> Unfortunately, this also makes the self automatically the bearer of all responsibility for everything that comes out of its host's actions—a side effect of being self-aware that really helps learning, at the cost of condemning a conscious being to anxiety and suffering. (p. 4)

This comment is made in the book's introduction and carried through to the end as the inevitable demise of society—a system run by the richest and most privileged who are seemingly imperious to the plight of those with less privilege.

A second theme is one of consciousness revolutions in an ascent toward the complexity and perils of being human in community. Each revolution has its own chapter. This is evident in the description of book sections and chapters (above), beginning with the amoeba's essential consciousness and ending in the highly complex consciousness of humans in community.

One main point of the book is that true consciousness is defined by being at a level where one does not have to worry about freedom, politics, or the economy. Thus, a person needs to have enough resources (e.g., financial means) to just focus on self, family, and science. "Being, or at least being well-off, does after all determine consciousness" (p. 128). This indicates, then, that one must be of privilege to experience consciousness, in its current iteration. Thus, the inevitable evolution of societies into a capitalist structure, with overlooked and underprivileged classes of individuals, means an unequal ability for multitudes of people to experience "consciousness"—at least, until another consciousness revolution occurs. Edelman declines to elaborate on the next revolution but implies, with careful optimism, a transformation of the freedom that arises from privilege into true freedom for all humans, with a decline in materialism/capitalism.

Edelman's proposal for evidence of consciousness detours away from how it is defined in the cognitive domain by being both too simplistic and broad. In the cognitive literature, processes linked to consciousness must reveal knowledge of a person, place, and time specific to an event. It would certainly be difficult to find evidence of this in the behavior of amoebas, but humans are generally able to show it, regardless of social class (with the latter point contradicting Edelman's later revolutions). Language is another defining feature of conscious cognitive process, a requirement met in chapter 4, but not met in earlier chapters and not enough to meet the requirement for consciousness in later chapters. Since Edelman defines consciousness in many different layers of complexity, it ends up feeling like a moving target and many definitions. This complicates empirical evaluation and comparison with existing cognitive theories of consciousness.

In relating Edelman's ideas to those of Christian theology, some Christian theologians assume that conscious cognitive processes are what set us apart from animals and are part of being made "in His image." For some theorists this includes not being so reactive to emotions. Arguably, though, the incorporation of those emotions into the decision-making processes may lead to poor decision making. Yet, the current focus on mindfulness encourages us to dig into our emotions and become aware of them. Moving into a state of flow, a state considered to be quite positive and an optimal experience, requires unhooking from the planning and coordinating and relying on our bodies to do what they know how to do; this would seem to be a more animalistic, unconscious state.

Edelman describes the inevitable fall of society into a money-prioritized capitalistic structure where only the elite are able to experience consciousness. This implies a lack of choice in this fate, and certainly a lack of a loving God providing oversight. It contradicts that reliance upon God might be easier for those of less means as their needs prevent them from falling into the fallacy that they do not need a God. In fact, it could be argued that it is harder for the elite to rely on God, just as it is hard for a camel to travel through the eye of a needle, as they may assume a false sense of control and, therefore, fail to recognize that they need God. If the marginalized classes have an easier time relying upon God and, therefore, experiencing him more fully, aren't they the ones more likely to experience heightened consciousness?

The book is reasonably priced and enjoyable. I often found myself smiling while I read, highlighting insightful passages for later reference, including those in the interlude. Thus, I recommend this book. Just make sure you have had your coffee first.

Reviewed by Kristin Mauldin, PhD, Associate Professor and Director of the Master of Science Sport and Performance Psychology Graduate Program at California Baptist University.

Social Studies of Science

DOI: https://doi.org/10.56315/PSCF9-24Sugimoto

EQUITY FOR WOMEN IN SCIENCE: Dismantling Systemic Barriers to Advancement by Cassidy R. Sugimoto and Vincent Larivière. Cambridge, MA: Harvard University Press, 2023. 256 pages. Hardcover; $35.00. ISBN: 9780674919297.

