Book Reviews

challenge to the sex/gender binary (e.g., Megan DeFranza's *Sex Difference in Christian Theology*, and work by Margaret Farley and Lise Sowle Cahill). That Yarhouse does not even acknowledge this work, yet does choose to cite uncritically the divisive and controversial work of Paul McHugh, is troubling, and also puzzling, given that he acknowledges throughout the book that a rigid adherence to stereotypical expressions of femininity and masculinity is a source of great pain for the gender dysphoric person, something that Christians need to recognize and relinquish.

Given the complexity of gender dysphoria and the rapid changes in knowledge, theories, and recommendations from mental health professional organizations, all of which Yarhouse acknowledges, I expect and hope that this book will be released in a second edition in roughly the next five years.

In writing to Christians about sexuality and gender, it is impossible to please everyone. Yet Yarhouse has produced a book that should be of service to virtually all who are interested, personally or theoretically, in this topic, and are not already foreclosed. I know that I will be recommending it widely.

Reviewed by Heather Looy, The King's University, Edmonton, AB T6B 2H3.



PHILOSOPHY OF TECHNOLOGY: An Introduction for Technology and Business Students by Maarten J. Verkerk, Jan Hoogland, Jan van der Stoep, and Marc J. de Vries. New York: Routledge, 2015. 336 pages, index. Paperback; \$59.95. ISBN: 9781138904392.

This is probably the best book on the philosophy of technology that I have yet come across—best, not only for technology and business students, but also for researchers and reflective practitioners. It is inspired by a Christian philosophy but should be more than acceptable to non-Christians of all kinds, because of the wide range of technology issues it covers well.

This book provides both breadth and depth in a way that is readable and readily understandable. It provides considerable understanding of many issues and challenges that we face today, clearly explained. It is informative and comprehensive, merging philosophical thinking with practical technology development and with responsibility in society, and provides useful insight for communities of practice concerned with each. This broad view encourages philosophers and developers to be aware of responsibility, developers and media pundits to think philosophically, and philosophers and politicians to remember the realities of development.

It is able to achieve this by basing its discussion of technology on a radically different way of understanding things, which brings theory and practice together and takes meaningfulness seriously. Hence, the book helpfully addresses the issues that most deeply trouble us. This is rooted in a little-known philosophy that has Christian (Calvinistic) roots, that of Herman Dooyeweerd. It seems that each chapter is inspired by a different insight found in Dooyeweerd's thought, but seldom is Dooyeweerd thrust on the reader.

Philosophy of Technology has three parts. Part I, entitled Thinking and Making, has two chapters, which look at the phenomenon of technology from a philosophical perspective. Technology is not just something that happens but has a special meaning or role in the world, which is to disclose deeper meaningfulness for the good of the world.

Part II, entitled Making and Designing, has six chapters, each of which discusses a different aspect of design and development of technology. Chapter 3 discusses complexity that developers face; chapter 4, how technology artifacts should embody diversity in a way that coheres; chapter 5, the function and structure of artifacts; chapter 6, knowledge and the role of the engineer; chapter 7, methodology for development and design; and chapter 8, ensuring that technology does not dehumanize. These chapters will not teach us the details of, for example, computer programming, but rather they provide a perspective, a wisdom, with which computer programmers might operate.

Part III, entitled Designing and Thinking, has six chapters, which discuss technology in the world. Chapter 9 shows how technology is not just a technical but a social activity. Chapter 10 portrays pessimism and optimism about technology: will it lead to destruction and enslavement or open up bright futures? Chapter 11 discusses globalization and cultures, specifically the role technology plays in these. Chapter 12 discusses the cyborg possibility, namely, humans augmented with technology. Chapter 13 discusses responsibilities surrounding technology. The final chapter, 14, discusses expectations for the future, the "secular sacred" and the limits of technology.

The book thus covers not only the two streams of philosophy of technology mentioned by Carl Mitcham, those concerned with "humanities" and "technology in itself," but also the philosophy of technology development.

