Behavioral Sciences

DOI: https://doi.org/10.56315/PSCF3-24Kiser

TRAUMA-INFORMED EVANGELISM: Cultivating Communities of Wounded Healers by Charles Kiser and Elaine A. Heath. Grand Rapids, MI: Eerdmans, 2023. 213 pages, index. Paperback; $19.99. ISBN: 9780802882356.

Trauma-Informed Evangelism is a well-written, thought-provoking, and necessary contribution to the field of evangelism, introducing the recovery principles of trauma-informed care. Trauma-informed care, as practiced in the fields of mental health and substance abuse treatment, recognizes that all people have experienced trauma, that many problematic effects and symptoms are a result of these traumatic experiences, and that the key to helping others heal is found in treating them with kindness and respect to assist them in developing personal empowerment. The main goal in the work is to avoid re-traumatizing people. The key shift in conceptualization moves from one of pathology, to the normal, protective response of the body to threat—from "What is wrong with you?" to "What happened to you?"

Authors Kiser and Heath encourage trauma-informed spiritual care that can be adapted by lay persons, clergy, and clinicians alike. *Trauma-Informed Evangelism* urges readers to recognize the experiences of spiritual harm, understand that this harm has had a significant impact on the survivor's thoughts, feelings, and behaviors regarding spiritual matters (which arguably leads to holistic complications), and to witness these stories in a manner that creates a place of healing rather than of re-traumatization.

The authors break this work into three categories: (1) Disordered Imagination, (2) Healing Imagination, and (3) Embodied Imagination. Disordered imagination begins with the premise that trauma-informed evangelism requires that we understand our neighbors' experiences of harm in a spiritual context so that we can minister to them effectively. As in any type of trauma-informed care, the invitation to share stories without expectation or judgment is an imperative first step. This section begins by introducing a handful of oft-relayed themes, including rejection trauma in terminating relationships, injustice toward marginalized individuals and by those who abused their pastoral authority, and secondary wounding, having witnessed harm toward others.

Kiser and Heath acknowledge complex theological and social questions which arise when we are faced with spiritual harm. They briefly examine questions of the nature of God, and of humankind acting in harmful ways or failing to prevent harm. The authors do a nice job throughout the work of covering the natural and obvious questions that will arise for the reader. This involves discussions of the nature of spiritual abuse and trauma, problematic narratives of supremacy and hierarchy, and healing the historical wounds of exploitation and perpetration within Christendom. They challenge the ever-present presuppositions of those who comprise the in-group and of those who comprise the out-group in the church, who gets to decide, and how these practices have been kept in place.

The authors challenge traditional church norms and beliefs which keep some of these harmful practices in effect. They also introduce alternative, nontraditional theological perspectives that could combat some of these views. However, it is important to note that theological beliefs are simply one piece of the equation. And that, people being people, we are prone to wounding others regardless of the rightness or wrongness of our theological perspectives. Even with the best of intentions, two people can have vastly different perspectives on the best way to problem-solve. And when our deeply held religious convictions are part of the decision-making, we can often be seen doubling down on our positions, inadvertently doing spiritual harm.

Healing imagination tasks the reader to entertain new narratives of the inherent meaning of Jesus as a trauma survivor, to discover and reimagine God in the midst of trauma, and to consider the challenge of producing compassionate, trauma-informed leaders. The authors introduce thought-provoking, alternative interpretations to challenge the traditional meaning we have given the crucifixion story, to God's purpose and reactions to harm, and to how we as evangelists should understand and respond to trauma.

Embodied imagination proposes several alternative approaches to evangelism. This includes the suggestion that our traditional attempts to minister to and to convert those with problems of spiritual trauma are counterproductive, largely due to the instinctual trauma response. That evangelism is "witness-oriented rather than results-oriented" (p. 118) requires that we embody the Good News and release the outcomes to God. It asks evangelists to consider "radically inclusive hospitality" which further expands the boundaries of who is included in the church, and it tightens the boundaries of acceptable behavior to avoid harm and exclusion (p. 140). Evangelists must finally learn to keep a healthy and well-differentiated self from their neighbors, allowing others their autonomy and not becoming discouraged when their best efforts don't deliver the expected results.

Trauma-Informed Evangelism will probably be best enjoyed by those with non-traditional views of Christianity as it considers alternative perspectives such as womanist and queer theology. However, those of a more conservative nature, who are open to the simple and practical message of trauma-informed care, may find a great deal of applicable materials within

the scope of their personal Christian beliefs. *Trauma-Informed Evangelism* is well conceptualized and worthy of a careful read. The discussion questions at the end of each chapter help facilitate reflection and planning for individuals or groups interested in developing this mode of evangelism.

As a clinical trauma specialist and Christian, I found this work especially relevant to my current task, building the mental health department in a residential drug and alcohol treatment center for adult males. The vast majority of these men report trauma, including childhood sexual abuse, violent experiences during incarceration, family of origin abuse, and medical trauma inherent in abusing substances. They have been the victims of trauma, and they have been the perpetrators of trauma. They identify the church as the key component of their healing, but also a key factor of their wounding. The explanations of spiritual wounding and trauma-informed care in this book are sound; they are as applicable to the neighbor who has found moderate offense as to deeply wounded brothers and sisters with complex consequences. I plan to use this material to deepen the focus on the concepts of spiritual wounding and trauma-informed care into my practice.

