

Book Reviews

200 schools offering a PhD in the field, it would be reasonable to ask whether these programs are truly representative of the range of student experiences. The top 60 universities in a given field may be a model that is emulated by that discipline as a whole and is therefore an adequate sample, but it would have been interesting to see Scheitle discuss this dynamic further. There are also a number of potential policy implications from these findings that could have been covered in more detail.

The Faithful Scientist provides a strong background on the relationship between religion and scientific training revealing the potential challenges that religious graduate students face. Scheitle's research will appeal to a number of different audiences including sociologists, historians of science, and theologians. It would be a benefit to seminary classes on science and religion. Further, the richness of the qualitative data makes the book very readable for a general audience interested in learning more about the relationship between religion and science.

Notes

¹Elaine H. Ecklund et al., *Secularity and Science: What Scientists Around the World Really Think About Religion* (Oxford University Press, 2019); Elaine Howard Ecklund and Christopher P. Scheitle, *Religion vs. Science: What Religious People Really Think* (Oxford University Press, 2018).

²J. Shulman, "Survey of Ph.D. Programs in Chemistry," American Chemical Society, accessed April 10, 2024, <https://www.acs.org/education/students/graduate/survey-of-phd-programs-in-chemistry.html>.

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SCIENCE AND FAITH IN HARMONY: Contemplations on a Distilled Doxology by Sy Garte. Kregel Publications, 2024. 256 pages, foreword by Sean McDowell. Paperback; \$21.99. ISBN: 9780825448157.

The author of this book of meditations, Sy Garte, is a now-retired distinguished biochemist who held tenured university positions at NYU, Pittsburgh, and Rutgers. He also served in administrative roles at the NIH and the Uniformed Services University of the Health Sciences. As an author of over 200 scientific papers, he is a first-rate scientist who brings nearly unparalleled scientific expertise to matters of concern for Christians who have an interest in scientific topics. Of particular note, Garte became a Christian quite late in his scientific career (in his 60s), finally rejecting the atheism he had espoused most of his life. (His conversion experience is described in his book *The Works of His Hands*, which has a foreword by Alister McGrath.) This is therefore quite a unique devotional book, for it reflects a full life of secular

scientific experience and practical wisdom combined with the zeal of an adult convert. It is clear that Garte has had an inquiring mind and broad interests throughout his entire life, which help keep the book fresh and full of surprises. He grew up in Brooklyn where his mother was a piano teacher and his father a mandolin-playing chemist. Immersed in music, he attended the prestigious New York High School of Music and Art, but later discovered his greater talents lay in science.

There are 44 meditations (or "contemplations" as the sub-title refers to them), each about five pages long. In these, Garte expounds on an interesting scientific fact or idea and links it to some aspect of Christian life, doctrine, or theology. As in his introduction:

The forty-four chapters are vignettes in various styles. Some include personal stories of my experiences as a scientist, first as an atheist and then as a Christian. And some discuss aspects of science that may be new to you, and even inspiring, in how they relate our faith to God. (p. 14)

There are some connections between the meditations, but generally they may be read in any order, or read only periodically without need of remembering exactly what came before.

One aspect of this book I found particularly helpful are the several resources Garte provides at the end of each chapter for further exploration of the topic of the meditation—usually a scientific topic but sometimes theological or philosophical. There are generally one or two references from two or three of the following categories: books, articles, blogs, and videos. The web-based references are conveniently linked to the author's website (sygarte.com). The videos in particular are excellent learning and teaching resources.

This book is suitable for many audiences, but I would say two categories would be especially well served: non-Christian scientists and engineers, and Christians who have an interest in science but have not done much reading in science and faith. Garte's primary goal as stated in the introduction is to demonstrate the harmony of science and Christianity, thus addressing the perceived conflict between the two, which he believes continues to be a stumbling block for many non-Christians. For a Christian reader, however, Garte's expert treatment of a wide variety of scientific topics and their ties to the Christian life is truly devotional and worshipful. "Distilled doxology" is the phrase Garte uses to describe his project, and indeed he is able to repeatedly take a different scientific topic, strip it down to its basics so that any educated lay audience can understand and, with his fertile imagination and life experiences, tie it to Christianity in original ways, producing a sense of wonder and appreciation for God's providence and grace.

