change in the way we view others and nature. The book describes the way humans approach wealth as radically wrong. Some passages sound much like the Sermon on the Mount (Matthew 5–7), with its calls to care for all creation; to honor the weak, poor, and powerless as much as the powerful and rich; and to be joyful and grateful while choosing a slower, less consumptive life. In addition, the encyclical accurately represents the current scientific consensus. Several scientific groups and individuals have made supporting statements, in part because Pope Francis invited scientists to the Vatican and included them in discussions during the writing process. This book also has the capacity to affect international agreements. The timing of its release, before the December 2015 Paris climate talks, was critical in attracting attention from the press and thus encouraging widespread discussion.

In spite of these strengths, there are a number of weaknesses. The encyclical is full of generalizations but gives few specific details. How many species are going extinct? When and where are people most viewed as objects? How, specifically, will we make the radical changes Francis suggests, if individuals are sinful and institutions are driven by short-term gains? Francis makes some suggestions, but they are not well spelled out. Furthermore, the encyclical does not discuss population growth as a contributor to any environmental issues. While this was unsurprising given the Roman Catholic Church's position on birth control, it was a glaring omission. Many of the major criticisms of the encyclical came from those in the fields of politics and economics. For example, the encyclical dismisses cap-and-trade systems, which proved successful with sulfur emissions, but it gives no clear alternatives for economically and politically viable mechanisms to lower carbon emissions.

Laudato Si' reminds us that the current state of affairs in which brutal poverty and overconsumption co-occur is damaging to both humans and the rest of creation. The specifics of solutions to the need for both development and environmental protection are left to the international community, as we attempt our next global undertaking with the new Sustainable Development Goals of 2015–2030. By then we will have had three more Olympics, and hopefully they will be held in a world that is more moral, better cared for, and more sustainable. I recommend the book, both to individual readers and to groups that will find the included discussion questions helpful as a guide to conversation.

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Ethics

THE END OF SEX AND THE FUTURE OF HUMAN REPRODUCTION by Henry T. Greely. Cambridge, MA: Harvard University Press, 2016. 381 pages. Hardcover; $35.00. ISBN: 0674728963.

With a title that is sure to catch a reader's eye, this book draws us in to think of a world in which sexual intercourse will no longer serve a role in reproduction. In this book, Stanford University law professor Henry Greely examines a putative world in which sperm and egg cells could be made from skin cells to produce embryos that would be genetically screened before given a chance to develop fully. In his writing, Greely coins the term "easy preimplantation genetic diagnosis" (EPGD) and predicts that this will be a standard tool used in producing offspring in the relatively near future.

Based on our current knowledge of genetics and stem cells, and the rate at which we have acquired such knowledge, Greely outlines what is needed with regard to scientific advancements and predicts that a world as portrayed in the movie *Gattaca* or read about in *Brave New World* is merely twenty to forty years away. He describes a future in which children can be born from parents who never existed, gay and lesbian couples can have biological offspring together, disease-causing mutations could be wiped out in a generation, individuals could have offspring with themselves, and parents could discard embryos based on the lack of desired traits.

In predicting this future world, Greely writes so that the topic is accessible to a broad audience. He begins by giving "a nonscientist guide" to readers so they can understand the scientific foundation that will allow EPGD to become a reality. He then discusses what will be needed by way of scientific advancement to make EPGD an affordable reality. As one digests the advancements that will be needed, one begins to see the benefits and complications of such a world. In the third part of his book, Greely walks the reader through several implications for society of genetically screening embryos in order to select for certain traits.

I find it interesting that the author begins his book by discrediting his authority. He admits that he "last took a biology course at the age of fifteen" and concedes that his book "gives a nonscientist a guide," as he is a lawyer not a scientist.