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DOI: https://doi.org/10.56315/PSCF3-24vanOmmen

DISCIPLES AND FRIENDS: Investigations in Disability, Dementia, and Mental Health by Armand Léon van Ommen and Brian R. Brock, eds. Waco, TX: Baylor University Press, 2022. 330 pages. Hardcover; $59.99. ISBN: 9781481317009.

It has been almost fifty years since I started supporting individuals affected by intellectual and developmental disabilities, and I wish this edited book had been available at that time. While the focus of the different chapters in this book touches on subjects having to do with disability, dementia, and mental health, the real emphasis is on the practical theology of John Swinton, and the ways friendship in and through Jesus informs the "tension between reflection and action, and research and practice" (p. 56).

The book has an introduction and an afterword, and it is divided into four sections: (1) Practical Theology in a Swintonian Key, (2) Vulnerability Subverted, (3) Quests for Faithful Embodiment, and (4) Gently Living in a Violent World. According to the publisher's description of the book, it is directed toward "students and scholars of practical theology, disability theology, mental health, dementia and cognate fields" (https://www.baylorpress.com/9781481317009/disciples-and-friends/). While some of the language is almost inaccessible without a theological background, much of the writing is practical and applicable to those of us who see working for and with people affected by disability, dementia, and mental health as a vocation rather than as a career.

Readers will each have their favorite authors based on their own interests and passions. As a behavior support practitioner as well as a social work professor, I was most affected by the chapter written by Grant Macaskill, a theologian from the University of Aberdeen who identifies as autistic. He writes movingly about the autistic gain for the church when we radically empower the neurodiversity model to discontinue talking about normalcy as a goal and embrace the differences diversity brings within the rich tapestry of the body of Christ. In a similar way, Bill Gaventa's chapter, entitled "All God's Children Got a Place in the Choir" provides another view of the many members of the body whose differences make the body stronger by embracing Paul's vision of God's choice to use the "weak" to bring strength and the "foolish" to bring wisdom to the world the church ministers to (e.g., 1 Corinthians 1 & 2). In his chapter, he asks three questions that I wish I had been asking years ago:

1. Who am I?
2. Why am I?
3. Whose am I?

I have spent some hours reflecting on these three questions, trying to move past the role definitions we so easily gravitate to. Finding the "why" of my existence, the purpose I have in life, is an equally deep question, and asking who I belong to within our kingdom relationships will hopefully help me find my place in God's choir. Reading this book will, I believe, prompt readers to ask the same questions I asked myself. Finding the "why" of our existence and the purpose of our lives are deep questions for all of us. In our Christian lives, finding out who we belong to will help us to find our place in God's choir with all the other critters. For some of us, the call is to be "disciples and friends" to persons with disabilities, dementia, and neurodiversity, and this book may bring that into focus for some readers.

The body of Christ is far more than the worship center of the Christian faith; it is the place where Jesus interacts with all the people Jesus came to minister to as recorded in Luke 14:13–23—"the sick, the lame, the blind, the deaf, the prisoners, the poor, the weak." According to the United Nations, the largest minority group in the world is people affected by various disabilities, accounting for approximately 650 million people out of a population of 7.88 billion people (https://www.un.org/disabilities/documents/toolaction/pwdfs.pdf). It is with and for these people that John Swinton's work seeks to create opportunities for friendships to develop amongst people who come together to experience the friendship of Jesus. Within these relationships we come to know the peace of Jesus, and as Medi Ann Volpe writes in one of the chapters, Jesus *is* our peace, Jesus *makes* our peace,

and Jesus *preaches* our peace. The people I have known over the years whose differences were labeled and diagnosed have ministered the peace of Jesus to me in ways that are too deep for words. They have taught me what friendship is, and reading this book I have come to understand that John Swinton's life and teaching is devoted to cultivating friendship and creating communities in which there are no dividing walls—where all people in need of grace and redemption, love and forgiveness, healing and hope come together as one body with many members.

There are precious few things I would change about this book. I would make the last chapters in the section "Gently Living in a Violent World" the first chapters: I think they are much more inviting to readers, and from my perspective, they contain more information on how to live out this theology of friendship.

Overall, I would encourage all Christians whose lives intertwine with people on the margins of ability and disability to read this book and let it speak to their hearts and their minds. I am looking forward to being able to use this book both as a practitioner and a professor, and in these roles, I am thankful to have read about all the ways I can learn to be a deeper and better friend and human being.

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History of Science

DOI: https://doi.org/10.56315/PSCF3-24Caneva

HELMHOLTZ AND THE CONSERVATION OF ENERGY: Contexts of Creation and Reception by Kenneth L. Caneva. Cambridge, MA: MIT Press, 2021. 735 pages, including notes (138 pages), bibliographies of primary and secondary sources (80 pages), and an index (17 pages). Hardcover; $125.00. ISBN: 9780262045755.

By examining the pagination details mentioned above, one could easily surmise that one will be reading and examining a book grounded in textual detail. And one would be spot on. The weight of the author's research is, quite honestly, breathtaking. Kenneth L. Caneva has devoted his academic life to an examination of energy concepts. He is a professor in the Department of History at the University of North Carolina-Greensboro. A former student of Thomas S. Kuhn, he has also authored two other books: *The Form and Function of Scientific Discoveries* (Dibner Library Lecture, 2000) and an authoritative biography, *Robert Mayer and the Conservation of Energy* (Princeton University Press, 1993). *Helmholtz and the Conservation of Energy* is his latest contribution.

