

Book Reviews



ENVIRONMENT

STEWARDS OF EDEN: What Scripture Says about the Environment and Why It Matters by Sandra L. Richter. Downers Grove, IL: IVP Academic, 2020. 168 pages. Paperback; \$22.00. ISBN: 9780830849260.

As an ecologist, I have read many articles and books about creation care over the last few decades. Some of these were written by scientists, some by theologians, and some by philosophers. As a result, I wondered what new perspectives Sandra Richter, a noted Hebrew Bible scholar, might offer in her recent, and highly praised, book, *Stewards of Eden*.

Creation care is a topic near and dear to my heart. However, teaching at a Christian liberal arts college in the Midwest, it is often challenging to encourage evangelical students to transcend their preconceived notions about environmental stewardship. They often think that it's not something that Christians should worry about. Many believe that it's strictly an area of concern for secular liberals. Would Richter's book be helpful? Could her words connect with some of the students that I struggle to reach?

A quick glance at some of the chapter topics, such as "The Domestic Creatures Entrusted to 'ādām," "The Wild Creatures Entrusted to 'ādām," and "Environmental Terrorism," piqued my interest. These aren't topics typically addressed as entire chapters in similar books. There was an absence of chapters specifically detailing different forms of environmental degradation, the history of the environmental movement, and Christian motivations for creation care. Richter does touch upon these topics, but her organization and focus is distinctly different from other texts.

The lion's share of *Stewards of Eden* is a deep dive into the Hebrew Bible, specifically the Torah, shining light on our Creator's covenant with and expectations of his people. Richter begins at the beginning, with Genesis as a "blueprint for creation," establishing identities, relationships, and responsibilities. She describes how the rebellion of "God's chosen stewards has consigned all under their authority to frustration and death." This sets the stage for the establishment of Yahweh's law, which gives life to those who obey.

As we, predominantly nonagrarian people, live out our lives, it is tempting to skim over the aspects of the law recorded in the Torah that are devoted to care for the land and animals, and often even care for the poor. However, Richter brings these subjects into sharp focus in the several chapters of her book. In particular, Deuteronomy and Leviticus are used to show the reader that proper care for creation was an important aspect of the law given to the Israelites. Neglect or misuse of the

land and its human and nonhuman inhabitants brought judgment and hardship.

Using modern case studies, Richter shows that, by extension, the same principles are in operation today. For example, she contrasts modern factory farming of animals with care of domestic beasts prescribed by Yahweh's law. The Old Testament laws specified "a Sabbath's rest, a share of the harvest, humane treatment," and "slaughter with dignity and compassion" for domestic animals. Failure to follow a modern-day equivalency of these laws results in not only dreadful "living" conditions for the animals, but concentrations of animal wastes that pollute our water, antibiotic resistant microbes, and the inability for small family farms to remain economically viable.

As a scholar of the ancient Near East, Richter also brings interesting historical perspectives into the narrative. During times of warfare, invading armies often killed wildlife, razed vineyards, and cut down fruit trees. These tactics terrorized and demoralized the local population, as they negatively impacted the land's ability to support its inhabitants for generations. The Israelites were specifically instructed not to employ these strategies, even if it would bring short-term gain. Again, using modern examples, she makes a case that Yahweh's life-giving laws against wanton environmental destruction, even for national security, still have relevance.

Although her strengths are most apparent in chapters focused on the Old Testament, Richter rounds out her book with a discussion of the hope realized in the redeeming work of Christ, work that extends to all of creation. This good news comforts us as we groan in anticipation for the day of the Lord. I appreciate the amount of space she dedicates to the discussion of nature in apocalyptic literature, as a counterpoint to the belief that the good creation will be reduced to a pile of ash by its Creator. Continued care of creation while we yearn for restoration is part of our calling. This good news should inspire us to action.

In *Stewards of Eden*, Richter aptly uses her expertise to support the thesis that "scripture speaks to this topic [environmental stewardship] repeatedly and systematically" and that it is "not alien or peripheral to the message of the gospel." There is a lot in this slim volume. Richter is specific and carefully references her statements, but she leaves enough narrative "space" that the lay reader will remain engaged. Her appendix and notes are helpful for those wanting to take action and/or learn more.

As a person already interested in this topic, I found her ability to link modern environmental concerns to ancient Hebrew law fascinating, and I am inspired to explore further. Those interested in the intersection of scripture and creation care should consider adding *Stewards of Eden* to their libraries. For those unfamiliar

with or resistant to considering creation care as part of our Christian calling, it may be most fruitful to explore this book, with its end-of-chapter questions, in discussion groups.

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HISTORY OF SCIENCE

RETHINKING HISTORY, SCIENCE, AND RELIGION: An Exploration of Conflict and the Complexity Principle by Bernard Lightman, ed. Pittsburgh, PA: University of Pittsburgh Press, 2019. ix–307 pages, with notes, selected bibliography, and index. Hardcover; \$50.00. ISBN: 9780822945741.

First some background to the making of *Rethinking History, Science, and Religion*. This edited collection by Bernard Lightman, Professor of Humanities at York University, Toronto, Canada, and past president of the History of Science Society, is the product of a two-day symposium on “Science and Religion: Exploring the Complexity Thesis,” during the International Congress of History of Science and Technology in Rio de Janeiro in 2017. One can consider this to be a companion volume to *The Warfare between Science and Religion: The Idea That Wouldn’t Die*, edited by Jeff Hardin, Ronald L. Numbers, and Ronald A. Binzley (Johns Hopkins University Press, 2018).¹

In one way, *Rethinking History, Science, and Religion* is a focused and daring work. It asks a fundamental question directed at much of contemporary historiography in the field of science-religion relations: if science and religion are not perpetually in conflict, as ever so many historians have claimed over the past fifty years, is complexity a better, if not the best, way to recount the relationship between science and religion? Complexity is the solution first proposed by John H. Brooke in his now classic 1991 text, *Science and Religion: Some Historical Perspectives* (Cambridge University Press).² In fact, Lightman dedicates his edited book to John H. Brooke, the leading proponent of complexity.

But what does the “complexity thesis” add to our discussion? Is it really a thesis? Is it a principle? Does it explain or does it rather describe the situatedness and contingency of the science-religion relationship, its cartography, as David Livingstone might say? Is its sole positive feature to discourage us from making facile assumptions about the relationship between science and religion? Or does it simply add another c-word to our vocabulary: complexity instead of contrast, concordance, compatibility, conflict, conversion, complementarity (or harmony)? Brooke has famously said, “There is no such thing as *the* relationship between science and religion. It is what different individuals and communities have made of it in a plethora of different

contexts” (p. 321, italics original, *Science and Religion*). That statement certainly invites one to consider a complexity thesis.

Although the role of complexity has been a conversation topic for several years,³ Lightman wants to gauge the current “pulse of the field.” He wishes contributors to test the “complexity principle” in scholarly contexts other than the usual Christian West (often seen as Europe and the USA/Canada), as well as in public spaces. This move invites an additional question: will the complexity thesis be able to provide a coherent narrative, or will it merely give us one contextualized example after another with no perceptible trend to bind them together? If there are many complex stories to tell, then it seems that a master-narrative or pattern would be a pipedream at best.

After an introduction by Bernard Lightman, the book is divided into three sections: Part I: The Local and the Global; Part II: The Media and the Public; and Part III: Historiographies and Theories. The book concludes with “Afterword: The Instantiation of Historical Complexity,” written by John Hedley Brooke.

Part I contains four chapters ranging from a local context (chap. 1, “The Stigmata of Ancestry: Reinvigorating the Conflict Thesis in the American 1970s,” by Erika Lorraine Milam), to more global ones (chap. 2, “Three Centuries of Scientific Culture and Catholicism in Argentina: A Case Study of Long-Term Trends,” by Miguel de Asúa; chap. 3, “Reexamining Complexity: Sayyid Ahmad Khan’s Interpretation of ‘Science’ in Islam,” by Sarah A. Qidwai; and chap. 4, “Christian Missionaries, Science, and the Complexity Thesis in the Nineteenth-Century World,” by John Stenhouse).