In *Equity for Women in Science: Dismantling Systemic Barriers to Advancement*, Cassidy Sugimoto and Vincent Larivière take a social science approach to characterizing and assessing the role of gender in the successful pursuit of science. Using seven metrics—production of scientific results, collaboration, contributorship, funding levels, ability to move and travel, scientific impact, and a scientist's role within social institutions—the authors find that despite country of origin, male scientists continue to outpace female scientists across these areas.

Each chapter of *Equity for Women in Science* focuses on one of the seven metrics, beginning with stories from the history of science. In this way, the authors highlight the achievements of early women, as well as the barriers they faced and the sacrifices that were required. While these sections will be familiar to those who have studied the history of women in science, the examples are excellent and represent many of the strongest exemplars of early women in the sciences. Even for those who may already know the stories, these sections are a strength of the book and provide needed context for the subsequent analysis and discussion of the modern situation.

The chapters then transition through time, presenting meta-analysis of existing data followed subsequently by new, largely bibliographic, data produced by the authors. In most cases, the authors utilize publication authorship, the gender of the authors, placement within the author list, and subsequent publication citations, as indicators of the relative contributions of men and women. While the authors do acknowledge the limitations of their analysis (e.g., considering gender as a binary, assigning gender based on an author's name, etc.), these restrictions remain significant caveats to the reported results. In an effort to overcome these limitations, the authors supplement their bibliographic data with that from other sources, including the National Science Foundation (NSF) and Academic Analytics. However, while these datasets provide further evidence that disparities in productivity, funding, and mobility exist between male and female scientists, they too are plagued by limitations (e.g., NSF is a single US funding agency). Regardless, *Equity for Women in Science* provides a useful framework for the assessment and subsequent discussion of the persistent gender gaps in science.

The authors' engagement with the idea of contributorship was new to this reviewer and is a helpful metric for determining gendered roles in the production of scientific results. Since authors contribute in distinct ways to published work, it is helpful to know the role that each author has played (e.g., conceiving of the work, doing the experiments or the analysis, writing or editing a manuscript, etc.) and whether that distribution deviates by gender. Within the biomedical sciences, many top journals have begun requiring authors to attribute coauthor contributions within publications; however, many other fields have yet to move in this direction. Regardless, in journals that attribute contribution, the authors find that women are more likely than their male counterparts to conduct experiments, rather than raise funds or conceive of the ideas. This suggests that women are disproportionately serving in technical roles, rather than leading teams. Yet, the authors show that when women do lead teams, as indicated by their presence as last author on publications, more women are included within those teams. Moving forward, the lens of contributorship may provide a useful means for gauging gender parity in science.

The global nature of the data provides a broader context than one usually sees in these types of analyses; unfortunately, the limitations of bibliographic analysis render the findings more approximate than quantitative. For example, the authors measure the mobility of scientists based on joint publications with international coauthors. While these examples indicate the ability of one or both collaborators to travel, they significantly undercount collaborations within a single country that may also require travel, such as those between colleagues at US institutions that are on opposite coasts, and assume that both collaborators, rather than only one, are engaged in such travel. By using only published international collaboration to measure a scientist's mobility, the reported gender disparity is unlikely to accurately represent the actual mobility of male versus female scientists.

The book finishes with a chapter of recommendations and conclusions, which nicely summarizes many best practices for increasing inclusion of historically underrepresented groups in science. While none of the suggestions are groundbreaking, this section serves as a "quick start guide" for those who are just beginning to think about how to make science more inclusive for women and other underrepresented groups. This chapter would be an excellent resource for those who are introducing these ideas to advanced undergraduate or graduate students.

I believe that the strength of *Equity for Women in Science* rests in its ability to provide a succinct summary of key historical examples of women in science, its characterization of seven individual, but interrelated, measures for gauging gender parity, including the previously underappreciated area of contributorship, and its final summary of best practices for increasing inclusion across disciplines. While the observed trends suggest that more needs to be done to support women

in science, the limitations of the authors' bibliographic methodology hinder the specificity of their findings.

Reviewed by Carolyn Anderson, Professor Emerita of Chemistry and Biochemistry, Calvin University, Grand Rapids, MI 49546.