Before we examine the book proper, the obvious question arises: Who was Hermann von Helmholtz? To answer that question one can best turn to the 937-page scientific biography of Helmholtz by David Cahan (*Helmholtz: A Life in Science*, The University of Chicago Press, 2018). Helmholtz (1821–1894), a German physiologist and physicist, is described by Steven Shapin in his review of Cahan's book as "a theorist of (not quite) everything." Helmholtz had an immense range of scientific and cultural interests: physics, physiology, psychology, aesthetics, philosophy. He invented the ophthalmoscope, measured the nervous impulse, contributed to meteorology and atmospheric physics, and helped build some of Germany's scientific and technological institutions.

Caneva wants to explore the context and reception of one of Helmholtz's early (1847) seminal essays, "*Über die Erhaltung der Kraft*" ["On the Conservation of Force"] by examining how this essay shaped the discussion and acceptance of a physical principle: the conservation of energy. How was "conservation of force" eventually transformed into a principle of energy conservation? Caneva offers us a contextualist historiography of this long and complex transition by providing an in-depth analysis of Helmholtz's contribution and influence in the discovery process.

The discovery of the principle of energy conservation is a classic case in the history of nineteenth-century science. Although overshadowed in the public mind by Charles Darwin's principle of natural selection, its historical development raises similar issues. Who discovered the principle of energy conservation? An easy question to pose, but a very complicated one to answer. And more to Caneva's point of interest: Is conservation of energy what Helmholtz initially meant by the conservation of force?

Caneva offers this book as an example "of how what is generally accepted as scientific knowledge is reshaped as it passes through the hands of people with different agendas using different language." It is not an individualistic process, but rather reflects a "collective construction of scientific knowledge." Caneva concludes the book with this assertion: "The cumulative force of this study has implicitly rendered otiose the question of who discovered the conservation of energy" (p. 466). In a real sense, no one individual has discovered the conservation of energy: one could reference Robert Meyer (1842), Helmholtz (1847), William Thomson (1851) [force to energy], and Helmholtz (1853) again. With meticulous detail Caneva highlights the terminological shifts that have taken place as well as the rhetorical skills exercised when the "law" or "principle" was presented to various publics, even in popular scientific settings.

The book has eleven chapters, followed by a "Historiographical Excursus: How Others Have Interpreted Helmholtz's Achievement" (pp. 471–99). In chapter 1, "Helmholtz's Self-Described Principal Concerns,"

Caneva traces out four factors that were central to Helmholtz's thinking: (1) a conviction that the construction of a perpetuum mobile is impossible, (2) a concern with the nature of heat and the source of animal heat, (3) a belief in the illegitimacy of a vital force, and (4) the application of rational mechanics' principles of vis viva [mv^2] and its conservation. According to Caneva, Kantian philosophical concerns do not dominate, nor does Helmholtz's reliance on industrial mechanical steam-engine considerations or metaphors. Succeeding chapters (2–6) trace out the broader and more immediate contexts, the question of Kantian influence, and what Helmholtz believed he had accomplished.

Chapters 7–9 consider the reception of "The Conservation of Force." In chapter 9, "Helmholtz's Place in the Acceptance of the Conservation of Energy—by far the longest (pp. 235–428) and most important chapter—Caneva traces how Helmholtz's formulation in his 1847 essay, "The sum of the existing living and tensional forces is thus always constant" (p. 239), has been transformed into a principle of the conservation of energy. How does a paper first rejected by the physics community, yet hoping to find unifying elements in nature, lead finally to the conservation of energy (the first law of thermodynamics)? Even if one looks closely at the phrase, "tensional" forces, one notices that Helmholtz integrates force over distance, that is, force is thought of in terms of the velocity of a body rather than its acceleration. Force, for Helmholtz, is a measure of the quantity of motion rather than a cause of motion. Caneva's goal is to render intelligible Helmholtz's role and significance in the complicated transition to the final expression of the conservation law.

Near the end of the book, in the "Historiographical Excursus," Caneva critically assesses the work of earlier commentators who have written about Helmholtz and the conservation of energy. Thomas Kuhn (Caneva's advisor), Yehuda Elkana, Peter Harman, Norton Wise, all are subject to criticism. Caneva detects anachronistic tendencies, lack of sound textual evidence, and a desire to confirm a preconceived idea that lie at the root of most failed interpretations (p. 499).

The book is not an easy read. Amidst all the intricate detailed analysis and convoluted arguments what can an ASA member profitably learn? First, clarification of concepts can be a long and complicated process. Think just of the historical development of the concept of biological evolution. Secondly, ideas and concepts are shaped by a myriad of causes and influences. The art or skill lies in learning how to weigh the stunning array of causes. In the case of Helmholtz, historians have identified several causes: philosophical, physical, technological, physiological, and even cultural. How to accurately weigh each factor without becoming ahistorical, that is, misreading an author's intent by reading modern concepts into it and becoming anachronistic, has been Caneva's goal.

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TECHNOLOGY

DOI: https://doi.org/10.56315/PSCF3-24Coeckelbergh

ROBOT ETHICS by Mark Coeckelbergh. Cambridge, MA: MIT Press, 2022. 272 pages. Paperback; $16.95. ISBN: 9780262544092.