The first six chapters of the book make an attempt to give the reader an overview of the pertinent science relating to genetically diagnosing embryos. There were only a couple of times I cringed as I read through those early chapters. There were several errors/over-simplifications, and I was disappointed that the author touches only briefly on epigenetics (a mere page and a half). However, the first part of the book is not intended for scientists, and it does provide an interesting example of how someone with little to no scientific background can work toward an understanding of the field. The author does a nice job of explaining scientific concepts in a manner that nonscientists will likely be able to grasp.

Greely provides many examples of scientific advancements in the past and relevant legal cases with regard to human rights. In doing so, Greely gives his audience the tools to begin to wrestle with some of the important questions. Have the scientific and legal communities really examined the trajectory we are on? Do we want to live in a world in which we have parents genetically selecting which offspring should be given a chance at life? How do we educate those without a scientific background so they can make informed decisions when it comes to utilizing genetic diagnosis? What future injustices are we setting up? Who gets to say what traits are allowable, and which ones should be selected against? Can we, and should we, implement regulations of such a technology? Whom do we permit to enforce laws?

Ideally, the book will motivate Christian readers to think about where we want to go with the plausible scientific advances now on the horizon. We need to participate in ongoing discussions pertaining to genetic testing and stem-cell-related advances. However, we need to be aware not only of the subject matter but also of our audience. For example, the author points out that he is unwilling to engage in conversations with people who cite biblical references to argue that utilizing genetics to select embryos and choosing genetic traits for offspring is wrong. Greely clearly states that he is a consequentialist when it comes to ethical dilemmas and expresses that it is "surprisingly difficult" to find religious positions pertaining to EPGD, claiming he could not readily find a central authority figure who addresses the technologies on the horizon. As Christians, this should give us pause. Hopefully, we will contemplate and discuss what role Christians will/should play in answering these questions. Ideally, we can all participate in this discussion in a respectful and informed manner.

Choosing to have a child is a major decision many wrestle with. Imagine now a world in which we have to wrestle with what traits we want that child to have. In *The End of Sex and the Future of Human Reproduction*, Greely calls us to learn as much as we can before this technology fully exists, so that we can be equipped to make informed decisions.

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Geology

THE GRAND CANYON, MONUMENT TO AN ANCIENT EARTH: Can Noah's Flood Explain the Grand Canyon? by Carol Hill, Gregg Davidson, Tim Helble, and Wayne Ranney, eds. Grand Rapids, MI: Kregel Publications, 2016. 240 pages. Hardcover; $26.99. ISBN: 9780825444210.

At last! We now have a scientifically credible, readable book about the Grand Canyon geology geared to nongeologists: *The Grand Canyon, Monument to an Ancient Earth: Can Noah's Flood Explain the Grand Canyon?* The answer given to the question posed by the title is a resounding "NO, IT CAN'T!" Although not stated in so many words, the authors were clearly motivated by a fervent desire to drive "flood geology" into extinction. I join the authors in hoping that they succeed.

This eagerly anticipated book has long been gestating, but the wait has been worth it. The full story behind *The Grand Canyon* was told in the June 2016 issue of *Perspectives on Science and Christian Faith* by Carol Hill, the instigator and driving force behind the book. A Christian geologist who specializes in cave geology and hydrology, Hill is the author of *Cave Minerals* and has published several technical articles on aspects of the Grand Canyon geology. She assembled a first-rate team of eleven contributors, at least eight of whom are Christians. Hill, Stephen Moshier, and Gregg Davidson did the lion's share of the writing, but every one of the eleven wrote at least one chapter and helped to shape the entire manuscript. The team of authors includes three hydrologists, a carbonate sedimentologist, an aqueous geochemist, two paleontologists, a structural geologist, a planetary scientist, a petroleum geologist, and a botanist, thus providing a wide range of professional expertise necessary for a competent discussion of virtually all aspects of the Grand Canyon geology. The contributors represent the American Association of Petroleum Geologists, five major universities (New Mexico, Mississippi, Tulsa, Northern Arizona, and Akron), two Christian colleges (Wheaton and Calvin), and two federal agencies (National Weather Service and