theological responses (written by a theologian) and concludes with an analysis of chance in relationship to Darwinian evolution (by a philosopher of science).

The cumulative effect of these chapters is the realization that with respect to the theological issues at stake, historical attentiveness and transdisciplinary engagement will clarify misunderstandings and situate the concerns in contexts that invite reconsideration of contested variables otherwise often locked into parochial frames. For instance, even across the evolutionary sciences, there is no such thing as absolute chance; whether in terms of contingency, randomness, or probability, chance always unfolds in connection with other determined aspects or variables so that we do not need to turn to theology to elucidate such relationships.

The chapters in the second part will be most relevant to those with interest in biological evolution but, commensurately, will be most challenging for theologians or others without training in this field. The fundamental questions regarding genetic mutations are explored in relationship to natural selection and evolutionary drift (in which the frequency of gene variations shifts over generations) and in regard to parallel evolution (thus comparing and contrasting lineages that diverged in the past from a common ancestor), noting variously that mutation is random and adaptation is probabilistic. Helpful here is the clarification of "strong" versus "weak" randomness, with the former involving stochastic (causal) processes constituted by indiscriminate and hence probabilistically equivalent processes of elemental replacements that are invariant over time (so that mutations are no more or less likely to occur at any site of that process), and with the latter involving same processes that are either discriminate (hence probabilistically un-equivalent) or variant over time, or both. The discussions in this part of the book invite theologians to be clear about how biologists are understanding and using notions of chance in their work.

The four chapters at the end of the book each take as their point of departure the work of paleontologist Stephen Jay Gould, not least his renowned theory that if we were to replay the tape of evolution all over again, we would observe very different creatures than we have now. Two of the essays delve into the details of contingencies related to the Cambrian era (the period that is most pertinent to Gould's thesis), tracking the progression of research in the last three decades or engaging the counter argument of Simon Conway Morris and others, that niche environmental constraints suggest that such replay would inevitably lead to creatures much like we have now (due to selection factors). The other two chapters focus on the famous *E. coli* Long-Term Evolution Experiment, which traced the evolutionary histories of twelve initially identical populations of the bacteria, in varying environments, over (by now) sixty thousand generations in order to explore the implications of such for comprehending evolutionary contingency. Consequently, siding with or against Gould is not only complicated but begs considerations in multiple directions, given the advance of knowledge at this stage.

In a prior generation, chance explanations related to the unpredictability of development or the obscurity of causal histories, thus having a more epistemological character indicative of a lack of scientific knowledge in certain areas. In the current climate, given the consensus that quantum randomness pertains at the ontological level, views of chance have shifted toward being naturally intrinsic to the way life processes are. Yet even here, historicity is crucial, particularly—as many of the essays highlight—that historicity of the pathways related to evolutionary speciation. There is no getting away from the stochastic contingencies related to gene flow and mutation but there also is no denying that such unfold amidst the selective and adaptive pressures exerted by nature and the environment. Theologians open to thinking further about the nature of chance and randomness in relationship to divine providence will benefit from, and be updated by, this wide-ranging volume.

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Science and Religion

SCIENCE AND CHRISTIANITY: Foundations and Frameworks for Moving Forward in Faith by Tim Reddish. Eugene, OR: Wipf and Stock, 2016. 190 pages, bibliography, index. Paperback; $25.00. ISBN: 9781498296045.

"What, another book on science and Christianity?" Such were indeed the initial thoughts of this reviewer. In fact, these are the introductory words of the author himself. Tim Reddish goes on to explain part of the motivation behind the book: the backdrop of the numerical decline of established churches. The author then answers his own question by explaining that the target for this work is primarily ministers and seminary students.

Reddish himself is a relatively recent seminary graduate (MDiv, 2015), from Knox College in Toronto, one of three seminaries operated by the Presbyterian

Church in Canada. This may explain, in part, his ability to reach his target audience. He is also a physicist (PhD, Manchester, UK). After spending time at the Newcastle University, Newcastle upon Tyne in the UK, he moved to Canada, and was a professor of physics at the University of Windsor. He commenced his Knox College studies in 2011.