Mark Coeckelbergh is Professor of Philosophy of Media and Technology at the University of Vienna. This compact and easy-to-read book is his second on technology-related ethics, following his earlier *AI Ethics* (2020). In *Robot Ethics*, Coeckelbergh surveys situations where robots might be incorporated into daily life, and then explores ethical implications in each.

The book begins by introducing the reader to the field of robot ethics. As a first principle, "a robot cannot and should not be reduced to the material artifact 'robot' but instead must be connected to its use, and its social and cultural contexts" (p. 8). The author then identifies a major stumbling block, namely, that there is no clear definition of the term "robot." To make matters even more problematic this same definition limitation exists for the closely related concept of artificial intelligence (AI). In light of this lack of specificity, Coeckelbergh casts a large net around multiple technologies and machines that he considers related to robots or artificial intelligence.

Coeckelbergh first explores the effect of robots in the workplace and the resulting consequences for employee safety and job security. He then discusses robot companions and how these can be connected to a form of deception. Coeckelbergh provides the following example. Your elderly parent requires more care. You do not have the time to provide said care. You hire or purchase a robot that looks and behaves human-like to help. Do you tell your elderly parent that the companion is a robot? What if you do tell your parent that it is a robot, but your parent insists that it is alive—are there ethical issues with a robot providing care to someone who believes it is alive?

The author then explores the negative side of robot companionship, the ethics of robot abuse. Since robots are objects and the property of its owner, is it ethically permissible for people to be violent or abusive to their robots? Robot companionship leads to special forms of robotic companions, such as healthcare robots and personal assistant robots. When robots begin to replace healthcare workers or other experts, then additional problems arise, such as in quality of service, expertise,

moral agency, and responsibility when things go wrong. If your elderly parent is injured by the robot, who handles your complaint? How much freedom should a robot have to interact with the world on its own?

Continuing this theme, the author then explores additional robotic applications, such as self-driving cars, military drones, and other examples to help the reader grasp the breadth of the underlying ethical concerns when autonomous machines intersect with humans. "Robots function as mirrors that show and reflect us—that is, the human being in all its facets, and with all its problems and challenges, including ethical ones" (p. 195).

At this point, the text turns to more futuristic concerns. The book's final chapters consist of three essays. First, what ethical concerns should we consider when robots become androids/cyborgs and start to look and behave like us? People begin to use terminology like "eerie" and "creepy." Second, what happens when we replace soldiers with robots? This takes us into the ethics of automated war. Third, when should we start to be concerned about our own existence? This gives rise to the post-humanist view that idealizes a time when people and technology merge into something new, like cyborgs (merged biology and technology) or uploading our consciousness into a computer (no longer needing our body). Coeckelbergh contrasts the posthuman view with what he thinks is a more useful ethic—environmental ethics. "Instead of being mesmerized by transhumanist science fiction and posthumanist fantasies about cyborgs, we should focus on real and urgent problems with the natural environment and our planet, like climate change" (p. 204). He ends on a positive note with society using robots and artificial intelligence to work for the common good to solve global problems.

I found *Robot Ethics* to be enlightening, providing a clear presentation of many ethical concerns that arise with robots. Coeckelbergh not only introduces us to the implications but also to the leading thinkers. As practitioners and as a society, we do not put enough thought into the effects our creations have on ourselves. Consider, for example, the repercussions that ChatGPT has on school assessment strategies as well as on the writing, acting, and artistic guilds, as seen in recent strikes in these professions. I have already recommended the text to my coworkers working in artificial intelligence and robotics. The text is not a warning to stop advancement in robotics but instead a call to be more reflective. I think the text would also work well in a reading or study group. There are many ideas that could be fruitfully explored in a group.

I found that the text has two minor weaknesses. An inherent problem when casting a wide net is that different subjects can be treated as the same thing. In this case, the author risks mixing standard weaknesses in engineering or business practice, with robotics, resulting in a less clear understanding of robot ethics. For instance, is ChatGPT inherently harmful, or are the harms associated with ChatGPT a function of the way business introduced it to society? More specifically to robotics, when does smart software evolve into robots? For example, should your dishwasher be considered a robot? If it can be controlled remotely from your cell phone, does it qualify? What if we connect the dishwasher to the internet of things managed by a machine learning program that has figured out when you like to wash? At this point, some would still say that the dishwasher is not a robot, while others might say that it has become that. The internet of things has its own ethical and security problems not related to robotics; however, merging the two in a conversation by calling it all robotics lessens our understanding of robots.

I heard it once said that ethicists are great in analyzing and defining ethical concerns, but not as good in providing answers. This book raises many worthwhile questions, but if you are expecting to find solutions, then you will need to look elsewhere. The author wants us to think about these things so that we do not simply walk into the future without care. Coeckelbergh wants to identify the canaries in the coalmine, as it were. This text is an exploration and introduction to the key questions and people, not a compendium of ethical principles or solutions. I found this approach very useful but felt like I wanted a little more. A small dose of positivity would have been nice, with fewer post-apocalyptic scenarios. Although the text's purpose is more modest, it would have also benefited from some successful integration stories or theoretical integration strategies.

Even though I did not like how the book began its definition of robots (the author acknowledged the limitations of his position), I highly recommend this book as an introduction to the ethical questions and problematic situations associated with robots. Robots are in our future, whether we want them or not, so it is best to be thinking about these sorts of important concepts.

