to recognize and interact with other minds, though evidence suggests that chimpanzees can do so at a basic level. Humans can also use complex language, have a moral code based on abstract reasoning about other minds, and are generators of culture.

In the next chapter, Vanden Berg recognizes a tension between the biblical data about human nature and origin, and the evolutionary account of our origin. The chapter is pastoral, rather than academic: she is concerned to help the layperson think about the proper relationship between science and faith to ease their concern over the conflict between the two. She sees science and Scripture as two different stories of human nature and origin that sometimes overlap and are often in tension. Rather than seek to resolve the tension, she advocates living with the tension. In doing so, one takes both science and Scripture seriously and on their own terms.

In the final chapter, she brings the book together by presenting her view of humans as 'material-spiritual, intellective, worshipping beings, and therefore as specially unique creations within the world' (132).

This book is clear and helpful. It engages with current academic research while remaining accessible to the layperson. It could be used at the college level, perhaps in a course on worldview or on human ontology. The author writes as a Christian academic, paying great respect to both Scripture and the Christian tradition. In a climate that seeks the reduction of humanity to the other animals, Vanden Berg argues forcefully for human uniqueness while taking empirical studies of animal cognition and behavior seriously.

I find her view of the relationship between science and religion helpful. To use Ian Barbour's categories, it seems she advocates a mix between the conflict and dialogue models – science and the Bible overlap enough that dialogue is possible, but sometimes there is conflict between the two. At the same time, she says they are 'mysteriously compatible' in a way similar to Christian doctrines like the Trinity. So, while we do see conflict between science and the Bible, the conflict is due to a faulty understanding of one or the other. This comes as a relief knowing that we don't need to force an integration between the two. But ultimately, there can be no conflict. Since all truth comes from God, when the story of the world and of the Scriptures are understood correctly, they will together tell a harmonious story about human beings and the world.

Her material-spiritual view of humanity seems right since the Bible sees both body and soul as important aspects of human ontology. God formed us from the dust and breathed life into our nostrils

(Gen. 2:7, ESV). The separation of body and soul at death is an impoverishment which will be rectified at the final resurrection when Christ reunites them. And 'the Word became flesh and dwelt among us' (Jn. 1:14), showing the value of our materiality. Yet there are challenges to this view. If we are body-soul composites, how do we retain our identity when the composite comes apart? Perhaps it does not, and we're simply ushered into God's presence with glorified bodies. Or perhaps we survive via one of our parts, that is, the soul.

Vanden Berg's book is a compelling account of our human uniqueness from an interdisciplinary perspective. This makes it well worth the read.

Keith Hess is Associate Professor of Philosophy and Apologetics at Oklahoma Baptist University.

Paul Tyson

A Christian Theology of Science: Reimaging a Theological Vision of Natural Knowledge

Grand Rapids, MI: Baker Academic, 2022. 224 pp. pb. £13.73. ISBN 9781540965516

In this book, philosophical theologian Paul Tyson re-envisions the relationship between natural knowledge and Christian theology. Instead of adopting the common science and religion paradigm, Tyson advocates for a 'theology of science' and 'religion-to-science interpretative dynamic' (3, 27). Christian theology should engage modern science while holding fast to the core tenets of the faith and seek to incorporate natural knowledge into an orthodox theological account of reality. The goal here is for Christian theology to reclaim its historical position as a 'first-truth discourse' by recovering a theological epistemology informed by Plato, Aristotle, Augustine and Aquinas (98). Tyson argues that this approach is better for Christian theology than its current, highly dysfunctional, relationship with modern science. Modern science, according to him, is shaped by empiricism, rationalism and physicalism, and judges Christian theology accordingly. It thus excludes from its scientific account of reality many of the core Christian truth claims, which are metaphysical and miraculous in nature (7-15). Tyson views these philosophical aspects of modern science as untenable and sees the need for theological warrants for the reliability of human reasoning and sense perception (43, 54).

The stark picture of contemporary science, which the author paints, identifies important tendencies, but his analysis struggles to deal with science's success in producing knowledge. By his own admission, modern science has a better grasp of physical reality than any previous system, partly because of its abandonment of premodern metaphysics (70-71, 93-94). This suggests the fall of Christian theology from its place of prominence was a fortunate one (felix culpa), and raises serious questions about the retrieval of premodern epistemology and metaphysics. We cannot just consider how Tyson's proposal benefits contemporary Christian theology, but must also take its impact on science into account. He, for example, expects it to lead to an increase in theoretical complexity (168). Another concern is that Tyson, for all his criticism of modern philosophy, does not fare much better in combatting philosophical scepticism. 'Theocentric ontological foundationalism' may entail that our epistemic faculties are reliable, but clearly, we cannot know the ontology is true apart from these very faculties. Christians (and other theists) might respond that they have a reasonable trust in their faculties (cf. 41-42), but, by my lights, this is hardly going to impress the sceptic.