Longtime readers in science and theology will be familiar with most of the topics and themes presented by Garte, but I found that his original approach and expertise were quite interesting and offered some fresh angles. For example, in one meditation he describes gene regulation networks and makes an analogy to Christian social networks and the body of Christ. In another meditation, Garte connects a discussion of the peer-review process in science, including ethical guidelines, with the ethics of living in Christian community and the judgments and corrections that are sometimes necessary there.

Some might describe the final wrap-up sentences of each meditation as too saccharine, but I found that these concluding sentences testify to the pure joy and thrill that Garte feels about his relatively new-found Christian faith—a sentiment that is bursting throughout this entire book. As I read through the meditations, I often found myself reflecting not only on the grandeur of creation and the goodness of God, but also on how amazing it is that the power of the Gospel could convert and call to Christian service an atheist scientist as prominent as Sy Garte.

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TECHNOLOGY

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THE SINGULARITY IS NEARER: When We Merge with AI by Ray Kurzweil. Viking, 2024. 419 pages. Hardcover; \$20.21. ISBN: 9780399562761.

In summer 2014, on my advisor's advice, I began to explore transhumanism as a dissertation topic. I soon encountered Ray Kurzweil's 2005 book, *The Singularity Is Near*, and its forecast that around 2045 computer systems would attain superhuman intelligence. This development, according to Kurzweil, would lead to an age of rapid and unpredictable progress known as the "Singularity." Fundamental changes in the human condition would follow.

But there was a problem: whenever I mentioned Kurzweil, my frustrated advisor would respond, "Ugh! Why should we pay any attention to Ray Kurzweil? How could *he* ever know what will happen in 2045?" (I took such questions seriously, but maybe my advisor just wanted me to think!) My best answer was, "He may be a kook, but many accept his claims. Kurzweil's ideas are affecting society now, so they are worthy of study."

Today, with ChatGPT and other large language model (LLM) systems in everyday use, and more computational tools on the horizon, artificial intelligence (AI) has become a major factor in society. Its benefits are changing how people and organizations operate, how ideas

are generated and refined, the way we identify and solve problems, and even how we go to the grocery store. Conversely, AI is a worry to many people, such as educators concerned about its impact on student learning; Noam Chomsky called ChatGPT "plagiarism software." In this context, Kurzweil's new book is a timely—and important—update on his ideas from nineteen years ago.

Kurzweil's introduction and first chapter reiterate his premise that information is the very essence of reality. He sees cosmological history as a series of information-driven epochs—from epoch one, "the birth of the laws of physics," soon after the Big Bang, to epoch six, "where our intelligence spreads throughout the universe" (pp. 7–8). Today, Kurzweil argues, we are entering epoch five, driven by dramatic increases in the cost-performance of computers. It will be, according to the book's subtitle, *When We Merge with AI*.

In chapter two, "Reinventing Intelligence," Kurzweil presents a brief history of AI before drawing comparisons between digital computers and the human brain. His focus is the development and future of brain-computer interfaces. Today's Neuralink trials will, according to Kurzweil, lead to a tomorrow when neocortex functions will occur in hybrid systems, biological brains working seamlessly with artificial computation machinery.

Chapters three through six analyze the potential for AI to exert an influence on important areas of human existence, imagining how they can be accommodated: consciousness and personal identity, quality of life, employment and meaning, and mental health and physical well-being. Kurzweil addressed these things in *The Singularity Is Near* and other books, but in *Nearer* he goes into greater depth, and in a more straightforward and factual manner. If his previous work was a Singularity sales pitch, his 2024 text is framed as an update or progress report.

In chapter seven, Kurzweil addresses forms of "peril" that will intensify with progress toward the Singularity. He recognizes that AI can be weaponized by terrorists and hostile states, but he does not directly address the possibility that sentient computers could become hostile toward human civilization. (For that possibility, see Nick Bostrom's 2014 book, *Superintelligence: Paths, Dangers, Strategies*.) Ever an optimist, Kurzweil believes people—individually, corporately, and working with AI—can identify and overcome such threats.

Kurzweil's final chapter is a six-page "Dialogue with Cassandra," an exchange between Ray and an unidentified being, perhaps an AI. Their discussion touches many top-level concerns that people express about futuristic technology. The dialogue effectively summarizes Kurzweil's views of the past and hopes for the future.