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DOI: https://doi.org/10.56315/PSCF3-24Kirsch

THE REVOLT AGAINST HUMANITY: Imagining a Future without Us by Adam Kirsch. New York: Columbia Global Reports, 2023. 104 pages. Paperback; $16.00. ISBN: 9781735913766.

In Eden, the serpent lied to Eve about the forbidden fruit. She was told that disobedience would allow her to "be like God." Already bearing God's image and likeness, Adam and Eve swallowed the serpent's lie, together with the forbidden fruit. Wanting to be more than mere creatures, wanting life on their terms, they sinned against their creator. Likewise, their son Cain

wants his way. God rejects Cain's sacrifice but does not reject Cain. Instead, God points to the root cause of Cain's sin and lays out the path to restoration. Cain's response? He kills his brother.

Throughout humanity's long rebellion against God, these two aspirations have persisted, together with their common result. The first, the desire to "be like God, knowing good and evil," goes beyond intellectual assent to intimacy with evil. And just as "Adam knew Eve his wife, and she conceived and bore Cain," intimacy with what God forbids gives birth to death. Then, unable to sin without consequences, the second aspiration is to destroy, to deface the created order and kill, to embrace death as an escape from God.

The Revolt against Humanity presents and analyzes the latest versions of these longstanding evil choices: transhumanism and Anthropocene antihumanism. Adam Kirsch well describes the heart of the transhumanist vision: the aspiration to transcend our creaturely status. Ray Kurzweil, Max More, and others seek release from all human suffering through science and technology. By human reason alone, they would obtain godlike powers, but not to please God, not to love God and neighbor. Instead, they would overturn God's decree, summarized in Ezekiel 18, that "the soul who sins shall die."

What do transhumanists think of God? Well, most have no use for the holy God of the Bible. Instead, they would create "spiritual machines," to use Kurzweil's term, or they would "create God" as members of the "Terasem transreligion," founded by Martine (formerly Martin) Rothblatt, whose disdain for traditional accounts of humanity and human limitations is expressed in her book, *From Transgender to Transhuman: A Manifesto on the Freedom of Form*. With such a god, transhumanists believe that even the heat death of the universe is not an obstacle. Science will surely reveal ways to alter the very laws of the universe, won't it?

Ready to join the transhumanist movement? Few believers would. Instead, they would agree with Christina Bieber Lake's analysis of transhumanism, including the claims of so-called Christian Transhumanism. Her plenary address at ASA's 2021 virtual annual meeting—with responses from John Wood, William Hurlbut, and Brent Waters—shows how its eschatology fails. Technoscientific hyper-postmillennialism presumes that salvation is achievable by human effort. It has no use for Christ's sacrifice for our sins, destroying fundamental Christian doctrines, such as hope in God and divine grace.

Kirsch is no transhumanist. Instead, he sees transhumanism as an optimist's escape from the problems of this world. Yes, those problems may, at least in part, be traced back to science and technology run amok: the depletion of natural resources, pollution and climate change, species extinction, and the broader degradation of nature. These ills threaten what matters most to transhumanists: the mind, with its ever-expanding knowledge, driven by science.

What is the transhumanist solution? Acknowledging that science and technology can be problematic, they still believe more will do the trick, especially as they produce advances in computers and information technology. After all, though minds have emerged from our brains, they see no reason why they must be biological; artificial intelligence will serve just as well, nay, even better. After the singularity, when computer intelligence exceeds that of human beings, biological life will be obsolete. In its place, life will continue in computational systems, human minds being uploaded, either from the living or the dead, their brains preserved through cryonics.

Is transhumanism too optimistic? Perhaps, but Kirsch is concerned about a darker alternative: Anthropocene antihumanism. It sees humanity as an unfortunate and unnatural infestation of Earth. Rather than enhancements to human life, it believes eliminating humanity is the answer. Nature, interpreted as inherently good and robust, would recover. Its wonders would thrive, even if no humans were around to observe it. Indeed, antihumanists seek to eliminate human perspectives of what it means to thrive; anthropocentric definitions got us into this mess, so it is critical to move past them.

Kirsch concludes with a quick survey of the spiritual dimensions, broadly defined, of the rebellion by anti- and transhumanists. He mentions the apocalyptic elements of Christianity and other religious traditions, the hopelessness of H.G. Wells as he anticipated the extinction of human life, Nietzsche's nihilism, Foucault's concerns about "biopolitics," and the general loss of meaning that has accompanied the rise of godless modern experimental science. With this background, Kirsch looks to the future, but not with confidence. "We can only hope that we don't have the bad luck to be born into the last generation, the one that sees humanity as we have known it disappear."

Kirsch does not offer a Christian response to the revolt he describes; his spiritual commitments are not clear. Still, *The Revolt against Humanity* offers a provocative look at where progress has taken us, one Christians should consider. Advances in science and technology offer new ways to fulfill the first and second great commandments, respectively. However, apart from faith in God as their source, they cannot address the despair of a frustrated world.

I recommend Kirsch's book to Christians that view science and technology as inherently good and beneficial. Its few pages are thought-provoking, giving believers many opportunities to reflect and check their Bibles

for God's answer to human sin: the gospel of Jesus Christ. I also recommend a "Thinking in Public" interview by Albert Mohler: "The New Religion of Artificial Intelligence and Its Threat to Human Dignity—A Conversation with Adam Kirsch," recorded April 12, 2023. It is available online at https://albertmohler.com/2023/04/12/adam-kirsch.

