Christian's book provides a much-needed dose of sanity and perspective amidst the hype.

Reviewed by Emily Wenger, graduate student in the Department of Computer Science, University of Chicago, Chicago, IL 60637.

THE MYTH OF ARTIFICIAL INTELLIGENCE: Why Computers Can't Think the Way We Do by Erik J. Larson. Cambridge, MA: Belknap Press, 2021. 312 pages. Hardcover; $29.95. ISBN: 9780674983519.

The Myth of Artificial Intelligence (AI) offers a technical and philosophical introduction to AI with an emphasis on AI's limitations. Larson, a computer scientist and tech entrepreneur, keeps his central claim modest: true general AI is neither inevitable nor imminent, and if it is possible, it will require fundamentally new approaches. It is an easy read, combining references to fiction, history, and science. It lays out a bird's eye view of the origins and ideas behind current AI methods, focusing on general AI, a category of AI that would need to learn and engage with a wide variety of problems.

Separated into three parts, *The Myth of AI* begins with the history and algorithmic logic of AI, largely through the lens of the Turing test. Larson argues that we are not near the singularity (superintelligent computers able to create ever more intelligent machines) and that, in fact, the basic premise of the singularity is flawed.

The second part discusses inference. AI falls short of human intelligence because it can work with hard rules, but cannot make the guesses necessary to formulate new ones or handle uncertain rules. In attempts at the Turing test, AI can throw data at the problem but will always lack understanding. Achieving the understanding necessary for true intelligence will require an approach fundamentally different from recent advances made in AI, which are only effective for narrow AI (a category of AI for solving specialized problems) and not general AI.

The final, and relatively brief, part examines AI in science. According to Larson's assessment, new scientific research relies heavily on newly available computation power and big data in order to use narrow AI to its full extent. Larson claims that this approach will hinder development of new theories. He also claims that this leads to treating scientists as if they were computers as well, which causes overvaluing the system of science above people. He criticizes "swarm science," which he describes as a large group of scientists approaching one problem with a variety of projects, emphasizing this collaboration over the individuals. Instead, he claims, we need our culture to continue to emphasize individual discovery and intelligence, as it is the key to innovation.

Through the discussions of the history, philosophy, and logic of AI in the first two parts of the book, Larson disentangles the hype of AI from what is actually possible with current technology. Even as he sheds light on the gap between the singularity prediction and what machine learning is truly capable of, he emphasizes the significance of the myth. "The myth is an emotional lighthouse by which we navigate the AI topic" (p. 76). The stories we tell through predictions and science fiction define AI in the public eye and set the goals for AI research.

Our underlying philosophy matters as much as the current state of AI research, when we consider the social role of AI and what we predict for our future. In the development of AI, we must define intelligence and explore what it means to be human. While this is not a book with overtly religious claims, it does acknowledge the spiritual claims inherent in discussions of personhood. It also frames technoscience as replacing philosophy and religion and as the oversimplified understanding of humanity and the precursor to expectations of the singularity.

Beyond the stated goal of disenchanting the reader of the inevitability of AI, the book highlights the significance of stories to both society and science and emphasizes the importance of understanding for both humans and AI. We need to understand not only the technical aspects of the technology we build but also the philosophy that defines our goals.

While I found the first two sections of the book to be an engaging and accurate discussion of the tension between the science and hopes of AI, I had concerns about the warnings of "swarm science" in the third. Larson is placing a strong emphasis on individual genius in science; however, science has never been a truly independent endeavor. Many times in history, from evolution to DNA, multiple teams of scientists independently made the same discoveries at nearly the same time, based on previously published work. Though these discoveries were not inevitable, they

built upon other research and relied on collaboration at least as much as individual genius. Larson focuses on a particular neuroscience project and makes some valid criticisms, but then he generalizes his observations to all of science in ways that I do not believe to be accurate. His argument that all of science is moving away from theory toward shallow observations is not as obvious as he claims, nor is it supported by the evidence offered in the book.

As a counterexample, the research that resulted in the COVID-19 vaccine could be considered "swarm science" and was effective. Large amounts of funding were very suddenly directed to many scientists for one goal: understand and prevent the coronavirus. Due to both new funding and established research, we developed and approved multiple vaccines in one year. I was not convinced of several of Larson's generalizations in this third section. Tension between celebrating collaboration and individual genius will persist. However, it appears that there is more collaboration in science today. This is likely due to a variety of reasons, including a scientific community connected by the internet and more contributors receiving appropriate credit for their work.

The Myth of AI is a broad view of AI that should prove valuable and comprehensible to readers with or without a technical background. The first two sections offer a clear explanation and history of AI, and the third offers food for thought on how the process of science has been shaped by advances in AI and computer technology. The first sections would be a good introduction to someone not familiar with AI or looking to think about the philosophy of AI and I would recommend the book for these sections.

While the book avoids religious claims, the philosophical discussions of what it means to "understand" and the level of trust we place in AI are essential questions for Christians working in technology-related disciplines. *The Myth of AI* presents a jumping-off point for much deeper reflection about using AI responsibly and what it means to be human.

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

Theology

SCIENCE IN THEOLOGY: Encounters between Science and the Christian Tradition by Neil Messer. New York: T&T Clark, 2020. xii + 191 pages. Paperback; $22.95. ISBN: 9780567689818.

When reading this title, I confess that I wondered if we really need another book on science and theology, or another typology of the relationship between the two, or another critique of typologies. On finishing the volume, however, I believe that it does indeed make a helpful contribution to the expanding literature on the subject.

Neil Messer, professor of theology at the University of Winchester, UK, has a PhD in molecular biology and an MA in Christian ethics. *Science in Theology* is a well-researched, accessible treatment of the relationship between the two. The preposition in Messer's title is intentional, suggesting that we focus on what part science plays *in* our Christian conceptions about ourselves and our world in relation to God, rather than adopting a modern view of science *and* theology as separate categories. This hints at his welcome prioritizing of theology—faith seeking understanding, not faith looking for science to justify faith's veracity. Like many, he considers both the voice of the Christian tradition (incorporating the familiar quadrilateral of scripture, tradition, reason, and experience) and the scientific voice (including only the last two aspects of the quadrilateral). Messer argues that previous typologies are too broad and have difficulty accommodating the diversity and complexity of current literature in the field.

He proposes a five-fold typology, which I find appealing in its simplicity and applicability:

1. Only the scientific voice contributes; contributions from Christianity are denied or dismissed.
2. Both voices contribute, but the scientific one is dominant; Christian claims must be adjusted to fit the scientific perspective.
3. Both voices contribute equally.
4. Both voices contribute, but the Christian one dominates in shaping the encounter.
5. Only the voice of the Christian tradition contributes; scientific claims are denied or dismissed.