Theology

DOI: https://doi.org/10.56315/PSCF9-24Wilkinson

CIRCLES AND THE CROSS: Cosmos, Consciousness, Christ, and the Human Place in Creation by Loren Wilkinson. Eugene, OR: Cascade Books, 2023. xvii + 354 pages. Paperback; $36.00. ISBN: 9781666746341.

This book invites the reader to share a great-hearted and generous journey through some profoundly important territory. I take its aim to be to show both how humanity has arrived at the distorted and potentially disastrous relationship we have with the non-human creation, and that Christian thought, framed through an emphasis on creation, incarnation, kenosis, and resurrection can form the basis for a just form of earthkeeping which is also a sharing in the new creation.

In Part I Wilkinson identifies consciousness as the great mystery to be puzzled over, together with the fact of the existence of the cosmos. Part II reviews different aspects of the practice of science—its pleasures, paradoxes, and pains. Part III traces tensions and ambiguities in how science has evolved through the Enlightenment and its interaction with Romanticism, then how that interaction gave rise to the environmental movement, paving the way for various forms of new religion, especially variants of pantheism. Part IV then takes up the theological task, emphasizing incarnation and kenosis. In a concluding Part V, Wilkinson stresses the importance of resurrection and new creation in shaping the Christian story and understanding the human vocation.

The book, then, makes a huge journey. It is the fruit of painstaking research and long reflection. But it is written in such an engaging style that the reader's attention need never flag. The journey is, moreover, leavened with personal reminiscences which show how grounded the author is in his own place (the Pacific Northwest), and how passionately involved he has been in the journey, taking with him many generations of students and conversation partners. It was, for instance, a delight to read that he had held dialogue with E.O. Wilson, whose reductionist views differed so radically from the author's own.

Wilkinson begins from reflections on circles, with their association with cyclic time and rhythms of being, from which there is no escape, and the Cross as a decisive interruption of time. He writes fascinatingly about the design of the Celtic cross, and notes how recent religious longings have wanted to recapture a sense of the rhythms of the earth. Arguably, the linearity of the Christian narrative, and its eschatological drive, make this recapture harder. I would like to have seen this circle-cross motif developed further, but it seemed to get rather lost as the book evolved.

The author's two great allies make a fascinating pair. The first is Iain McGilchrist, whose book *The Master and His Emissary* provides an increasingly influential model of how the two hemispheres of the brain operate differently, the left toward reductive problem-solving, the right toward wonder, imagination, and empathy. The second is the poet Gerard Manley Hopkins (with Wilkinson's knowledge of Romantic poets adding significantly to his analysis).

The author's conclusion will be congenial to most readers of this journal. Some of his history of science will be very familiar ground. I found the tracing of the voluntarism that catalyzed scientific enquiry back to Scotus and William of Ockham fascinating, though it must be of concern that neither of those premier historians of the rise of science, John Hedley Brooke and Peter Harrison, feature in the bibliography. And I felt that there was significant sleight-of-hand in simply associating the Enlightenment with reductive understandings of human beings and the world.

Theologically, Wilkinson's dominant motif is kenosis, which he maps back from Philippians 2 all the way into the heart of the Trinity (following von Balthasar), and forward into the necessary costs to some creatures that enable other creatures to flourish (following Holmes Rolston). I have criticized Rolston for invoking kenosis in the latter respect, since it seems to me to confuse voluntary self-giving with creatures' instinctive survival at the expense of others. Perhaps one of Wilkinson's examples, the Pacific salmon returning upriver to spawn, will make me start to think again. But neither Rolston nor Wilkinson clarify why it is that creation must be so costly to creatures and to God—it seems this is just the pattern that triune creation has to follow.

Wilkinson is very much influenced by the collection of essays *The Work of Love: Creation as Kenosis* edited by John Polkinghorne; I too love that book, but it is important to take note of the criticisms of kenosis, both from classical systematics and from feminism, offered by Sarah Coakley in the concluding essay. Karen Kilby's recent work is a significant sequel to this critique; however, a more comprehensive treatment is needed to address this.