forth four "determinants" that influence the criteria. Lin spends most of the book breaking down these "determinants" into their component parts.

The four determinants for the creation care command, he argues, are worldview, ethical theories, science, and society. In the first, Lin explores a range of worldviews, both religious and nonreligious, before examining how worldviews affect the criteria for evaluating the creation care command. In the following chapters, Lin examines a massive range of ethical theories, understandings of science, political ideologies, and economic theories with a careful and analytical eye. He critiques and lauds each fairly, while often providing compelling alternatives to common ideologies. His goal in doing so is to bring to light these foundational beliefs with an understanding that all of them have much to say about environmental stewardship.

An immediate concern for some readers may be that Lin begins to fall into moral relativism or that he accepts any belief regarding creation care as legitimate. However, Lin does an excellent job of reiterating the goal of the book. Rather than placing a value judgment on beliefs, Lin understands that in order for effective dialogue to take place, all views must be presented fairly and entirely. A quick glance at the acknowledgments and citations shows a wide variety of individuals with passionately held beliefs, and Lin certainly holds his own. However, by bringing together a sizable breadth of topics, he emphasizes "that the path from principles to practice is often incredibly complex and multi-faceted, not simple, and requires the highest levels of creativity to bring together many different fields of study—with different kinds of authority and expertise" (p. 17).

Lin does not resolve this uneasy tension. He ends his book with guidelines for synthesizing a comprehensive understanding of environmental stewardship rather than presenting his own complete synthesis. As a reader, I was forced to accept his critiques of my own fundamental beliefs while better understanding the beliefs of someone with whom I may disagree. A voice like this is sorely needed today and his strategy for understanding issues can be broadly applied to issues other than environmental stewardship.

The book is a challenging read and heavily references outside texts. For a reader to fully grasp Lin's ideas, they should already be familiar with some of the philosophical, theological, and environmental literature. The book is also very dense and should be read with a focused eye and a pen to take notes. At times, Lin uses large words and complex sentence structure when simpler prose would suffice. For someone who is trying to improve conversations about environmental stewardship at their church, campus community, or neighborhood, this is an excellent resource. However, while there are discussion questions at the end of each chapter, it would still be a frustrating book for the average church or small group that is casually interested.

Some may see the word "stewardship" in the title and assume the book is outdated; while terms such as "reconciliation" may be more in vogue, this book is very timely. The end of the book draws heavily on reconciliation themes and helps address the concern that creation care discussions often lead to damaged relationships and division. Lin references familiar social psychology and Christian peacemaking sources to provide strategies for effective conflict resolution. Lin earnestly seeks peaceful living between individuals and groups, and this book provides strategies for the development of that peace. The ability to articulate effectively *why* a certain belief is held allows for people to find common ground and develop more stable policy solutions. He argues this effectively and provides the taxonomy for this to take place.

This book both made me think and changed how I think. If Lin's goal is to help us understand how we think about environmental stewardship, he achieved it. Lin's book is an effective solution to a common problem: we have forgotten how to talk about issues such as environmental stewardship with those with whom we disagree. Lin reopens the dialogue.

Reviewed by Joseph S. Tolsma, North Carolina State University, Graduate Department of Genetics, Raleigh, NC 27695.

History of Science

SCIENCE WITHOUT FRONTIERS: Cosmopolitanism and National Interests in the World of Learning, 1870–1940 by Robert Fox. Corvallis, OR: Oregon State University Press, 2016. 168 pages, 24 B&W illustrations and photographs, notes, bibliographic essay, index. Paperback; $22.95. ISBN: 9780870718670.

Begin with a truism about an earlier century: "… truth was indeed open to all. Yet it was only fully open to those who knew how to get at it" (p. 13). When Ben Jonson appealed to Seneca's adage (*Patet omnibus veritas*) in his seventeenth-century commonplace book, the sheer volume of printed material was already making one's access to truth increasingly difficult. How the sharing of knowledge across international and linguistic boundaries developed in the late nineteenth and first half of the twentieth century is the historical question that Robert Fox, Emeritus Professor of the History of Science at the University

of Oxford, tackles in this book. Initially delivered as a series of lectures at Oregon State University, they are now published in a highly polished and documented form. Fox, a well-known scholar in the history of the physical sciences in the eighteenth and nineteenth centuries, has now turned from an examination of science as practice to science as a model for society with international aspirations, a society in which real harmony, peace, and understanding set the tone.