The principles and issues each chapter covers are given flesh with copious helpful examples, and four case studies are included, showing in detail how the principles in several chapters are worked out, in nanotechnology, factory design, military networks, and health care. With each chapter there is a helpful portrait of a thinker who has explored some issues relevant to the chapter, ranging from philosopher Martin Heidegger for chapter 2 on the meaning of technology, and Christian ethicist Egbert Schuurman on responsibility in chapter 13, to Herbert Simon for chapter 6 and Langdon Winner for chapter 9.

I find that each chapter can be read almost independently of the others, and this is a great help to those who like delving into a book in random order. Each chapter is inspired by one portion of Dooyeweerd's philosophy: for example, chapter 2 is inspired by Dooyeweerd's giving primacy of meaning; chapter 4, by Dooyeweerd's approach to diversity; chapter 13, by Dooyeweerd's view that normativity (good, bad) is not to be bolted on but is intrinsic to the very fabric of reality; and chapter 14, by the importance of faith.

There are, perhaps, four limitations to this book. One is that, as a translation of a Dutch work that appeared in 2007, its examples come from more than ten years ago and sometimes long before that. I found no mention of Twitter, Facebook, tablets, or computer games, and the way these are shaping people's lives today. However, for two reasons this might not matter. First, the principles and issues discussed are carefully developed to apply to today's situation, and probably tomorrow's too; for example, responsibility will never become obsolete. Second, readers might like to take the challenge of applying its principles to today's technology at several levels, either as an undergraduate exercise, as PhD research, or even as a longer-term post-doctoral research program, and, of course, to practical planning for life with technology.

The second limitation is that the text tends to hide the philosopher who seems to have inspired it (Dooyeweerd), rather than explicitly referencing his thought. The discussion of meaning in chapter 2 references Heidegger and Dilthey but actually goes beyond both by using some of Dooyeweerd's thought, though it does not name him. On the other hand, mentioning Dooyeweerd in every chapter would sound too much like adulation, so perhaps the authors have struck the right balance. More importantly, third, the work does not differentiate sufficiently between technology in general and information/communication technology (ICT) in particular. The focus is on the formative activity of shaping that lies at the root of all technology, whereas what gives ICT special importance today is the lingual activity of writing and reading, of signifying and interpreting, of information storage and selection rather than of construction. To cover this, however, would require a whole new book, and not just an extra chapter or two in this work. Perhaps that should be the authors' next project, especially if they can achieve the same breadth, depth, readability, winsomeness, and wisdom.

The fourth limitation is the book's scope. Though the work imports thought from a host of thinkers to help support and build up its view of technology, it provides little help to those who want to export ideas to those thinkers and engage critically in their discourses. By importing, it demonstrates that the Dooyeweerdian/Christian foundation on which its view is based is highly relevant to mainstream thought. But some might wish to explore exporting: how Dooyeweerdian thought can affirm, critique, and enrich the thought of Heidegger, Simon, Latour, and others. However, exporting was not its aim, so this limitation cannot be seen as a criticism. Other books will need to be written that export Dooyeweerdian or Christian thinking to engage with and enrich mainstream thought.

The book's aim is to help us understand the phenomenon that is technology, in a way that combines philosophical reflection and sound theory with practical insight. In doing this, it functions extremely well in a readable, interesting, and informative way. It provides material that students can take further. It is inspired by a Christian philosophy, but should be of equal interest to Christians and non-Christians alike; indeed, my experience is that a Dooyeweerdian foundation, as is used in this work, seems to be attractive to non-Christians more than to Christians, because it provides a way to tackle the diversity and complexity of everyday experience, and it recognizes the faith aspect alongside, rather than above or below, other more "profane" aspects of life.

At the end of his Foreword, Carl Mitcham writes,

In most cases, books are honoured by the writing of forewords. In the present instance, however, given the special achievements of this book, I am equally if not more honoured by having been invited to write.

This shows the quality of this work.

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