Each of these chapters addresses the complexity thesis with a different focus. Erika Milam argues that the supposed conflicts between science and religion “gained rhetorical traction” by both scientific creationists and die-hard evolutionists because they both denied the complexity of their own origins. Irven DeVore’s studies of primate behavior is used as a template to test that thesis. Miguel de Asúa identifies three trends in Argentinean scientific culture: (1) colonial period harmony, (2) nineteenth-century conflict, and (3) twentieth-century indifference. Sarah A. Qidwai calls us to carefully consider the interpretation of science in Islam rather than by Islam in the 1865 self-published commentary by Sayyid Ahmad Khan (1817–1898). John Stenhouse examines whether Ronald Numbers’s suggestion that we introduce some mid-scale patterns (or generalizations) such as “naturalization, privatization, secularization, globalization and radicalization,” aids us in understanding the complexity of science/religion relationships in the nineteenth century. Stenhouse concludes that a study of missionary science outside the West complicates Numbers’s attempt to “simplify

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complexity,” and does not do justice to missionary practices well into the twentieth century.

Part II contains five chapters examining the role of the media and public response to science/religion discussions and events: chap. 5, “Creating a New Space for Debate: The Monthlies, Science, and Religion,” by Bernard Lightman; chap. 6, “Darwin’s Publisher: John Murray III at the Intersection of Science and Religion,” by Sylvia Nickerson; chap. 7, “The ‘Harmony Thesis’ in the Turkish Media, 1950–1970,” by M. Alper Yalçinkaya; chap. 8, “A Humanist Blockbuster: Jacob Bronowski and the Ascent of Man,” by Alexander Hall; and chap. 9, “Teaching Warfare: Conflict and Complexity in Contemporary University Textbooks,” by Thomas H. Aechtner.

In summary, these chapters illustrate how insights from the study of print culture, communications studies, and visual studies have broadened our more “familiar grooves” of explanation and deepened our understanding of science and religion.

Part III is to my mind the most stimulating section, one in which some of the leading historians of science and religion present (their) historiographies and theories. It contains four chapters: chap. 10, “Revisiting the Battlefields of Science and Religion: The Warfare Thesis Today,” by Ronald Numbers; chap. 11, “From Copernicus to Darwin to You: History and the Meaning(s) of Evolution,” by Ian Hesketh; chap. 12, “Scale, Territory, and Complexity: Historical Geographies of Science and Religion,” by Diarmid A. Finnegan; and chap. 13, “Conflict, Complexity, and Secularization in the History of Science and Religion,” by Peter Harrison.⁴

Focusing on two of the chapters: In a relatively short chapter (a “brisk survey” of eight pages), Numbers explores the factors that contribute to the continued support of the warfare thesis and the “growth of the opposing neo-harmonist point of view” (p. 183). Contemporaries such as Carl Sagan, Francis Crick, Stephen Hawking, William Provine, the New Atheists, and Christian and Muslim fundamentalists such as Ken Ham and Adnan Oktar are considered. Numbers chides scholars who legitimately question the warfare thesis but often do not address popular audiences.

Peter Harrison argues that we need to make complexity intelligible. Although historians are often averse to meta-narratives, he considers them to be both “unavoidable and indispensable.” Harrison defends the utility of a master-narrative, at least something that rises above mid-scale patterns (such as those suggested by Ronald Numbers). He appeals to Charles Taylor’s view of secularization as one way to begin to address the relation between science and religion. Taylor, for instance, distinguishes between science as cause of religious disbelief and science as a retrospective justification for

it. Secularization involves a change in the conditions of belief which Taylor contributes to transformations within Western Christianity.⁵

In “Afterword: The Instantiations of Historical Complexity,” John Hedley Brooke reflects on each of the contributed chapters. He provides a concise judgement about complexity:

Understood neither as a thesis competing with other theses nor as a prescription to seek out complexity for its own sake, but as a heuristic guiding principle for a critical research methodology, it ceases to be trivial and has proven fertile. (pp. 239–40)

Brooke once again restates his earlier view on complexity: it is a “corrective to essentialist and reductionist narratives of conflict,” and complexity’s primary function is to critique conflict narratives as well as facile harmonizing ones.

For anyone interested in exploring the latest in the historiography of science and religion, read this stimulating and informative book. You will be challenged. Whether the contributors do justice to the central role and character of religion one will have to judge. I for one have my doubts. If we consider our lives as lived to be religion, then religion is not irrelevant to, or in conflict with, or an influential factor on, but rather the very ground for scientific practice.

Notes

¹See my review in *PSCF* 71, no. 3 (2019): 183–84.

²See my essay review, “Telling the Story of Science and Religion: A Nuanced Account,” *British Journal for the History of Science* 29, no. 3 (1996): 357–59.

³See Part 2, “Complexity and the History of Science and Religion,” in *Recent Themes in the History of Science and Religion*, ed. Donald A. Yerxa (Columbia, SC: University of South Carolina Press, 2009).

⁴Peter Harrison’s book *The Territories of Science and Religion* (Chicago, IL: University of Chicago Press, 2015) has been described by Ronald L. Numbers as “the most significant contribution to the history of science and religion since the appearance of John Hedley Brooke’s landmark study, *Science and Religion: Some Historical Perspectives*.” [See Matthew Walhout’s review in *PSCF* 67, no. 4 (2015): 281–84.]

⁵For a more extensive discussion of “science causes secularization,” see Peter Harrison’s article “Science and Secularization,” *Intellectual History Review* 27, no. 1 (2017): 47–70.

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ORIGINAL SIN AND THE FALL: Five Views by J. B. Stump and Chad Meister, eds. Downers Grove, IL: IVP Academic, 2020. 200 pages. Paperback; \$24.00. ISBN: 9780830852871.

The doctrine of original sin has been controversial since its earliest articulation by Augustine of Hippo in the fourth century, and it remains a provocative

source of debate for Christian theologians in our time. Controversy surrounding the doctrine has only intensified as a scientific and evolutionary framework has come to characterize modern thinking. *Original Sin and the Fall: Five Views* provides a forum in which representatives from different Christian traditions are able not only to articulate their own perspectives on original sin and the Fall, but also to respond to the views presented by others in the volume.

Hans Madueme articulates one approach to the doctrine of original sin and the Fall from within the Reformed tradition, an “Augustinian-Reformed” perspective. While he states in the beginning of the essay that he developed his approach “with an eye to recent scientific challenges,” he does not engage in a sustained way with information from scientific discourses (p. 12). Instead, he points out some of the shortcomings he perceives in theological accounts of original sin that attempt a synthesis with evolutionary accounts of the world, and he argues that theology should not be too quick to conform to deliverances from the sciences since “scientific consensus is a moving target” (p. 33). Madueme asserts the priority of biblical exegesis and theological evidence, which he views as affirming a historical, cosmic Fall, imputing moral corruption and guilt. Madueme is compelling in this essay in his identification of the many potential pitfalls inherent to the task of reconciling a theological approach to original sin with the current scientific consensus. However, the essay leaves one desiring more work from Madueme to reconcile his rejection of contemporary science with his belief in the unity of scientific and theological truths, since, as he affirms, all truth comes from God.

Continuing in the Reformed vein, Oliver Crisp presents a “moderate” approach to original sin and the Fall that he describes in terms of “dogmatic minimalism” (p. 37). This means that Crisp affirms “as ‘thin’ an account [of original sin] as is doctrinally possible” (p. 37) while still being consonant with his broader theological commitments. For Crisp, being afflicted by original sin means that every human (except for Christ) has a “morally vitiated condition,” and yet does not bear the burden of inherited guilt. Crisp argues that the notion of inherited guilt is “monumentally unjust,” and that humans should be held culpable only for actions that “they themselves perform or to which they are party” (p. 47). Crisp argues that one benefit of his approach is that one can hold it in tandem with a variety of different beliefs about human origins and the historicity of the Genesis account. The rejection of inherited guilt is perhaps the least persuasive aspect of Crisp’s essay. Though he affirms that all of humanity is metaphysically united, he rejects the notion that this requires a belief in shared guilt. To defend this point, he uses the example of a child born into a family of slaves and argues that the child born into this plight “is not responsible for being born a slave” (p. 41). However, it is odd that Crisp

used this example instead of the example of the child born into a family of enslavers. Does not the child born into an enslaving family, who benefits from the system of slavery, bear some culpability for it, even if only passively?

