

PGD and genome editing require embryo selection. They advocate limiting the use of PGD to medical considerations, preferably to avoid the birth of a child with a very severe disease. This is consistent with their view (p. 63) that “a meaningful and fulfilled life will be made more difficult by conditions that cause significant and persistent pain.” On page 62, they suggest that it may be possible to select sperm without a harmful mutation before in vitro fertilization to increase the number of eligible healthy embryos for implantation. However, they give no explanation for how this selection might be done without destroying the sperm cells in the process, and no reference is provided.

In chapter 4, Massmann and Fox consider the possible use of somatic or germline gene editing for introducing nonmedical enhancements, such as improved athletic ability, memory, and life span. They argue that genetic enhancements could exacerbate social inequalities for underprivileged people, leading to diminished social participation and reduced political or economic opportunities. They challenge the assumption that greater physical and mental capabilities will produce more fulfilling lives and reiterate their concern that it could lead to discrimination against people living with genetic diseases or disabilities. The authors also question whether it is appropriate for parents to choose enhancements for their children. Would children become more like commodities than precious gifts, subject to our own design or will? Considering these arguments, the authors suggest limiting genome editing to medical and therapeutic procedures, which they define as any intervention that restores or preserves the function of an organ.

Chapter 5 focuses on the history of eugenics around the world. Massmann and Fox note that the murder of about 200,000 disabled people by the Nazis was not motivated by considerations of race or concerns that future generations might inherit a genetic impairment. Instead, it was motivated by economic considerations (the cost of care for the disabled and their lack of productivity) and an “ableist” mentality that emphasizes independence and physical functioning while marginalizing dependence, weakness, and vulnerability. The authors express concern that far-reaching genome modifications, especially genome enhancements, will reinforce an ableist mentality in our society, leading to antidisability prejudice.

In the final chapter (chap. 6), Massmann and Fox consider human dignity, arising from our creation “in the image of God,” and its implications for advancements in biotechnology. They maintain that human dignity is more than just a respect for personal autonomy; it also includes a moral call to work for the benefit of others and to take care of our own bodies and personal health. The authors assert that society should not allow technologies, such as genetic enhancements, to be marketed freely if there is a significant health risk, even if individuals have given informed consent. On the other hand, they note that as God’s image-bearers we can use science to “tame the destructive forces and to restore order where chaos threatens life” (p. 130). The authors conclude that as we employ new technologies to overcome disease and infirmity, we must do so in a way that respects the dignity of patients as well as of the scientists who develop the technologies and the caregivers who administer them. We must also ensure that our zeal for increased levels of function does not lead to the exclusion of those with disabilities.

*Reviewed by Brian T. Greuel, Emeritus Professor of Biology, John Brown University, Siloam Springs, AR 72761.*

DOI: <https://doi.org/10.56315/PSCF12-23Northcott>

**GOD AND GAIA: Science, Religion and Ethics on a Living Planet** by Michael S. Northcott. New York: Routledge, 2023. 271 pages. Paperback; \$40.00. ISBN: 9780367627744.

Biodiversity loss, water pollution, and declining soil health are major indicators of the ecological crisis facing our planet today. Science can be consulted to address these issues; however, as Michael Northcott argues in his latest book, *God and Gaia: Science, Religion and Ethics on a Living Planet*, unless science resists its scientism it will only exacerbate the current ecological crisis.

Northcott, an ordained Anglican priest and Professor Emeritus of Ethics at the University of Edinburgh, has written extensively on environmental issues.<sup>1</sup> In *God and Gaia*, Northcott explores the Gaia theory of James Lovelock—that “the Earth and her creatures are active agents in the generation of conditions which make the Earth habitable for Life” (p. 2)—from a religious ethics perspective. In effect, “God” in the book title does not indicate that the author will be taking a specifically Christian angle on the Gaia

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theory, but rather taking something more akin to a comparative religions approach. The book is a collection of previously published papers along with new material curated into eight chapters, each with its own abstract and notes section. This arrangement, along with chapter subheadings, aids the reader in following along with Northcott's exploration of the Gaia theory. Northcott draws from a variety of published sources, along with his diverse experiences in Borneo, to get his main points across regarding the dangers of scientism in contrast to the restorative powers of Gaia.