The subtitle of the book is *Foundations and Frameworks for Moving Forward in Faith*. As a Knox graduate myself, I would note that Reddish was paying close attention to the preaching class that covered the topic of alliteration! The phrase does reveal, however, the well-structured nature of the book, although there are some refreshing alterations to usual approaches on this well-covered topic. For example, while many books tend to handle the topic of Genesis in earlier sections, the author saves this for the final chapter, which is entitled "Revisiting Science and Scripture: Creation Texts in the Old Testament." There are also two short appendices covering theistic arguments for the existence of God and metaphysics.

The first two chapters focus on Scripture. In addition to a historical overview, a primary topic of chapter 1 is the "Galileo Affair" (author's quotes). We see another of the author's propensity for alliteration, as he summarizes the complexities of the affair as concerning "power, politics, patronage, popes, precedents, principles, polemics and personalities." The chapter concludes with a useful section entitled "Galileo: Lessons for Today," noting that, "Sadly, some Christian traditions are simply fighting an outdated war with the wrong tools."

The second chapter continues the focus on scripture, particularly its inspiration and interpretation. Amongst the theologians cited is Bradley McLean, who is professor of New Testament Language and Literature at Knox College. Reddish makes extensive and appropriate use of McLean's book *Biblical Interpretation and Philosophical Hermeneutics*, and cites the utility of two types of meaning of a text: the original founding sense event, and a reinterpretation of its significance in every subsequent generation.

The next two chapters then focus on the nature of science (chapter 3) and relating science and Christianity (chapter 4). Like others, the author uses the classifications of Ian Barbour (Conflict, Independence, Dialogue, and Integration). In this case, the author makes considerable efforts to review the strengths and weaknesses of each classification. This chapter is worthy of (and requires) several reads, but provides a useful backdrop for the remainder of the book.

This reviewer found the last four chapters of the book the most intriguing. Chapter 5 is entitled "On Chance, Order and Necessity." It builds upon two opening quotes, one from Ecclesiastes 9:11 concerning the ubiquity of both time and chance, and the other from Stephen Hawking who admits that those who believe in predestination still look both ways before crossing the street. Reddish states: "In reflecting upon points of possible tension and potential connection between science and faith, I have become convinced that one key issue is that of chance." He goes on to build his case for the importance of both contingency and necessity by extensively citing a number of scientist–theologians, including Peacocke, Polkinghorne, and Barbour, amongst others. He concludes, "I advocate that the quest for modernism's certainty, which is embodied in physical and theological determinism, needs to be abandoned." Encouraged by 2 Corinthians 5:7, he supports the contention that the opposite of faith is not doubt, but certainty.

Reddish follows this up with two related chapters, more theological in emphasis: chapter 6 "On the Nature of God," and chapter 7 "On Miracles and Prayer." As with the previous topic (and others covered in the book), the author notes at the start of chapter 6 that "even the nature of God is not as straightforward as Christians think." Topics covered include the Trinity, immutability, omnipotence, and omniscience. On the topic of miracles and prayer, Reddish builds upon the relational nature of God and notes that any serious dialogue between science and Christianity "must recognize God's covenantal commitment to humankind (and indeed the whole creation)."

As mentioned, Reddish uses the final chapter of his book to review aspects of science and Scripture through various creation texts. This includes not only early chapters of Genesis, but the creation texts of the Psalms, Job, etc. Of particular note are the references to chaos. Reddish builds a case for order and chaos as being "inseparable," both necessary in sustaining life.

Four of the book's chapters contain a specific "Summary and Conclusion" section. There would have been value in carrying this on throughout the book. As a minister, I appreciated the pastoral approach that Reddish took in handling complex subjects, as he shared in detail all sides of the issue. As a former geologist, I appreciated his review of the nature of science itself, and the interpretations concerning the role of chaos in creation (including such things as plate tectonics. I also appreciated the

opportunities taken by Reddish to share his own views, which will resonate with many ASA/CSCA members. In his conclusion to his final chapter, for example, he encourages his readers to embrace the biblical stories on their own merits and (following Barbour) advocates for an independence stance between science and scripture, while endorsing a dialogue perspective between science and theology. There are those who may wish to push further toward a more concordist position. However, Reddish argues in chapter four that one must be careful about making the text say something it never said, and that while concordism's hermeneutic is well meaning, "it is ultimately flawed."