Joel Green’s contribution draws from his expertise in biblical studies and is written from a Wesleyan perspective. He argues that Wesley viewed the doctrine of original sin as “essential to the theological grammar of Scripture and life” (p. 56). While Wesley emphasized the impairment of human nature, he did not embrace the notion of total depravity, arguing instead that God’s work of healing has begun within the human race. Green shifts next to reflect on the significance of Adam and Eve’s sin from the perspective of Second Temple Jewish texts. He argues that evidence of belief in original sin cannot be found in these texts, and suggests that this is significant in terms of understanding the mindset of New Testament writers who may have been influenced by them. Green then turns to the New Testament. He argues that in Romans 5, Paul is not interested in developing a doctrine of original sin. Instead, Paul seeks to establish the equal status of Jews and Gentiles before God (p. 70). Finally, Green assesses Genesis 1–3, arguing that these chapters also do not provide a foundation for the doctrine of original sin, although they do reveal a belief in the pervasiveness and heritability of sin, “not in the sense of passing sin down biologically but in the sense of pattern and influence” (p. 73). In his conclusion, Green argues that Wesley refused to choose between Scripture and the “book of nature,” that is, the natural sciences. He uses this as inspiration to briefly suggest a way of maintaining belief in the Fall while also acknowledging the evolutionary history of *Homo sapiens*. Green’s essay is helpful in that its reflection on original sin is explicitly in dialogue with insights from evolutionary biology, making this a needed contribution, given the popular perception that evolution has disproven the doctrine.

Andrew Louth provides a nuanced account of an Eastern Orthodox approach to thinking about inherited sin. He first clarifies that part of the dissonance between Western and Eastern thinking about inherited sin can be explained in terms of problems of translation. He notes, “The term original sin (*peccatum originale*) belongs to a particular Western context; nor is it easy to translate into Greek” (p. 79). A central insight of Louth’s essay is his thesis that Western theology begins from the point of view of the Fall and becomes narrowly focused on the notion of redemption. In contrast, he argues, Eastern theology begins from creation and culminates in deification. Eastern Christians view sin through a cosmic lens, and fallen humanity not in terms of inherited guilt but in terms of suffering the effects of the inheritance of death. To illustrate his arguments about the differences between Western and Eastern approaches to sin, Louth juxtaposes the writings of Athanasius and Anselm.

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He then examines the works of Sergii Bulgakov and Dumitru Stăniloae and argues that they continue the trend of viewing sin in the context of creation and deification. The final section of Louth's essay addresses the sinlessness of Mary via Bulgakov's approach to the issue. This aspect of his essay is particularly welcome since only one other essay (Oliver Crisp's) in the volume mentions Mary in relation to the doctrine of original sin. While Louth's argument that the West focuses narrowly on the Fall-redemption arc could perhaps be challenged, his essay nevertheless illuminates important differences in emphasis between Eastern and Western Christian thinking about sin and makes a crucial contribution to the conversation.

Tatha Wiley, in the so-called reconceived view, draws from the theology of Bernard Lonergan, S.J., to develop an exorcising approach to the doctrine of original sin. Wiley takes seriously the ways in which the traditional articulation of the doctrine has lost credibility in the contemporary age. She suggests that this is a result of its dissonance with modern biblical scholarship and evolutionary biology, and its history of being used to deny the goodness of humanity and sexuality. Wiley emphasizes the time-bound nature of all human understanding, and the fact that theological doctrines will inevitably reflect the historical frameworks in which they are articulated. In the current age, Wiley argues, this requires us to take seriously the scientific context in which we live, as well as our "authentic values" (p. 106). In her recasting of the doctrine, Wiley suggests via Lonergan that the "root sin" of humanity is "sustained unauthenticity" (p. 124). Wiley's contribution is compelling in its boldness. Rather than suggesting a few minor tweaks to the doctrine, she presents a rigorous rethinking of it. Wiley's essay is also valuable in that it addresses the gendered effects of the doctrine's history, and is the only essay in the volume to do so.

Original Sin and the Fall: Five Views is a thought-provoking treatment of one of the most debated aspects of Christian theology. On the whole, the book will likely be useful for professional theologians, students of theology at the graduate and undergraduate levels, pastoral ministers, and interested lay people. The "Responses" portion of the book was especially engaging, as the authors were quite candid in terms of assessing the lines of divergence in the group. The book provides thoughtful approaches to a difficult theological puzzle in which clear positions are established, not only from diverse points of view without apology, but also with genuine efforts to understand and accurately represent the positions of the others. Given the brevity of the volume, there were inevitably many unanswered questions evoked. Those familiar with theological discussions surrounding original sin will likely wish for more-thorough engagement with the challenges raised by evolutionary biology, as well as more reflection on recent shifts in thinking about evolution expressed in

the extended evolutionary synthesis. These developments are friendlier to theological intuitions about inherited sin.

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EMBRACING EVOLUTION: How Understanding Science Can Strengthen Your Christian Life by Matthew Nelson Hill. Downers Grove, IL: IVP Academic, 2020. 152 pages. Paperback; \$20.00. ISBN: 9780830852833.

This is a short and very readable book whose main purpose is to connect the average churchgoing Christian with a modern and theologically sympathetic understanding of evolution. The general perspective taken by the book is that human understanding of anything (science, art, theology, politics, and so forth) is significantly contextual. The author takes care in the first chapter to explain his perspective on science/faith issues in general, and organizes the book into three parts.

The first part is that of understanding our "biblical lens," namely, exploring the ways in which we are shaped to read scripture, and how this, in turn, influences our beliefs. Do we read the Bible for formation or for information? The two are not mutually incompatible, but neither are they equivalent, and how we balance the two is pertinent to our theological understanding of evolution. This section of the book addresses what are perhaps the two main questions emerging from the early chapters of Genesis: our understanding of Adam and Eve in the garden of Eden, and the place of predation and death in God's creation. The latter troubles the author much more than the former, and the response presented is not wholly satisfying, even to the author himself. Overall, this section is a good presentation of hermeneutics that focuses on Genesis without bogging down the reader with too much theological weight.

The second part of the book addresses how we understand our "scientific lens." A full chapter is devoted to the basic theory of evolution (its "nuts and bolts") and a subsequent chapter to what is meant by scientific truth and its integration (or not) with faith. The author does a good job of distilling the philosophy of science for the intelligent lay reader without "dumbing it down"—not an easy task. Sometimes, however, the treatment is lacking, particularly concerning the *imago Dei* in light of evolution. Are we (as appears to be the inference on page 69) special simply because we were evolutionarily lucky to have large brains?

The remainder of the book—its third part—is devoted to how we might integrate an evolutionary understanding of biology with Christian faith. Many books have been written on this subject, and it is difficult for anyone these days to say what has not already been said. The theme running through this section of the book is

that an evolutionary perspective can be empowering, primarily because knowledge of fact and truth allows a Christian to better carry out the ministry of Jesus in his/her life and in the world. Knowledge of the roots of our negative genetic urges (for example, the tendency to overeat) can empower us to overcome these urges through a combination of human choice and the grace of God. The final chapter discusses how the Christian church, girded with an appropriate integration of evolutionary knowledge and scriptural foundation, is best positioned to foster the virtues of the kingdom of God through community.

I liked this book, and I think it is definitely one for discussion and use in an adult Sunday school class. It does, however, avoid a number of awkward questions and issues. For example, why does it matter if our negative/positive tendencies are evolutionarily based? Wouldn't we, as Christians, act the same if they had some other origin? There is also an assumption by the author of a transcendent morality – but where does this come from? Are our morals likewise a product of evolution? If so, how does this square with biblical (and other) forms of revelation? And as far as the problem of death is concerned, isn't this a problem of sin in the world? Doesn't it mean that sin is present at the outset of creation?

That said, this is very much a positive contribution to the ongoing evolution/creation issue. Without denying our evolutionary origins, it calls us to transcend them as followers of Jesus. I am sure it will foster interesting discussions in many a church and Sunday school class.

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PERSONHOOD

ARE WE SLAVES TO OUR GENES? by Denis R. Alexander. New York: Cambridge University Press, 2020. 275 pages. Hardcover; \$99.99. ISBN: 9781108426336. Paperback; \$29.99. ISBN: 9781108445054. Ebook; \$24.00. ISBN: 1108426336.

A few weeks ago, news broke that the genetic testing giant 23andMe was going to become a publically traded company.¹ With an annual revenue of \$305 million in 2020 and a database of nearly 10 million human genomes, the company has become not only a consumer favorite for inexpensive at-home genetic testing, but its wealth of genetic knowledge has become a valued commodity for drug development companies. As a part of its marketing approach, 23andMe suggests the knowledge gained from their genetic analysis will help individuals to “know what makes you, you.” While not explicitly stated, this slogan and the company's quick rise to success follow a narrative that has become central in modern society—genes completely determine who we are.