Scientism, the condition in which only knowledge gained from observations is considered true, is an ideology that has created, according to Northcott, a "bifurcation between nature and culture." Northcott provides a history of scientism describing how, following the European enlightenment, anything that was not measurable tended to be viewed with suspicion by many in the West. He elaborates that scientific reductionism led to a top-down approach where the "rights of corporate agents trump the rights of people and species to stable and safe habitats" (p. 157). Northcott uses the example of the global response to the COVID-19 pandemic to demonstrate the full potential of scientism and its globalist and technocratic top-down control. Here, Northcott's one-sided argument regarding the benefits of ivermectin, the ineffectiveness of vaccines, the dangers of lockdowns, and the evils of the United Nations may distract readers from his intent of describing top-down control.

In contrast to scientism and its top-down control, Northcott recommends a Gaian approach to addressing the ecological crisis. While *God and Gaia* is not an introductory textbook, it does provide a thorough overview of the theory and its history. With an understanding of the Gaia theory in place, Northcott focuses on connections between Gaia and Hindu, Taoist, and Christian religious traditions. For Northcott, the Gaia theory can be interpreted as a rediscovery of beliefs held by earlier faith traditions. With great respect, he demonstrates how the Vedic Trinity and the Tao have parallels with Gaia theory's emphasis on the agency of all organisms. Northcott then eloquently demonstrates that medieval Christianity also emphasized the sense of agency in all organisms. Northcott, drawing on philosophers such as Seyyed

Hossein Nasr, explains that most western Christians are unaware of the sacred cosmology of their tradition and its emphasis on the agency of being. For the betterment of the planet, Northcott urges religious traditions "to make more prominent in their liturgies the symbiotic relations between humans and other animals which for most of human history has been central to their mutual flourishing" (p. 261).

Overall, *God and Gaia* does an excellent job of contrasting the current approach of scientism versus the moral and spiritual Gaian philosophy to address the ecological crisis. Northcott is calling for a revival of core aspects of human traditions which modern secular science and philosophy have diminished. This Gaian revival recognizes the agency of all of Earth's systems. Although the Gaian revival and its earth-centered philosophy deviates from a distinctly Christian approach to creation care, readers should find some comfort in this revival as it shows that we are not alone in our efforts to restore the ecological integrity of the Earth.

### Note

<sup>1</sup>See Michael S. Northcott, *The Environment and Christian Ethics* (New York: Cambridge University Press, 1996); \_\_\_\_\_, *A Moral Climate: The Ethics of Global Warming* (London, UK: Darton, Longman and Todd, 2007); and \_\_\_\_\_, *A Political Theology of Climate Change* (Grand Rapids, MI: Eerdmans, 2013).

*Reviewed by Bruce Friesen-Pankratz, Assistant Professor of Environmental Science, Natural and Social Science Department, Providence University College, Otterburne, MB R0A 1G0.*

DOI: <https://doi.org/10.56315/PSCF12-23Morange>

**A HISTORY OF BIOLOGY** by Michel Morange. Translated by Teresa Lavender Fagan and Joseph Muise. Princeton, NJ: Princeton University Press, 2021. 418 pages. Hardcover; \$29.95. ISBN: 9780691175409.

A book that introduces the history of biology will be of interest to many readers of this journal. The Preface states that the author, Michel Morange, will present a broad historical overview of the history of biology that, unlike some other histories of biology, will include developments in the twentieth and twenty-first centuries. In this regard, he mentions Lois N. Magner, *A History of the Life Sciences*, 3rd ed. (New York: Marcel Dekker, 2002). Magner's book does cover many scientists and developments in the twentieth century, although, significantly, she does not discuss the modern evolutionary synthesis.