In David Livingstone's book *Dealing with Darwin* (Johns Hopkins University Press, 2014), there is a chapter entitled "Toronto, Knox, and Bacon's Bequest." The "Knox" refers to the aforementioned college, and Livingstone notes that in the mid to late 1800s, the intellectual leadership at the college displayed "a notable willingness to engage in a creative conversation with evolutionary theory." Tim Reddish carries on with that tradition. He has delivered to his target audience well, but I would happily recommend the book for more general use also.

Reviewed by Bob Geddes, a retired Presbyterian pastor, former geologist, and secretary-treasurer of the CSCA.

FINDING GOD IN THE WAVES: How I Lost My Faith and Found It Again through Science by Mike McHargue. New York: Convergent Books, 2016. xiv + 274 pages, notes, index. Hardcover; $24.00. ISBN: 9781101906040.

> *"The first gulp from the glass of natural sciences will turn you into an atheist, but at the bottom of the glass God is waiting for you."* (Werner Heisenberg)

A more fitting epigraph could not have been chosen for this book. Mike McHargue, who goes by "Science Mike" these days, has been on a wild ride for the past few years. A college dropout turned autodidactic marketing VP, McHargue is now a full-time writer, speaker, host of the podcast *Ask Science Mike*, and co-host of *The Liturgists Podcast*. Readers of *PSCF* are likely to be familiar with his work with BioLogos in addition to his contributions to various magazines and blogs. *Finding God in the Waves* weaves these projects together into two parts that are essentially interleaved. The first functions primarily as a memoir of McHargue's conservative Southern Baptist upbringing, his slide into atheism, and his subsequent rediscovery of faith. The second explores how McHargue understands the intersection of science and faith today.

While he makes it clear that he is not a trained or working scientist, McHargue nevertheless possesses a unique ability to synthesize the literature into a form that is accessible and engaging to laypersons and scientists alike. With highly visible science popularizers like Tyson and Nye sometimes demeaning the religious, McHargue's ability to convey scientific concepts accurately from a radically inclusive posture is a breath of fresh air.

Regardless of one's position on where McHargue ends up theologically, it is hard to deny the power of his journey. As a self-described nerdy kid with a learning disability, bullying was a constant companion throughout his childhood. In a particularly emotional passage, he tells of how he hid amongst the trees during recess to avoid physical abuse, spending the entire time talking to his only friend—Jesus. Discovering that computers could help him overcome his learning disabilities, as well as experiencing a rock star streak in his teens, led McHargue to a place where he could develop healthier social ties. The church played no small role in this; he was ordained as a deacon at the age of 25.

McHargue's story of an unraveling faith departs from familiar accounts here. It was not Big Bang cosmology, or evolution, or the problem of evil that sparked doubt; it was reading the Bible itself. McHargue was blindsided by his father's intention to seek a divorce after nearly thirty years of marriage. Intent on helping his father see the gravity of this sin, McHargue tackled the problem by throwing himself into the scriptures. Having never read the Bible from cover to cover before, McHargue read it through four times in one year. Apparent contradictions that he had overlooked before and troubling passages that he had been able to explain away began to rear their heads anew; paradoxically, constantly steeping himself in the text made these harder to ignore. Clearly a voracious reader, McHargue sought insight from apologists and atheists alike as his faith continued to erode—until reading Dawkins's *The God Delusion* finally tipped him over the edge.

McHargue spent the next two years as "the world's least interesting secret agent—an atheist under deep cover in the Baptist church" (p. 74). He was eventually found out by his wife, and his "secret" nearly destroyed his own marriage. They managed to work it out and McHargue became, by all accounts, a well-adjusted secular humanist. However, at a conference on creativity hosted by Rob Bell, McHargue had a series of profound mystical experiences that culminated in a moment on a Californian beach in the middle of the night where he "felt connected to the Source of Life and the Source of All" (p. 127).