Concerned that genetic determinism has taken an unwarranted place in western culture, Denis Alexander offers *Are We Slaves to Our Genes?* as a critique of this rising epistemology. Using an enormous compilation of modern genetic research, Alexander argues that the development of most human traits and behaviors is far more complex than what genetics can account for alone. Rather, current genetic research suggests that the development of a majority of human traits and behaviors is the result of a complex interaction between genes, the environment, and developmental timing; this includes the interaction between interrelated biological systems.

Alexander begins by making a case for the prevalence of genetic determinism in the modern cultural narrative. Using multiple current examples, he highlights how genetic determinism is both implicitly and explicitly woven into the presentation of scientific research, especially in pop culture. He then spends the next three chapters acquainting the reader with basic genetic principles. Along with a basic introduction, he provides current information on how genes and the environment interact during human development. He also offers a thoughtful analysis of current research and techniques for connecting human behavior with genetics. In these chapters, Alexander is careful to be both artful and delicate as he tries to strike a balance between making the information palatable for nonscientists, while still engaging for experts in the field. For either reader, the information presented in these chapters is foundational to understanding the genetic research and analysis presented in later sections of the book. The focus then shifts to providing detailed summaries and analyses of current genetic research on a number of culturally relevant topics.

In chapters 5, 6, and 7, he explores the relationship between genes and mental health, genetics and intelligence, and genes and personality, respectively. The analysis in chapter 7 also includes a look at a few well-known personality disorders. The correlations highlighted and the analyses provided are grounded in current psychological and genetic-based research. The examples used are relevant and interesting for scientists and nonscientists alike. In chapter 9, Alexander moves his attention to the genetics of food desire, weight, and the propensity for exercise. Again, he makes a strong case to show that genetic research does not support the narrative around genetic determinism for development of these traits and behaviors.

Alexander then decides to tackle the correlation between genes and three of the most controversial issues in current American society: religion, politics, and sexual orientation. On each of these contentious issues, he provides an extremely well-researched, thoughtful, and even-handed analysis that is grounded in scientific research, not opinion. The penultimate chapter provides an exquisite summary of the previous chapters

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that include additional rationale for his thesis. He then closes the work with a nod to some of the philosophical and religious discussions on genetic determinism. In this chapter, he also provides an interesting contrast between two current worldviews (Christianity and Transhumanism) as they relate to genetic determinism, free-will, morality, and human purpose. The chapter is logically constructed and provides additional compelling rationale against genetic determinism, especially for a non-Christian reader.

Anyone who dives in to *Are We Slaves to Our Genes?* will find it an engaging and thought-provoking read. Alexander summarizes and synthesizes an immense amount of current scientific research into a clear, concise, and palatable narrative. His chapter on genes and sexual orientation is one of the best and well-balanced compilations of current genetic research on the topic around. The chapter includes some current psychological research as well. For those with interest in this topic, the book is worth picking up just for that chapter. Whether the reader is a scientific novice with an interest in pop culture and genetic determinism or an expert in the field, Alexander does a masterful job walking the reader through the current genetic arguments to show that we are more complex than nature versus nurture.

Note

¹Alex Carchidi, "23andMe Is Going Public via a SPAC. Here's What You Need to Know," *The Motley Fool*, February 9, 2021, <https://www.fool.com/investing/2021/02/09/23andme-is-going-public-via-a-spac-heres-what-you/>.

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IN SEARCH OF THE SOUL: A Philosophical Essay by John Cottingham. Princeton, NJ: Princeton University Press, 2020. 174 pages. Hardcover; \$22.95. ISBN: 9780691174426.

There is a longing in the human soul for meaning, fullness, God. That is what philosopher John Cottingham claims in his marvelous philosophical essay, *In Search of the Soul*. The book historically traces speculation on the soul and its nature from Plato to Descartes to Daniel Dennett, but it is also an impassioned summons to heed the soul's native orientation to the transcendent. It is noteworthy for its philosophical acumen, accessibility, and appreciation of literature's contribution to the conversation. In the opening chapter alone, he alludes to Philip Pullman, Shakespeare, Wordsworth, and T.S. Eliot. For the purposes of this brief review, I shall concentrate on the philosophical heart of the book, chapter three, and end with a summary overview of the last two chapters.

In chapter three, Cottingham confronts two tendencies in contemporary discussion about the soul and its nature.

Today, discussion of the soul centers on the nature of consciousness. Consciousness poses a challenge to the impersonal, mechanistic, materialist consensus of science. So, while neurobiology may be adept at telling us what parts of the brain "light up" in experimental settings, there is an enormous explanatory gap between the registration of stimuli in hemispheres of the brain by an fMRI and the first-person experience of *qualia* such as the taste of cinnamon, the feel of corduroy, or the deep satisfaction in knowing that you are known. How do we integrate the elusive nature of consciousness within the impersonal, mechanistic picture of reality of the sciences? For some, such as Daniel Dennett, we don't, and so we must belittle and discount it. Consciousness is, to use Dennett's analogy, a "user-illusion" like the "click and drag icons" on our computers which bear no relation to its complicated micro-circuitry. The illusion (replete with audio accompaniment) is there only to "humor" our perceptual and cognitive apparatus and pertains to nothing real in the computer. Our "subjective qualitative awareness" is our user-illusion, the click and drag icon that is consciousness.

Cottingham's response to Dennett is an ancient one. Socrates, in the *Phaedo*, once employed something like it when discussing the moral reasons for which he died. First, Dennett ontologically privileges the micro properties of the computer's circuitry over the macro properties. That is, the printed circuit board is real, the icon is not. But, says Cottingham, this is utterly arbitrary and unjustified. Why not say that both micro and macro properties are equally real? The icon may be dependent upon the micro properties of the computer (like the soul in relation to the body), but that doesn't mean it is ontologically dubious. The rich, meaning-laden world to which the icon appeals is just as real, though it can be accessed and understood only within the realm of the conceptual (p. 79). For Cottingham, Dennett's materialist bias is showing: it is only real if it's caught in my net. Therefore, he rejects the attempt to eliminate consciousness from the status of the real by reducing it to an illusory side-effect of the workings of the brain.

In addition to Dennett's materialist reduction, there is another take on consciousness that Cottingham finds unsatisfactory: panpsychism. Panpsychism is, philosophically, at the opposite pole of the Darwinian account of consciousness in which it comes at the end of the process of evolutionary development (p. 80). Instead, panpsychism claims that consciousness is present, inchoately, from the very beginning in the simplest parts/particles. Following the insights of William James, Cottingham holds that panpsychism is "a kind of category mistake" in which properties more plausibly attributed to wholes (like persons) are implausibly ascribed to parts. In addition, though he may agree with panpsychism that consciousness is, somehow, intrinsic to matter – though a latecomer in evolutionary

history—he takes issue with the contention that consciousness is ultimately unintelligible, “a brute fact we cannot deny, but which we cannot ever hope to incorporate into any wider picture of reality” (p. 83).

In a manner similar to consciousness, many philosophers and scientists also regard moral truths as anomalous, out of step with the neutral, quantitative take on the world of the sciences. In his brief survey, moral truths/values are viewed as human projections or groundless “irreducible normative truths” (p. 86). Both of these positions, for Cottingham, fail to do justice to the nature of our experience of the good.

Cottingham maintains that theism is the most congenial framework for consciousness. For not only is it perfectly compatible with the “models and mechanisms of the modern physical sciences” (p. 90), but in this setting consciousness need no longer be dismissed as illusion or anomalous outlier. Theism is congenial to the first-person, qualitative character of consciousness because God is a person and if, as the great theistic traditions affirm, a human being is made in the “image and likeness of God,” then it makes sense that matter has the potential to evolve into awareness and self-awareness. Life’s evolutionary orientation could be seen as God’s way of seeking to be in relation to God’s creation. In a Trinitarian context, God is not only a person but a communion of persons rooted in love. So, not only is our personhood grounded, but our social nature is affirmed as an echo of God’s interpersonal communion. In addition, our ineradicable sense of normative value loses its anomalous character by finding its natural source and ground in a God of infinite goodness. Finally, theism helps us correct for a tendency in nontheistic conceptions of consciousness to hold that we are the creators of the consciousness we find so captivating, the good we find so compelling. But this, Cottingham maintains, fails to do justice to the profundity of our experience of marveling at the “magical mystery show” of consciousness (p. 92) or the experience of being confronted by what the good demands. So ends my review of chapter three.