Further, I wonder why we should not base natural science on the natural

knowledge of God. Tyson seemingly takes a dim view of traditional natural theology, but it may be a more suitable 'first truth discourse', given the global nature of contemporary science. He remarks that 'one cannot prove the primary (God) from the secondary (creation)' (55n26), but, in my opinion, this either breaks with, or fails to engage, an important strand of pre-modern thought. For example, Aquinas concludes from Rom. 1:20 that it must be possible to demonstrate the existence of God from created things. As is well known, he then proceeds to formulate five arguments for God's existence (Summa Theologiae I, Question 2, Articles 2-3). If Tyson thinks all such arguments fail, then it would be nice to know why exactly. Admittedly, they are not absolute proofs, but that standard would force us to reject (almost) all arguments.

These are just a few of the concerns I have. Additional issues, such as the difficulty of Tyson's writing, have been raised by others (e.g. Chris Barrigar in Perspectives on Science and Christian Faith 75:1). Nevertheless, I am sympathetic to key parts of Tyson's approach. For modern science to be a reasonable enterprise, more is required than empiricism, rationalism and physicalism. For example, it is difficult to see how natural knowledge is truly worth pursuing if there is no such thing as objective value. Moreover, there is a legitimate place for a theology of science that reflects on the practices, results and foundations of modern science, drawing on the Christian tradition. Lastly, Tyson's focus on epistemology and metaphysics is praiseworthy, given that modern theologians often shy away from these fields. That is unfortunate, because these are areas in which theologians can constructively engage with modern science.

Mark Shaw, PhD student at the Vrije Universiteit, Amsterdam

Nick Spencer & Hannah Waite

Playing God: Science, Religion and the Future of Humanity

London: SPCK, 2024. 196 pp. hb £19.99.
ISBN 9780281090037

Having read and enjoyed Nick Spencer's recent book Magisteria (2023, Oneworld) I looked forward to reading and reviewing Playing God. However, it must be said that this is a very different sort of book and perhaps my expectations regarding it were somewhat misplaced. The authors' stated aim is to make a helpful contribution to the twenty-first century debate on the nature and status of the human (11-12). They want to move the science and religion debate away from the 'neuralgic issues of evolution, the Big Bang, and miracles, with perhaps a bit of quantum theory thrown in…' (x). Their contribution to the debate comes in eight chapters that address a spectrum of issues including: the quest for immortality, the existence of alien life, the personhood of animals and of AI, abortion and gene editing. The authors' note that both 'science' and 'religion' are problematic terms to define, but their chosen focus in terms of religion is on Christianity (xii).

The approach across the different chapters is somewhat uneven, perhaps due to the book's dual authorship, and one chapter in particular seems to me to be out of place in this book. This is the chapter entitled 'Anti-vaxxers, or how we need political theology to save the world.' Even the title suggests that this is less about the nature and status of the human and more about political theology – and that indeed is the case. The topic is an interesting one, but I am not sure that it contributes much to the debate on the nature and status of the human. If the recent pandemic had not occurred, I doubt that a chapter like this would have been included in the book – it is not a natural fit. Of the remaining chapters I was most struck by Chapter 1 'How not to live forever' and Chapter 6 'A scientific cure for

sadness', perhaps because I know a little about the other topics already (with the exception of the chapter on anti-vaxxers).

In Chapter 1, the authors note that 'eternal life' (or how to live forever) is a USP (unique selling point) of at least some religions (13) but it has now become a scientific quest. Considerable sums of money are being invested, especially by those who might be called the super-rich, in research on prolonging life and preventing ageing. Of course, better nutrition and medical progress over the last century have indeed significantly extended the human life span, particularly in the so-called western world (16), and perhaps further extension is possible (though see Milholland & Vijg 'Why Gilgamesh failed: the mechanistic basis of the limits of human life span', Nature Aging (2022) 2, 878-884). Transhumanism – the use of technology to enhance longevity, cognition and well-being – is now a well-established philosophy that seeks eternal life (scientifically based immortality) in this world rather than the next (apparently there is even a Christian Transhumanist Association (21)). From a Christian perspective the authors rightly say that eternal life requires a radical transformation (29) and they argue that it is less than clear that living forever untransformed is a desirable prospect, even if science were to find a way to extend our lives indefinitely (32).