Fox's thesis, in short, is

> that shared research goals and scientists' readiness to take advantage of the dramatically improved provision for communication across national and linguistic boundaries had much in common with contemporary internationalist movements extending far beyond the realms of science and technology. (pp. 2–3)

If you have ever wanted to learn how collaborative efforts and improved mechanisms of communication and information retrieval came into existence, this is the book for you. To Fox's credit this is not a mere cataloging of efforts, but a hard-won academic search for the cultural contexts that made such a retrieval of knowledge both invigoratingly delightful and, at times, frustratingly difficult. Political and cultural contexts matter. *Science without Frontiers* is a testament to that fact in the arena of knowledge acquisition and sharing.

Besides a brief introduction and epilogue, *Science without Frontiers* has three major chapters. The first, "Knowledge, the Cement of Nations," traces advances in scientific collaboration across linguistic and national boundaries from the mid-nineteenth century up to the First World War. This collaboration was fostered by the accelerated growth in international congresses and scientific societies. Such efforts also were funded by a search for a universal language (Esperanto), cataloging innovations such as the Melvil Dewey decimal system of classification, the creation in Brussels in 1895 of an Institut international de bibliographie (IIB), and the formation of international institutes and societies for geodesy, astronomy, chemistry, et cetera. It was a revelation to this reviewer to fathom how widespread these efforts actually were. The role that Belgium played in these endeavors, as a neutral country and as an assumed facilitator of knowledge between the Latin and Germanic worlds, was remarkable. These efforts to build and elaborate a "scientific internationalism" gave support to those focused on creating a global society in which information and values were shared.

The jarring reality of WWI as national governments increasingly sought to control the uses of science and technology brought a challenge to these international efforts. This is detailed in the second chapter, entitled "War as Watershed." Perhaps the most egregious event occurred early in the First World War. On October 4, 1914, ninety-three German intellectuals signed a patriotic manifesto, "A Call to the Civilized World," claiming the allies had stained German honor by suggesting that the German kaiser had wanted to go to war and that Germany had violated Belgium's sovereignty. About one fifth of the signatories were scientists, many of them Nobel Prize winners. Albert Einstein, ever the internationalist and pacifist, was the leading scientific holdout. The war, later hostilities, and latent prejudices brought a near halt to any cooperative endeavors.

In chapter 3, "The Legacy of a Fractured World," Fox advances the story up to 1940. Once the idealistic vision of an "all-embracing internationalism" was so savagely called into question, it would indeed take an extreme effort to reestablish international scientific cooperation. The agenda was set by a "national turn." Pride of place was given to national museums and exhibitions, as well as the number of Nobel Prize winners a nation had won. To be sure, there were still countervailing efforts to normalize relations between countries. The International Research Council (IRC), through its organs such as the International Astronomical Union (IAU) and the International Union for Pure and Applied Chemistry (IUPAC), sought to reestablish relations with the Central Powers, despite the prevailing French/German rivalry and the reluctance of Belgian academics to participate with Germans. Also, the increasing "totalitarian tide" in Germany and Russia in the 1930s made cooperation difficult. Just think, for instance, of the four-volume manual, *Deutsche Physik* (published in 1936–1937), by German Nobel Prize winner Philipp Lenard, as well as the pavilions celebrating and glorifying national contributions at the 1937 International Exposition in Paris.

A short epilogue highlights some of the more hopeful post-1940 developments, such as the resuscitation of the International Committee on Intellectual Co-operation in 1945. This was soon followed by UNESCO, the United Nations agency for educational, scientific, and cultural affairs. In our own century we have seen such ventures as the Google Books Library project, the Digital Public Library of America (DPLA), and global brain emerge. The question remains whether they will succeed in making truth open to all.

Who should read this book? Anyone interested in learning more about the social and cultural embeddedness of scientific international communication endeavors. And, equally, those interested in reflecting critically on the human hope that science and

scientific knowledge sharing and acquisition will lead to a promised land in which peace reigns unadulterated.