In chapter four, Cottingham defends the compatibility of modern psychoanalysis with theism. Here, the depths and opacity of personhood are acknowledged and explored. The dynamics of psychoanalysis are seen to mirror the struggles toward self-knowledge and self-donation found in spiritual direction. The winding corridors and duplicities attendant upon our search for authentic selfhood in psychoanalysis may be a condition of our sinfulness. Finally, chapter five recapitulates the theme adumbrated in chapter one, the natural longing of the human person for God. It is an old theme, but Cottingham has made it new: we were made for God and our hearts are restless until they rest in God.

This is an engaging and inspiring work. Cottingham does not pretend to have all the answers or to have

proved what is beyond proof. This is one of the great strengths of his book. He is alert to the questions and to the native orientation of our souls.

Reviewed by Lloyd W. J. Aultman-Moore, Waynesburg University, Waynesburg, PA 15370.



TECHNOLOGY

NIETZSCHEAN MEDITATIONS: Untimely Thoughts at the Dawn of the Transhuman Era by Steve Fuller. *Posthuman Studies 1*, ed. Stefan Lorenz Sorgner. Basel, Switzerland: Schwabe Verlagsgruppe, 2019. 240 pages. Hardcover; \$146.00. ISBN: 9783796539466. Paperback; \$41.00. ISBN: 9783796540608.

Christians turning to Nietzsche for support may be counterintuitive, but that can be the case with regard to radical human enhancement technology. As addressed in the June 2020 theme issue of *Perspectives on Science and Christian Faith*, transhumanism presents a treacherous landscape that calls for a thoughtful response from theologians and faith communities. The therapies and technologies already impacting the structure—physical, cognitive, affective, and other aspects—of our lives are growing in precision and potency. And, as indicated in the name of this series, “Posthuman Studies,” discussions are underway about the replacement of *Homo sapiens* with *techno sapiens*. Whether our technological future is heavenly or hellish depends on the values embedded in the technology and how that technology is used, so we who are alive now have a moral imperative to do our part to ensure that technologies of human enhancement unfold responsibly.

All the religions are far behind where they need to be in understanding and making critical assessment of radical human enhancement technology and its champion, a movement called transhumanism. Judaism and Christianity are ahead of other religions in this regard, but even they have much work to do and quickly, given the fast pace of the developing technologies in areas such as genetic engineering, tissue engineering, robotics, and artificial intelligence.

Steve Fuller is well qualified to critique the transhumanist agenda. Auguste Comte Professor of Social Epistemology at the University of Warwick, UK, and co-editor of the relatively new series, *Palgrave Studies in the Future of Humanity and Its Successors*, he has written twenty-five books about many subjects, including intelligent design, philosophy of science, and social epistemology, an interdisciplinary field he helped develop.

The three sections of *Nietzschean Meditations* address the philosophical and theological history of transhumanism, the politics of transhumanism, and the role of death in transhumanism. There is a lot about transhumanism in

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this volume. This review addresses just a few slices relevant for Christian readers.

The *Übermensch*, the future superman (also translated “Superior Man” and “Higher Man”) Nietzsche made famous, was denigrated following World War II due to its association with the Nazis. Fuller travels back to Nietzsche’s early reception when the superior man was not a racially tinged idea. This makes it possible for Fuller to “remain interested in the early twentieth-century image of Nietzsche as someone who took literally the prospect of transcending the human condition—a futurist who was unafraid to confront the puzzlement and even suffering that it would entail” (p. 10).

As with the transhumanist agenda, a happy outcome for Nietzsche’s superman project was not guaranteed. Nietzsche’s tightrope walker, which may be understood as a metaphor for the human condition, falls to his death. For Fuller, this does not mean that Christians, committed to transformation, should not make use of these technologies or see them as a means of God’s grace. “As Nietzsche might put it—and transhumanists would recognize—we are not superior animals but failed gods” (p. 17). However, Fuller says we cannot regain our standing on our own; it is a grace-gift from God. Along the way, Fuller adeptly maps varieties of transhumanism onto theological (but not necessarily orthodox) positions, for example, Aubrey de Grey’s Pelagian-like biological superlongevity program and Ray Kurzweil’s Arian-like vision of “divine” consciousness escaping the confines of the body. For Fuller, the Arian “supposes that humans ‘always already’ possess divine capacities which may have yet to be discovered” (p. 47). And, importantly, short of making choices for transformation, “humans may freely fall into a further degraded state, which may include regarding their degradation as satisfactory if not superior to the time when they were close to God” (p. 18).

Christians can find Nietzsche a thoughtful guide for a proactionary (as opposed to a precautionary) approach to technological possibilities for human enhancement. Being proactive does not mean underestimating the risks these programs entail. While the tightrope walker can reach the other side, humility asks us to recognize that it is a “risky project of self-improvement” (p. 20). But we can face the danger and push through the fear. “However much day-to-day empirical realities remind us of our earthbound nature, we are nevertheless more than just that” (p. 34). And then, rhetorically, Fuller asks: “The question then becomes how to give that ‘transcendental’ aspect of our being its proper due: Is it just something that we release on special occasions, such as a church service, or is it integral to our ordinary being in the world, propelling us to realize our godlike potential?” (p. 34). In this context, Fuller asserts that faith can be understood as a “creative response to radical uncertainty” and a belief in providence, that is,

“that God will always provide what we need to know to improve our position—but the trick is for us to figure what that is” (p. 34).

This book, then, is not so much about Nietzsche as it is a meditation inspired by Nietzsche that provides a sober critique of transhumanism and its possibilities. The Christian religion will do well to provide a theological response to radical human enhancement, and Nietzsche, via Fuller, can provide guidance, albeit from an unlikely source.

Reviewed by Calvin Mercer, Professor of Religion, East Carolina University, Greenville, NC 27858.

THE CHARISMA MACHINE: The Life, Death, and Legacy of One Laptop per Child by Morgan G. Ames. Cambridge, MA: The MIT Press, 2019. 309 pages including appendices, notes, bibliography, and index. Paperback; \$35.00. ISBN: 9780262537445.

As with many who lead development projects, Negroponte and OLPC’s other leaders and contributors wanted to transform the world—not only for what they believed would be for the better but, as we will see, in their own image. (p. 4)

Morgan G. Ames’s book, *The Charisma Machine*, is a deeply incisive analysis of the One Laptop per Child (OLPC) project. The OLPC project, led primarily by Nicholas Negroponte, sought to provide millions of simple, robust, inexpensive laptops to children in developing countries, to allow the children to rise above societal and educational limitations. The author analyzes not only the hardware and software of the OLPC XO laptop, but also delves into the leaders’ experiences as “technically precocious boys” and “hackers” at MIT’s Media Lab, their educational philosophy of constructionism, and both their personal charisma and that of the XO laptop.

The book appears to be a reworking of the author’s PhD dissertation from Stanford University in 2013, and as such, is not an easy read. Understanding the book requires understanding a few oft-used terms, defined in the introduction. Ames repeatedly uses the term “social imaginary” defined as

a set of coherent visions by a group of people to collectively “imagine their social existence,” as philosopher Charles Taylor puts it—the ways that people imagine themselves as part of a group and the identities that this group takes on in their minds. (p. 6)

The book also emphasizes the leaders’ common life experiences as technically precocious boys—boys who grew up taking apart devices to understand them and then rebuilding them to make them better. Their experiences continued in the group at MIT’s Media Lab, where members would play with computers to learn how they worked and then would challenge each other to reprogram them and extend their capabilities. These

individuals generally had been unhappy being educated at “factory schools,” and thus they believed that all children could better educate themselves by being given unsupervised access to laptops. They believed in extreme educational constructionism: children learned best by unrestricted and unguided play, and if given the opportunity by being given a laptop, they would learn to program, would learn English, and would learn how to diagnose and fix hardware problems, all without supervision.

Finally, the term “charisma” is crucial. “Charisma is not legitimized through bureaucratic or rational means but by followers’ belief that a leader has extraordinary, even divine, powers that are not available to ordinary people” (p. 8). Negroponte and others were charismatic individuals, making claims about OLPC (and education and society) that others, then, simply accepted as true.