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DOI: https://doi.org/10.56315/PSCF3-24Conis

HOW TO SELL A POISON: The Rise, Fall, and Toxic Return of DDT by Elena Conis. New York: Bold Type Books, 2022. 388 pages. Hardcover; $30.00. ISBN: 9781645036746.

Suppose you were creating a new college course on the interaction between chemistry and public policy (this happens to be true for this reviewer). Elena Conis's *How to Sell a Poison* would be a nearly perfect book to read as you set your syllabus. The author presents a thorough historical context with sufficient, but still accessible, chemical detail. The book does not gloss over complexities in the interactions between politicians, industry, and environmental advocates, but it also manages to compel the reader with winsome writing and a peppering of human-interest narratives. And while the book inexplicably does not have a complete set of references, it is an excellent resource for a reader who wants to develop an understanding of the history of DDT and why there are some who are calling for its continued and increased usage to combat malaria.

The structure of *How to Sell a Poison* is mostly chronological, including some information of the early uses of DDT by Swiss potato farmers, the promotion of its use by the United States military in World War II, an explosion of usage in the 1950s and 1960s as both an agricultural and a consumer product, the mounting evidence of DDT's negative environmental impact, advocacy and legislative action in the 1960s and 1970s, and the ongoing debate regarding continued or increased use of DDT to keep malaria in check. This historical structure is written in a compelling way, with most chapters headed by an account of one of the primary actors in an ongoing drama created by benefits and dangers of the pesticide's use. Going far beyond the well-known story of Rachel Carson and her seminal *Silent Spring* (1962), we meet chemists, soldiers, physicians, patients, agricultural workers, government scientists, politicians, supreme court justices, concerned citizens turned plaintiffs, journalists, environmentalists, industry executives, and lobbyists. By the end of the book, the reader will feel that they have been inside the mind of all of the important actors in the multiact drama that was and is DDT.

Conis includes sufficient chemical detail even while she keeps the book accessible to a general audience. The reader comes to understand the molecular structure of DDT, how it is synthesized, why it is persistent in the environment, how it kills insects, and why it increasingly bioaccumulates going up the food chain. These details are not presented in a tacked-on chapter, but in the historical context as needed to understand the DDT narrative.

One of the greatest strengths of the book is that it does not gloss over the complexities or nuances in the DDT story. This is important to gain an authentic understanding of how DDT became ubiquitous and how it fell out of favor. Yes, the story of Rachel Carson's *Silent Spring* is included, but so is the congressional testimony that followed and the ultimate lobbying of tobacco interests encouraging a DDT ban as part of a scapegoat campaign to cover up their own cancer problems. The reader also comes to understand the crucial role that the DDT controversy played in the establishment of the U.S. Environmental Protection Agency and the Environmental Defense Fund. A true historian, Conis gives you a compelling behind-the-scenes understanding of who held influence regarding DDT and how their influence was wielded.

Nearly every chapter begins with a narrative regarding one of the main actors in the DDT story. This feature makes the book easy to read and compelling. You see the promise and the problems of DDT from the point of view of a land developer, a chemist, a government scientist, a physician, a health department officer, a member of congress, an organic gardener caught in the overspray, an attorney, an immigrant agricultural worker, a bird enthusiast, the surgeon general, a university professor, a journalist, the EPA director, the mayor of a small town, and several others. As their stories are told, the reader is led to an understanding of the many facets of DDT in an organic and interesting way. Each story is backed up by references, as appropriate, to letters, articles, books, or government documents. But even as the stories are historically documented, they read more like a story than a history textbook.

The one frustrating aspect of the book for this reviewer is the lack of a comprehensive bibliography. The author refers to many documents in the chapters, but then does not include a complete reference to all of them so that the reader can find those documents. This will not bother most readers, but as an instructor designing a class, this reader is seeking primary documents (public laws, scientific journal articles) to give to my students to directly illustrate the connections between chemistry and public policy.

Overall, this is an excellent book for anyone who is seeking a thorough and nuanced understanding of DDT.

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Theology

DOI: https://doi.org/10.56315/PSCF3-24Finlay

GOD'S GIFT OF SCIENCE: Theological Presuppositions Underlying Exploration of the Natural World by Graeme Finlay. Eugene, OR: Wipf & Stock, 2022. 156 pages. Paperback; $22.00. ISBN: 9781666748062.

Graeme Finlay has had a long career as a cancer researcher and teacher of scientific pathology at the University of Auckland, New Zealand.

Many different books have approached the very critical topic of science and faith over the last twenty years. Polling research has shown that one of the principal reasons that young people leave churches, and their faith, is due to a perceived conflict between these two. It is a topic that should concern us all, and it is very important that it be approached from a variety of perspectives.

The particular approach of Finlay is not predominantly as an academic expert in the history of science, nor as one who is principally interested in winning critical debate points in the science and faith dialogue, but as a scientist who has lived this out and deeply studied it at a personal level. Finlay links his understanding of science, including its history and philosophy, to the very nature and personality of God. One can sense the spiritual depths of his personal faith in his writings. The beauty of this book is that it brings a deep understanding of science and connects its deep mysteries with the nature and character of God. I have read and studied many books on the topic of science and faith, but have yet to see one presented in such an evidently personal way.

One could look at the book with a strictly academic eye and focus on missing arguments or insufficient detail in some of the reflections, but that would be to miss the point. At some level, we need to step back from the mountains of information and make the science/faith discussion real at the personal level, not just in our minds, but also in our hearts and in our own faith walk. That is the real value of this book.