Reviewed by Arie Leegwater, Department of Chemistry and Biochemistry, Calvin College, Grand Rapids, MI 49546.

ORIGINS

SAVING THE ORIGINAL SINNER: How Christians Have Used the Bible's First Man to Oppress, Inspire, and Make Sense of the World by Karl W. Giberson. Boston, MA: Beacon, 2015. 212 pages. Hardcover; $27.95. ISBN: 9780807012512.

In his latest endeavor to make a case for the coherence of evolutionary science and religion, Karl Giberson uses the biblical story of Adam as both a starting point and a framework for exploring the alleged "conflict" between religion and evolution in American culture. Giberson is a physicist who, in an earlier book (*Saving Darwin: How to Be a Christian and Believe in Evolution*) gives "a deeply personal account" of how he was raised as a fundamentalist whose ambition was originally to study science and to become an advocate for creationism, but who, in his scientific studies, discovered young-earth creationism to be indefensible. Yet, still a Protestant Christian, he felt compelled to justify his belief that one can both accept evolutionary science and remain Christian. Largely because of the rather negative reception of the *Saving Darwin* book in evangelical circles, he spent much time defending his views to critics and to the administration of his own evangelical college. Eventually, he quit his job (where he had taught for 27 years); he now teaches at a Catholic school that "welcomes examination of its own traditions." It was within this environment that Giberson was able to write the current book under review. He notes that several other scientists and friends at evangelical schools, who had also written books or articles about evolution as God's creative process or about how Christianity need not believe in a literal Adam, have been driven out of their teaching positions. Clearly, within the environment of an evangelical college or university, delving too deeply into this topic is a potentially risky task, although the scientists at many of these colleges have been trained at first-rate and elite universities.

The Adam of the Old Testament is only rarely mentioned in the biblical texts after Genesis. Christians, however, have focused on Adam as the ultimate source of sin, death, and evil among humans. Furthermore, says Giberson, Adam is seen as establishing the social order regarding heterosexual marriage, free will, observation of the Sabbath, use of the earth's resources, condemnation of nudity, and the assigning of subordinate roles to women and non-whites in modern society, as well as influencing people's views of evolution and big bang cosmology. However, Adam would probably have remained a relatively minor character had it not been for the Apostle Paul, whose theology cast Christ as the "Second Adam" and whose role is to undo the damage done by the first one. Giberson next recounts the roles of early Christian apologists in developing this viewpoint. The question arose: Did Adam's sin stain all of humanity and make it impossible for any of us to avoid sin, or was Adam simply an example for each of us, that we all have the free will to either sin or to avoid sin? The Pelagian heresy, advanced by the early Christian ascetic Pelagius, took the second view. According to Pelagius, Adam was merely an example of each of us. Adam's sin was his own; infants are born into a state of innocence and Christians need not be overly concerned with Adam's sin to the point of hopelessness.

The definitive Christian answer to this question was put forth by the early theologian Augustine of Hippo (St. Augustine) who, says Giberson, was the most influential Christian in the Western church after Paul. Augustine argued for "original sin" with which we are all born due to Adam's sin, and for Christ as the "Second Adam." This arises from his affirmation that salvation can only come from the church through the sacrament of baptism. Any other path claimed for salvation, such as through good works, would suggest that Christ had died in vain. Therefore, seeing Adam as simply an example of the temptations faced by "Everyman" is insufficient to explain the passion of Christ. But, if all are born inheriting Adam's transgression, then infants must be baptized as well. It made sense to Augustine that the suffering of innocent infants who have disease and deformities is the result of the sins they inherited, not any they had as yet committed. Furthermore, as babies mature, he noted, they always commit sins in their actions as if they are actually unable to choose the good over sin. As such, Augustine established the role of Adam as the source of original sin and Christ as the only path to salvation. Thus, Christ himself became the only character in the entire Bible that is more significant than Adam.

From here, Giberson brings in the medieval topic of dualism. As Christianity moved into the late Middle Ages, Thomas Aquinas argued that while Adam's fall had indeed impaired the ability to resist sin, it had not affected human reason. Thus, through the study of natural philosophy, humankind can learn to understand God's grand design on a cosmic scale. Aquinas taught the centrality of the unmov-