The XO laptop itself, Ames claims, was a charismatic machine. It was a small, inexpensive, colorful laptop, running open-source software, and touted as tough and reliable. In reality, the hardware suffered from many problems: poor battery performance, insufficient memory, fragile wireless antennae, a flaky keyboard and trackpad, and a screen that cracked easily. The software provided by the operating system was supposedly easy to learn and use, and included educational tools (Scratch, Tux Paint, etc.) and an internet browser. Most programs used English in their instructions; the assumption was that children in non-English-speaking regions needed to and would learn English by using the programs, and thus they would become fluent in the “universal language” of technology and industry.

Chapter 1, “OLPC’s Charismatic Roots,” seeks to answer the question, “Why did so many so enthusiastically accept OLPC’s charismatic promises?” The chapter provides a foundation for the rest of the book, going over the histories of Negroponte, and more importantly, Seymour Papert, who first conceived of the XO laptop. Papert was a technological utopian, believing that technology had the power to lift people out of poverty, fix education (by disrupting the status quo), overthrow corrupt governments, and so on. Papert’s life experiences and writings (*Mindstorms: Children, Computers, and Powerful Ideas*) provided the foundation for OLPC.

Chapter 2, “Making the Charisma Machine,” describes the OLPC hardware and software, and the five principles of OLPC: child ownership, low ages (targeted toward children ages 6–12), saturation (“where every child will own a laptop”), connection (to the Internet), and free and open software. Of these five, saturation and connection ended up proving to be the most difficult. Saturation was never achieved because the laptop hardware was so fragile that many children who were given a laptop, broke it, and they were then never able to use it again. Connection proved to be difficult. Initially the laptop was going to implement a new networking

technology which would allow laptops to seamlessly find and connect to one another, forming an ad hoc network across a town. This technology was never fully realized, and so connectivity was possible only if the government or a nongovernmental organization (NGO) installed wireless hotspots at schools.

In chapters 3 and 4, Ames recounts what she observed in Paraguay over a seven-month period. OLPC deployed the XO laptop in Paraguay, especially in one city, Caacupé, with the help of an NGO called Paraguay Educa. Ames recalls seeing hundreds of broken laptops stacked in a backroom at Paraguay Educa, notes how children used the still-working laptops (primarily to download games and music), and how already over-worked teachers had little time to incorporate this new disruptive technology into their lesson plans. Success was achieved only in a few schools where Paraguay Educa hired technology *formadores*, or trainers, to be placed to help maintain and promote the laptops. Money for paying these *formadores* quickly ran out, however. She found and interviewed a few children who had taught themselves to program using Scratch or Turtle Art. In all cases, these children had guardians who closely monitored the children’s use of the laptops, and encouraged them to create content instead of just consuming it. In other words, these children did not, without supervision and outside encouragement, learn programming, learn English, and learn how to repair their own laptops.

Chapter 6 is a fascinating chapter that examines the role of performance in the success of NGOs and nonprofits. Most organizations sponsored by outside funding sources must periodically demonstrate the effectiveness of their work to their sponsors. Paraguay Educa was no exception, having to demonstrate to visiting leaders of OLPC how well their vision was being realized. These dog-and-pony shows made the OLPC leadership believe that everything in Paraguay was going well. These demonstrations were necessary for the employees of Paraguay Educa to keep their jobs. The OLPC leadership were also not interested in digging too deeply to discover any problems, as they also had to report back to their donors. Ames analyzes this system of accountability based on performances, noting its advantages and disadvantages.

The final concluding chapter summarizes the five main takeaways of the book:

1. Big cookie-cutter solutions to problems without thorough research and sustained honest analysis “in the field” are probably doomed to fail.
2. When developing a project, don’t underestimate the hard realities of the culture where the project is to be deployed.
3. Be cognizant of the privilege of those proposing a solution, and how others may not have this privilege.

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4. Don't be fooled by performances.
5. Inspect the undergirdings of your philosophies. Are they legitimate?

OLPC failed on all of these points. Millions of dollars were spent, and there is little evidence of any lasting impact.

Although it is not an easy read, this book is recommended for those who are interested in thinking about how computing can be effectively used to make a difference in this world. If you are a Christian, and desire to be an active agent of change for good, you also should spend time considering your privilege, the culture of where your project will be deployed, and why you are optimistic about the success and impact of your project. Will you be making the same mistakes that OLPC made?

Reviewed by Victor Norman, Associate Professor of Computer Science, Calvin University, Grand Rapids, MI 49546.

MY TECH-WISE LIFE: Growing Up and Making Choices in a World of Devices by Amy Crouch and Andy Crouch. Grand Rapids, MI: Baker Books, 2020. 208 pages. Hardcover; \$15.99. ISBN: 9780801018671.

My Tech-Wise Life is a book about life before it is a book about technology. Through a discussion of her own experience growing up in a "tech-wise family," Amy Crouch shares her struggles and successes as a young adult navigating a world that is obsessed with technology. She honestly shares how she doesn't have it all figured out, while describing the ways that she keeps technology in its place as a tool in her life, rather than as a controlling force.

Technology causes us problems that aren't rooted in technology. It changes the problems that we face, but it doesn't create fundamentally new problems. Sometimes it exacerbates problems that we have always faced, such as distraction. Other times, it covers up problems—this sounds good, until you realize that it also covers up the solutions. We experienced distraction and loneliness long before the distractions from phone notifications, and the loneliness from seeing Instagram posts of parties we weren't invited to. This book is about how to live—with and without technology.

In each chapter, Amy tackles a different facet of technology, exploring how we can be free of the demands of technology in a way that helps us to be more engaged in our own lives. Some chapters address specific technologies: for example, social media, and how "we don't have to compare ourselves" (chapter 1). Other chapters cover how we can use all of our technology better so that "we don't have to be exhausted" (chapter 7).

Each chapter is paired with a letter from her dad, Andy Crouch, the popular Christian author of *The Tech-Wise*

Family. Each chapter also ends with "What to Do Next," beginning with questions of reflection, then moving toward the challenges of how to start conversations with your family and friends about how you want to be using technology, and ending with suggestions for how to change your habits surrounding technology.

My Tech-Wise Life reads more as an invitation than as a lecture. It is encouraging to hear this from Amy's perspective, as someone who grew up with smartphones and Instagram as a central part of high school. Amy is honest about how she struggles with what she's writing about—including issues of secrecy, loneliness, and exhaustion. These negative effects aren't invented by tech companies, but they are reframed and coded into the devices we carry around. She doesn't pretend that our problems can be fixed by purging our life of technology. Yet our situation isn't hopeless; Amy offers stories of her successes too. We are not inevitably going to lose to technology. There are ways to live a more meaningful life and to not succumb to the exhaustion of the endless scroll.

The book would be a valuable read for any young adult, but it is written to be most relevant for teens. This is apparent in some of her prompts to discuss technology use with parents, as well as in the emphasis placed on the teen demographic in the Barna research statistics scattered throughout the book. These statistics are based on surveys of young adults, so they primarily add confirmation that everyone else is struggling with the same technology problems. Aside from the statistics and a few of the prompts, the book is applicable to anyone who grew up with digital technology and is needing to reassess their relationship with it.

With its easy-to-read style, *My Tech-Wise Life* is a quick read, and would fit well for a small group wanting to read a book together. It is a hopeful, yet realistic book. It is honest about the problems that we face in using technology wisely, but it also offers concrete suggestions to be more mindful of technology use. Amy invites us into a life that is shaped around relationships and wonder rather than around technology.

Reviewed by Elizabeth Koning, graduate student in the Department of Computer Science, University of Illinois at Urbana-Champaign, Urbana, IL 61801.

RIGHT/WRONG: How Technology Transforms Our Ethics by Juan Enríquez. Cambridge, MA: The MIT Press, 2020. 304 pages. Hardcover; \$24.95. ISBN: 9780262044424.

Right/Wrong: How Technology Transforms Our Ethics made me angry, made me think, made me research, made me discuss, made me agree, made me disagree ... and it turns out that is what the author was hoping for. His goal was to get people interested in ethics again.

His point was that “technology provides alternatives that can fundamentally alter our notion of what is right and what is wrong.” Ethics, he believes, often do (and should) evolve, and technology is increasingly becoming the catalyst for this evolution. He states that this book is not the classic “scholarly” book that provides answers, but one that he hopes will incite debate and provoke questions regarding the status quo.