Finlay's book is divided into six chapters. The first chapter, "Science is Not Self-Sufficient," examines the nature and limits of science. He quotes Nietzsche,

> Strictly speaking, there is no such thing as science "without any presuppositions" … a philosophy, a "faith" must always be there first, so that science can acquire from it a direction, a meaning, a limit, a method, a right to exist … It is still a metaphysical faith that underlies our faith in science. (p. 11)

Finlay then himself states, "If we are to live truthfully, we should seek to discover the worldview that sustains and informs the scientific enterprise" (p. 11). This turns out to be the core truth that drives the entire book.

The second chapter, "One Source of Creation," relates science to the nature of God. God is almighty, wise, ordered, faithful, free, creative, holy, and redeeming. He speaks to us and is to be worshipped. Although each of these is treated as a small vignette, the sum total of the chapter makes the very significant point that science has emanated from, and is an integral part of, the very quality and character of God. The science that we observe and study is meant to bring us into relationship with him. This is the principal and most powerful contribution of this book.

Chapter three, "Science and the Nature of Humanity," outlines some of the social progress that has been brought about by people of faith. He relates this to humanity being made in the image of God (*imago Dei*) and the biblical nature of work for the person of faith. He examines the elimination of slavery, as well as contributions to medicine and education/literacy. This part mostly reads as a historical examination of the influence of the Christian faith on social progress. I would have been very interested to see how he views the role of faith in more-contemporary topics of social discourse.

Chapter four, "The Death of Science," outlines how the author views the future of scientific endeavor in the absence of a strong spiritual faith foundation. He quotes Thorson, "If the age of science comes to an end, it will really be because people collectively have not cherished and sustained that practicing faith in the reality and authority of truth" (p. 64). Finlay is convinced of this and understands the "growing threats to science in deeply theological terms" (p. 64). He discusses the influence of powerful special interest groups, such as the tobacco industry's connection to cancer and the fossil fuel industry to climate change, as examples where strong commercial interests can undermine science. He is concerned that the moral underpinnings of science are weakening and that we need "to return to God on whose truth science is most securely founded" (p. 68).

Chapter five, "Discovery in Theology and Science: Surprise," is an attempt to relate scientific discovery to elements of surprise as seen in some passages in scripture. Although one can readily agree with the premise that the surprise of scientific discovery is related to the mystery of God, this part felt labored and did not really work in my opinion. The most interesting part of the chapter was the surprise/discovery he experienced in his own research on cancer drug research and how that relates to God.

Chapter six, "Science and Theology in Sustainability and Justice," is almost entirely an examination of the severe consequences and implications of climate change. This final chapter has the objective of bringing everything up to the modern day and underlines our responsibility to the planet as people of faith. Although this is well referenced and is interesting, it is surprising

that the author did not spend more time on his own scientific discipline—it would have been very interesting to have heard his insights about the future of cancer research, its impact on humanity, and the role of faith.

Finlay's book principally treats the question of why science needs faith, and that is done quite well. One part that was missing is the misunderstanding of science within the church itself, and the dangers that arise in faith communities when faith is dissociated from science. I would have loved to have heard some of his personal thoughts on this.

The book is highly footnoted, and the sources are quoted heavily. This significantly adds to the book, especially in the areas where Finlay is not an academic expert. Many of the references are not particularly recent, but I have come away with a list of books I want to read. Overall, this is an excellent book that will stimulate thinking in the area of science and faith and touch the reader's heart at the same time. I haven't marked up a book to this extent for a long time.

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DOI: https://doi.org/10.56315/PSCF3-24Silva

PROVIDENCE AND SCIENCE IN A WORLD OF CONTINGENCY: Thomas Aquinas' Metaphysics of Divine Action by Ignacio Silva. Abingdon, UK: Routledge, 2022. 170 pages. Paperback; $52.95. ISBN: 9781032002781.

Ignacio Silva (DPhil, Oxford) is an Argentinian theologian who specializes in the dialogue between science and theology. This book is a proposal for fellow scholars and others to reconsider the contribution of Thomas Aquinas's metaphysics as a means of resolving the question of divine action in the light of science. Although Aquinas is the thirteenth century's most famous friar and Catholicism's most renowned theological authority alongside Augustine, he is often viewed today as contributing few insights as regards an allegedly "modern" argument.

Silva argues that Aquinas supplies a way of getting beyond two mistaken views held by people today: (1) on the one hand, that God needs the natural world to be fundamentally open to outside influence; and (2) on the other hand, that God causes things to exist in a way that is similar to the way other natural causes cause things to occur.

Silva's goal is to get beyond the current situation in which "many today find it necessary to search for a lack of natural causation so as to find a space for God to act" (p. 139). According to this way of thinking, God's actions are only localized occasions, hence the school of thought known as occasionalism. Conversely, another tendency is for believers to argue that God's powers are self-restricted in order to account for natural powers. The latter point of view is sometimes stipulated in terms of the biblical concept of *kenosis* ("Christ … emptied himself," Phil. 2:7).