Moving on to chapter 6, this discusses the epidemic of mental ill health in the western world and looks at the possibility of a scientific cure. Unfortunately, what counts as mental ill health seems to be so broad that almost everyone is likely to experience this at some point during their lifetime (126). Furthermore, the proposed pharmaceutical 'cures' don't seem very effective generally (131). Interestingly, having a religious faith seems to be good for mental health, but there is a need to distinguish between belief, belonging and behaviour in their effects. Research shows that religious practices – either individual or corporate – are good for one's mental health (136), which is encouraging for those of us who have a living faith.

To sum up: this is an interesting book but is somewhat uneven in its approach to the topic it addresses (as per its subtitle, 'Science, Religion, and the Future of Humanity'). If you haven't thought about the issues that are discussed, then it is worth reading as a starting point. However, there are other books out there that address each of the topics in greater depth.

Meric Srokosz is an Emeritus Fellow at the National Oceanography Centre, Southampton, a former Associate Director of the Faraday Institute, Cambridge, and the author with Rebecca Watson of Blue Planet, Blue God: the Bible and the Sea.

Diarmid A. Finnegan, David H. Glass, Mikael Leidenhag and David N. Livingstone

Conjunctive Explanations in Science and Religion

London/New York: Routledge, 2023. 335 pp. hb. £ 125.00. ISBN 9781032139685

When we think of explanations as answers to why-questions, we usually assume that each such question has precisely one correct answer. However, it may be necessary to give more than one answer to a why-question, leading to what is called a conjunctive explanation. This edited volume explores the potential of conjunctive explanations formed by conjoining scientific and religious explanations. (A volume discussing conjunctive explanations within science has simultaneously appeared with the same publisher: J. Schupbach and D. Glass (eds.) Conjunctive Explanations, Routledge (2023).)

One obvious obstacle to this kind of conjunctive explanation is the naturalistic belief that once science has done its job of explaining what we observe, there is no explanatory task left for religion. While all the contributing authors disagree with this belief in some way or other, not all of them engage with it directly. One example of engagement that I found particularly interesting is Anastasia Scrutton's chapter on possible conjunctive explanations in psychopathology (Chapter 7). Scrutton sensitively discusses different ways in which we might acknowledge episodes of 'hearing voices' as genuine religious experiences, all the while explaining and treating them as psychotic. Another example is Gijsbert van den Brink's discussion of Ockham's razor in connection with the cognitive science of religion (Chapter 9). Apart from responding to naturalistic worries about conjunctive explanations, van den Brink also helpfully addresses theological reservations against the very idea that religion is in the explanatory business.

The book consists of six so-called conversations, each of which contains two chapters and brief responses from both authors to the other's contribution. As one might expect, the mutual engagement of the two authors is not always so extensive as to deserve the term 'conversation', but the format nevertheless enhances the overall coherence of the book. For instance, although David Livingstone's discussion of teleology in a Darwinian framework (Chapter 3) is highly interesting in its own right, the connection to the theme of conjunctive explanation is rather tenuous. However, the other chapter within this conversation (Chapter 4 by Rope Kojonen) then draws the discussion back to the main topic by zooming in on Asa Gray's response to Darwin's theory. By reconstructing Gray's arguments for the compatibility of Darwinism and theism, Kojonen demonstrates what a conjunctive theistic-evolutionary explanation might look like. Similarly, the reader can learn a lot about panpsychism as an explanation for consciousness (Chapter 5 by Joanna Leidenhag) and about strong emergence in physics (Chapter 6 by Tom McLeish), but it is primarily by reading these two chapters together that one grasps their significance for the issue of conjunctive explanation.

It is clearly the first and the last of the six conversations that are most explicitly concerned with the book's main subject. Since explanation has been a hotly debated topic in philosophy of science for several decades, it is worth mentioning that all four participants in these conversations are up to date with the relevant literature. This enables them to formulate their own take on conjunctive explanation as a significant step forward in the ongoing debate on explanation and understanding. In the case of David Glass (Chapter 1), the step consists in developing a broadly Bayesian framework for discerning under which circumstances a conjunctive explanation may be better than a simple one. Aku Visala (Chapter 2) then discusses explanations of human actions as a concrete case in which these circumstances are fulfilled, because neither an account in terms of neurophysical causes nor an account in terms of reasons for action is entirely satisfactory on its own. In their respective contributions, Stephen Williams (Chapter 11) and Alister McGrath (Chapter 12) emphasize the 'big picture' view that religion adds to science in conjunctive explanations. Williams does this through a critical appraisal of John Polkinghorne's writings, in which he identifies a neglect of the moral and volitional factors that affect our big pictures. McGrath explores the idea of an 'explanatory mosaic' as a middle way between an explanatory monism that fails to recognize the irreducible contributions of different approaches and a pluralism that cannot account for the unity of the one world we inhabit.