As a computer scientist, I expected “technology” to be digital technology, but Enríquez uses a broader, and probably more proper, definition. Though he doesn’t provide a formal definition, it appears to be something like “applied scientific knowledge.” His definition of technology encompasses birth control, medications, gene editing, machines from the industrial revolution, and lab-grown beef, among other examples.

Enríquez begins the book with examples of what he means by technology influencing what we see as ethical. One example is the advent of birth control. The use of birth control afforded women more opportunities in education and career development. This, in turn, allowed them more financial independence which lessened their need to stay in abusive marriages. Even without the aspect of divorce, today many would look back and see the lack of education and career opportunities for women as unethical treatment. Birth control allowed for and encouraged more-ethical treatment of women.

Enríquez also looks to the future with the more contemporary example of gene editing. Many people today are appalled at the idea of editing a baby’s DNA, even with the intent of preventing future diseases. They see it as unethical. Could it be that in the future our kids and grandkids will be appalled at how unethical we were for not editing their genes to avoid the cancer that they now face?

A third example of technology influencing our ethics is related to meat production. Currently, almost all of the meat we consume is a result of raising and slaughtering animals. Present-day technologies, however, allow for lab-grown beef. When this product becomes more affordable and perhaps the norm, will future generations regard us as unethical for the “cruelty-ridden” steaks and burgers that we consumed?

Throughout the book, Enríquez addresses controversial issues, including the educational system, mass incarceration, drug legalization, mental health, climate change, and warfare. There are plenty of topics to use as conversation starters. Unlike other books that help us to see the potential ethical dangers of technology, Enríquez focuses on the ways that technology enables us to become more ethical—if we are willing to adapt.

I love the passion that Enríquez brings to the discussion. He believes that technology without ethics is a

recipe for disaster, and he wants people to pay more attention to what is right and wrong. He wants us to be open to re-evaluating what we believe to be right actions if we are given new information or possibilities through technology. At the same time, he wants us to be humble, recognizing that it can be hard to decipher right from wrong in new situations and that it can take time for a society to make the changes necessary to produce more-ethical actions. Hindsight is often 20/20, and people that went before us—even if decent people—made mistakes. We will also make mistakes. Furthermore, there are deterrents to making changes: inconvenience, shame, loss of status, and other costs. He wants to encourage us to be aware, kind, civil, and open when we are considering what is right and wrong given new technology. To all of this, I heartily agree.

In keeping with the author’s hopes (that the book would also cause us to disagree, but discuss), I also wanted to mention a few things from the book which troubled me. As previously noted, he tells us that this is not a scholarly book, one meant to prescribe or give answers. Yet, he states that the current healthcare system is unethical, the cost of college is unethical, it is unethical to restrict gay marriage, and the ethical thing to do with autonomous cars is to make them available as soon as they can save more lives than with our current system. Agree or disagree with his conclusions, he is prescribing. He does provide plenty of “answers” throughout the book.

In chapter 3, Enríquez addresses those who would absolutely claim to know right from wrong. One of his main areas of focus is religion. He speaks specifically to people of faith who claim to know right from wrong because they know God’s word. He then attempts to show how religious principles too have evolved. He declares, “The religions that survive long-term tend to evolve.” Of interest to Christians, he states that “the Bible, the word of God, and hence Christian ethics, has evolved, or been reinterpreted, since the good old days of the Old Testament.” He cites examples in which Christian ethics have changed over time. Interpretations of passages in the Bible have altered as our society has changed, and as technology has allowed us to communicate more broadly. He cites how Pope Francis has revised how he speaks about various issues. Agree or disagree, these are interesting topics for research and reflection.

But in his zeal to make his point, Enríquez makes certain statements (e.g., “None of the Gospels were written while Jesus was alive, and none by someone who actually met him”) that I don’t believe would be accepted by mainstream Christians. Yes, the Gospels were not written when Jesus was on Earth, but it appears that most Christian scholars believe, for example, that the Apostle John wrote the book of John. (Although Enríquez does admit in the references that his citation supporting this statement is from a rather controversial book.)

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Finally, the author is trying hard to make this ethics book interesting, far from one of those stodgy, dry ethics theory books “that alienate the general reader” (his words). He accomplishes that, but some help from ethicists could be very beneficial. Very early in the book Enríquez states, “Because we never thought we could come close to doing what we take for granted today, we have no framework to deal with changing ethical norms.” The truth is, ethicists have several frameworks available, and Enríquez even uses or suggests a couple of them—perhaps without knowing it.

Near the end of the book, he admonishes the reader to “bring front and center several core principles: modesty, generosity, empathy, civility, humility, compassion, decency, truthfulness ... That is what underlies what we eventually discover to be ethical” (p. 221). This essentially describes what is known as a virtue-ethics framework. Those “core principles” he mentioned are virtues. The virtue-ethics framework simply asks: what would a virtuous person (someone who is compassionate, generous ...) do in this new situation? The second framework is utilitarianism, which asks the question: What would produce the best outcome for the most people? He applies this approach to the authorization of autonomous vehicles and to the discussion of which types of healthcare developments should be prioritized. Both frameworks can be helpful tools for informing tough ethical decisions.

Enríquez brings a wealth of interesting scenarios to this discussion of the future of ethics because of his life experience and work in cutting-edge science. I truly appreciate his desire to write a book that will hold our attention and that is far from a dry textbook on ethics. But the work of those who think about these ideas every day ought to inform the discussion. In glancing through the references, I found only two of hundreds of references that looked to me to be directly related to ethics research. In writing about computer ethics as someone trained in computer science, I have certainly found the literature from those trained in ethics to be enlightening.

This book is an interesting read for those thinking about right and wrong, and this includes people who might not normally be inclined to do so. It can help us realize that we need to re-evaluate frequently and be willing to listen to other points of view with humility. But there is very little information on how to make those tough ethical decisions that we will be continually asked to make. For that, the reader will need to look to other resources.

Reviewed by Lori Carter, Professor of Computer Science, Point Loma Nazarene University, San Diego, CA 92106.

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DIVINE ACTION, DETERMINISM, AND THE LAWS OF NATURE by Jeffrey Koperski. New York: Routledge, 2020. 168 pages. Hardcover; \$160.00. ISBN: 9780367139001. Ebook; open access.

When it comes to talking about God’s action in the world and laws of nature in the science classes I teach, my students sometimes wonder if God, violating the very laws he created, is a problem. Jeffrey Koperski has written a book for those students and for you, too! You can see that Koperski is a teacher well experienced with explaining philosophical ideas to students majoring in anything but philosophy (who form the bulk of our philosophy teaching). This makes his new book a very accessible and enjoyable read. Moreover, no matter your background, you are likely to learn something new reading this book, perhaps even about your favored approach to divine action in the world.

Koperski is right to point out that philosophy of science—particularly philosophy of physics—is missing from most divine action discussions. If it enters at all, philosophy of science makes only cursory contributions. He is also right to observe that the causal closure of the physical, or of nature as a whole, gets too little attention in the divine action literature despite the outsized role it plays. Koperski ably shows why neither causal closure nor determinism are genuine obstacles to divine action in the world. Philosophy of science allows Koperski to clear a lot of this dead brush from the ground of divine action literature. This is an important contribution to the discussions.

Koperski helps us think more accurately about laws of nature (full disclosure: he and I have talked about these issues and tread a lot of the same ground). The assumption or metaphor of laws as “governing” events in nature has been accepted as largely unanalyzed in the divine action literature. Though he rarely uses this language, Koperski shows why the metaphor of laws “governing” things does not stand up to close analysis. He endorses a view of laws functioning as constraints that enables us to think more clearly about how God can act in the world without violating laws.

Koperski describes his model for divine action as decretalist and nonviolationist. The laws that scientists deal with represent divine decrees—gifts of order and constraint to creation. The regularities of creation genuinely exist and genuinely act. Koperski captures a biblical view of God’s relationship to creation; he also considers natural philosophers’ critical thinking about laws in the seventeenth century.