Silva's main point concerns a correct notion of causation such that we not restrict divine providence to an inadequate understanding of causation: "the idea of requiring insufficient causation for God to act depends on a deterministic notion of causation that, ultimately, renders God to act as a cause among causes" (p. 49). Silva holds that much causation is subject to chance contingencies. Thus, Silva's strategy is to think of causation in the context of potency and act. This allows a fresh and fuller way of dealing with the four parameters of divine providence: God's omnipotence, God's involvement with nature, nature's autonomy, and the success of science. The scope of the inquiry is enormous and Silva's handling of the thought of Thomas Aquinas is, unsurprisingly, difficult, yet hugely beneficial.

On the one hand, readers must be prepared for a dense tutorial in accounts of causality, powers, natures, and other metaphysical categories in order to appreciate the argument of this book. On the other hand, the argument over the relationship between God as the creating cause of the world and the secondary causes that act to create other effects in the world, is startlingly simple. It is best understood as a form of instrumental causality according to Silva. It is analogized (as so much of Aquinas's theology is) as follows:

> The knife is moved by the man to cut, and to do it in such a manner. Without the man's power, the knife could not cut, but without the edge of the knife, the man could not cut in this manner … the effect is both produced completely by God and by the natural agent … (p. 129)

Thus, without God, nature would not have the necessary powers to cause the effects it possesses. Without those natural efficient causes, God's power could not be effective. There is no split between divine and natural causation in any given effect; both are completely causal of any given effect. It is analogically helpful, although Silva does not discuss this idea, to invoke here the Incarnation of Jesus Christ: he is both fully divine and fully human, not half of each.

God acts in three ways: through creation itself, through natural (secondary) causes, and through three types of miracles—although, sadly, the latter do not receive much attention in this book. But the threefold action of God is intended to counter, on the one hand, the view that causality is always deterministic and, on the other hand, that God's action in the universe endangers nature's autonomy.

For some readers, the most difficult aspect of the argument will be the presentation of natural entities' powers of operation in terms of the four Aristotelian causes. The key is to think of causation in context. From Aristotle, change is a key feature of contingency. Change is organized into potency and act, essence and accident. These categories explain how causation results in real life. Moreover, theologically speaking, for Aquinas, "affirming that natural things do not operate, and that it is only God who does, diminishes the divine power" (p. 98, quoting the *Summa contra Gentiles III*, c 69). This is the counterintuitive power of the Thomist position. It opposes the view that attributes all natural causes to God's intervention. Holding that view would mean, in the end, that God actually does not create anything apart from God. But for God to create a world means to distinguish something apart from God and to allow contingency to exist in the spatio-temporal realm. The key point about the distinction between the eternal and the temporal realms is to ask why God creates in this way. Silva casually mentions that "God acts through natural causes because of the immensity of his goodness …" (p. 101). So, it is not a matter of metaphysical necessity that lies behind the Thomist view, it is God's goodness that is the key.

The position that created natural things are themselves creative needs to be exactingly well laid out; otherwise this position will be perceived as a way of extracting God from the world altogether. Here, Silva stipulates that "God's causality penetrates most intimately the causality of created natural things," while God upholds the creation "in its being" (p. 99). This is uncontroversial, but the provision for miracles is bound to raise questions about why God would act in this way. What Silva could have used are some examples of why some philosophers dissent from Aquinas on miracles, with responses to those dissents.

Silva covers an enormous amount of reflection on the notion of causality, including some original and highly potent insights. He claims that final causality is the "cause of the efficient cause in terms of its causality" (p. 71). This relationship, as well as the relationship between the material and formal cause, as first demarcated by Aristotle, is laid out in dense, logical prose. The book ends with some subtle yet significant comments on the differences between Aquinas's views and those of twentieth-century thinkers such as Austin Farrer, who referred to Aquinas in proposing a double agency account of creation while resorting to fideism. Farrer refused to suggest any explanation for the causal joint between God's creation and the world's operation. This analysis is original and should have been given more prominence. There is, indeed, a great deal of difference between fulsome and evasive double agency accounts of created causality; however, Silva ignores almost completely the medieval development of the theorem of the "supernatural," which came about because of the theoretical stance taken by Philip the Chancellor (d. 1236). This lapse is not critical, but it does exemplify the lack of a historical dimension to the book's argument.

Another quandary concerns the book's form of exposition. It is largely descriptive. While its argument details Aquinas's metaphysics of causal relations and the universe's created dependency on God, it lacks a dialectical edge. Although the argument is sufficiently sound, it is in need of an engagement with the open theists and others who would contest the account of divine power that Thomas Aquinas developed. There are quite a few references to other contemporary positions on providence and causality, especially in the final chapter. The names of William Carroll, Robert Russell, and Michael Dodds appear, but there could have been a more probing engagement of these contemporary voices. The Copenhagen interpretation of quantum physics is treated in the light of the proposed view of moderate determinism in contrast to the non-interventionist, objective (NIODA) view of divine action in Robert Russell. Here, I'm unsure whether NIODA has been properly interpreted. Although I think Silva's position is correct, is Russell's understanding of God's causality really reducible to natural causality as Silva contends? The textual citations for this allegation are not convincing.

Finally, despite what I take to be a largely satisfying account of God's creative action, the issue of evil and theodicy are not dealt with in this book. Aquinas makes contingency (and accidents in general) central for the notion of creation. Silva sees contingency as a sign of the perfection of divine providence, but this contradiction (between created contingency and the fact of natural "evil") is a real difficulty for God's involvement with evil or deficient effects in creation. Regardless, altogether this is a provocative, dense volume that could easily have been double the length if key problems had received more comprehensive treatment.

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