Let me finally mention one more quality of the book: The diversity of the theological outlooks gathered within it can be illustrated by briefly looking at the two chapters I haven't mentioned so far. On one end of the spectrum, Andrew Torrance (Chapter 8) defends a robust notion of divine intervention against naturalistic criticism. On the other end, David Brown (Chapter 10) refuses to view God as a person, let alone an agent. In sum, although not all the chapters of this volume are intimately connected to the notion of conjunctive explanation, each of them is an insightful and thought-provoking contribution to the science-religion dialogue.

Matthias Egg is a lecturer and researcher in philosophy at the University of Bern.

Michael Ruse

Understanding the Christianity-Evolution Relationship

Cambridge: CUP, 2023. 184 pp. pb. £14.99.
ISBN 9781009277280

Michael Ruse is Professor Emeritus at the University of Guelph, Ontario and recently retired as Professor of Philosophy at Florida State University. In his Preface and Epilogue, he makes clear that he writes as a philosopher and historian of science, not a theologian. He does present, and briefly comment on, the views of significant theologians from St Augustine of Hippo to Pope Francis, but there are no in-depth theological discussions. In the Preface Ruse advises readers to begin with the 'Summary of Common Misunderstandings' at the end of the book. He does not discuss these explicitly in the book, but says they were in mind when writing it and readers should be able discern his answers to the problems they pose. A misunderstanding, that might be added to those listed, is the assumption that the opening chapters of Genesis were meant to be read as an historical and scientific account of creation. His writing is concise, occasionally terse, so that at times the text needs to be read with careful attention in order to follow the line of thought. There is an element of humour.

Ruse structures the book around two world views, based on different root metaphors. Organicism sees the world in terms of a living organism. It was the dominant view in ancient Greece, adopted by Plato and Aristotle. Mechanism looks at the world as a machine. It was the view of the pre-Socratic atomists. In the first three chapters of the book Ruse seeks to show how these influenced, sometimes in complex ways, the relationship between Christianity and natural philosophy and then science. Initially organicism was seen as congenial to Christianity: the world seen as an organism created by God and in and through which God's purposes are worked out. He sees its presence in the thinking of Augustine, Aquinas and Calvin. With the rise of science, the view of the world as a machine came to the fore. Thinkers from Boyle, Newton, and Paley onwards found ways of relating this to Christian theology. Even after the acceptance of Darwin's mechanistic theory of evolution through natural selection, there were those like Aubrey Moore who were able to do this. Ruse exposes the tendentious nature of the 'warfare' model of the science-religion relationship which arose in the late nineteenth century. He discusses the factors which encouraged the rise of biblical literalism with regard to creation in the southern USA, its promotion by Seventh-day Adventists, and its later adoption by some evangelicals in the mid-twentieth century. There are brief discussions of young-earth creationism, intelligent design, and the debate about the 'fine-tuning' of the universe. Teilhard de Chardin's theologizing of evolution and A. N. Whitehead's 'process theology' are seen as resurgences of organicism in

the twentieth century.

Mechanistic Darwinism raises questions about the nature of humans and their place on earth which challenge Christian thinking. The second half of the book is devoted to this. Chapter four discusses attempts to understand human freewill and morality in mechanistic evolutionary terms, and some Christian responses to this. Both secular and Christian responses to the current environmental crisis are discussed in chapter five. Chapter six discusses understandings of human aggression expressed in war and prejudice (especially racial and sexual). Again, the organising principle is the influence of organic and mechanistic thinking on both secular and Christian thinking. A weakness of the book is that in its use of reference to biblical texts it shows no awareness of the contribution of modern biblical scholarship in dealing with the issues addressed. This is particularly true of how the Bible should be used in developing Christian ethics.

This is not a book of answers, though Ruse's own position on various issues is made apparent. It is a presentation of a new way of looking at the debates that have taken place over the relationship of Darwinian evolution to Christianity in the hope that it will stimulate a fresh way of thinking about the issues involved. It provides a good overview of these debates and deserves to be read and given careful consideration.

Ernest Lucas, Vice-Principal Emeritus, Bristol Baptist College and Associate Research Fellow, Spurgeon's College, London, has doctorates in both science and theology.