As for nonviolationism, Koperski points out that laws—the nomic conditions or features of the world—do not make things go (no “governing” metaphor). Rather, as physicists have recognized, it is forces that make things move. What laws do is provide nomic constraints on the behavior of forces (p. 134). His model is nonviolationist in that these laws are not violated when God acts in nature; rather, when there are nonnomic changes, “the laws adapt to change. This was true when we thought that nature was Newtonian, and it remains true in the age of quantum mechanics and relativity” (p. 135). Koperski’s account is consistent with what I think physics reveals to us about the laws of nature—they function as typicality conditions: A law tells us what to expect for the behavior of forces on a system typical for the constraints represented by the law. But when new factors or conditions are introduced, the law does not tell us what to expect. The typicality is shattered, but not the law. Yet, this does not distress physicists; we know how to model and calculate what happens with these additional factors that the original law did not cover.

Consider a simple example: A grandfather clock keeps time well because of the lawlike regularities involved in its functioning. Yet, if I use my finger to keep the minute hand from moving forward, the clock will cease keeping time accurately. No laws have been violated; however, a genuine physical change has taken place regarding the clock’s functioning. The regularities are still there—the laws are still operative—but they adapt to the presence of a new effect or force introduced into the clock system. What this means is that “once the laws of nature are distinguished from the behavior that is the *result* of those laws and nonnomic conditions, we find a vast space of contingency in which God can act” (p. 135). Koperski calls this a “neoclassical model of special divine action” (p. 135) because God is not manipulating laws to act in the world. If humans can make genuine nonnomic changes to nature without violating laws (e.g., rockets that overcome gravity’s pull), clearly God is able to. The question then becomes one of God’s relationship to the contingent order he has given creation.

You may be thinking of possible objections to this account of divine action. Koperski discusses several and I recommend you read what he has to say about them. I will briefly discuss what seem to be the most serious—that is, possible violations of energy conservation. There are many reasons to think that conservation laws function as constraints on systems when particular conditions hold. For instance, as Koperski points out, according to general relativity, energy conservation does not apply to an expanding universe. In a dynamic spacetime, the motion of objects does not conserve energy. More generally, any system whose dynamics depend on time will fail to conserve energy, and there

are lots of such systems in the actual world. Physicists have precise ways of quantifying how much a system violates energy conservation and describing the resulting order of the system in question. The idea that any system violating energy conservation can always be embedded into a larger system restoring conservation is just that—an idea and nothing more. Physicists do not have any good reasons supporting this idea (though some defend it to maintain their reductionist intuitions). There is plenty of opportunity for divine action in the world and energy conservation is never an issue.

One could sweat some details. For example, Koperski rehearses arguments to the effect that quantum processes suppress chaos, thus undercutting the amplification of small quantum changes to macro-world effects (pp. 52–53). While it is true that quantum mechanics is no friend of chaos, the amplification argument is more along the lines of a chaotic macroscopic system being sensitive to quantum fluctuations; this doesn’t depend on the existence of so-called quantum chaos. There always are stringent constraints on such amplification, however; so, Koperski is correct that banking on this as a route for divine action is still a hopeless cause. And I am not convinced that physics and philosophy of science are pointing toward an eventual rejection of ontological randomness in quantum mechanics (pp. 60–63). Irreducible randomness is not lawless chaos; it is a form of order that God has given to creation even if it offends the deterministic intuitions of some physicists and philosophers. None of Koperski’s account stands or falls with these quibbles.

I would like to see Koperski’s account enriched with the doctrine of creation, such as in *Understanding Scientific Theories of Origins: Cosmology, Geology and Biology in Christian Perspective*, Robert C. Bishop et al. (IVP Academic, 2018). His discussion in sec. 4.2 suggests that seventeenth-century natural philosophers eventually ditched all forms of divine-mediated action for direct or unmediated divine action as embodied in the laws of nature (the discussion is a little oversimplified, but this is a short book). This amounts to treating the laws of nature as the main mediators of all that happens in creation (back to the “governing” metaphor). In contrast, the doctrine of creation’s emphasis on multiple forms of divine-mediated action helps to address the divine relationship to creation in which God is working in and through nature, not outside and apart from it. This is exactly what Koperski’s account needs for some of the questions he entertains at the end of the book and for some he leaves unanswered (e.g., why one does not have to restrict divine concurrence to Thomist models only).

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Practical Considerations in Vaccine Conversations

My recently published article “Vaccine Hesitancy: Christian Reasons and Responses” (*PSCF* 73, no 1 [2021]: 4–12) has garnered much interest.¹ In many contexts, including the Diving Deeper discussion in April, I’ve been repeatedly asked, “What should I actually say?” While my article provides a framework of empathy through which we can discuss and respond, it does not actually provide any practical examples. Therefore, the purpose of this letter is to respond to my own article and to the questions I have received from numerous readers. Here I offer my thoughts on a practical dialogue about vaccines.

When discussing vaccines with a vaccine-hesitant individual, I suggest we adopt the same approach we would use when sharing our Christian testimony with nonbelievers. First, listen to their story and understand the origin and basis of their vaccine hesitancy. Then, if the dialogue permits, ask permission to share your story and explain the reasons for your vaccine confidence. This two-step approach is influenced by the PromoVac strategy and the works of Sara and Jack Gorman, Erin Smith, and Arnaud Gagneur et al., whom I referenced in my original article.² I have briefly explored both steps below.

1. Listen to their story. Why are they vaccine hesitant?

Have they experienced an adverse reaction from a vaccination? Have they witnessed an adverse reaction in someone they love? If so, share their sadness and demonstrate empathy. Medical exemptions from vaccines are in place for such people.

Have they experienced poor care from their healthcare providers? Have they lost trust in science and/or medicine? If so, share their frustration and pain. Acknowledge that the healthcare system is not perfect. Our feedback can continue to improve care.

Are their views based on misinformation or conspiracy theories? If so, share their desire to find truth, and acknowledge the difficulty in assessing the quality of conflicting sources of information. Without attacking their efforts, encourage them to read all sources of information and investigate both sides of a story.

2. Tell your story. Why are you vaccine confident?

Have you seen the painful and devastating effects of infectious diseases such as polio, influenza, or shingles? If so, emphasize the seriousness of these diseases. Or, conversely, perhaps you have never seen a case of these infections. If so, rejoice over the repression or elimination of these diseases thanks to vaccines.

Are you a parent that wants to keep their children healthy and out of the hospital? If so, share how your children responded to their vaccines. Talk about the

peace of mind you have knowing that your children should never have to suffer through whooping cough, measles, or influenza. You have given your children everything you can to help them live a long and healthy life.

Are you a Christian who believes vaccines are one of many ways we can care for our neighbors, especially our vulnerable immunocompromised neighbors? If so, share your feelings. Perhaps you know of someone taking immunosuppressive medications or chemotherapy and you worry about their risk.

Are you someone who trusts scientists and medical doctors, and has good relationships with them? If so, share your experiences. Talk about the help you have received from medical doctors. Talk about the hope and excitement you have regarding scientific progress.

Are you a scientist or healthcare professional who understands the science behind vaccines? If so, share your expertise and experiences. Demonstrate your morals and your will to help people using the skillset that God gave you.

In summary, this two-step approach facilitates a dialogue about vaccines. It promotes discussion instead of intervention, and persuasion instead of coercion. This process begins with listening and transitions to sharing. In doing so, we put the hesitant individual first and demonstrate our genuine care. As I quoted in my original article, “People don’t care how much you know, until they know how much you care.” We must enter these conversations because we care, and not because we seek satisfaction or personal gain.

As you enter dialogues about vaccines, I pray you show love, patience, gentleness, and self-control. These fruits of the spirit are particularly difficult in disagreements. May the Holy Spirit guide and bless your conversations.

Notes

¹Rebecca Dielschneider, “Vaccine Hesitancy: Christian Reasons and Responses,” *Perspectives on Science and Christian Faith* 73, no 1 (2021): 4–12, <https://www.asa3.org/ASA/PSCF/2021/PSCF3-21Dielschneider.pdf>.

²Sara Gorman and Jack Gorman, *Denying to the Grave* (New York: Oxford University Press, 2017); James Clear, “Why Facts Don’t Change Our Minds,” September 10, 2018, <https://jamesclear.com/why-facts-dont-change-minds>; Arnaud Gagneur et al., “A Postpartum Vaccination Promotion Intervention Using Motivational Interviewing Techniques Improves Short-Term Vaccine Coverage: PromoVac Study,” *BMC Public Health* 18, no. 1 (June 2018), <https://doi.org/10.1186/s12889-018-5724-y>; and Erin Smith, “The Role of Psychology in Advancing Dialogue between Science and Christianity,” *Perspectives on Science and Christian Faith* 72, no. 4 (December 2020): 204–21.

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