Review of [1]

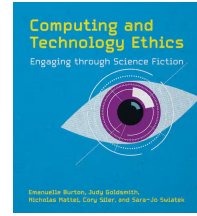# Computing and Technology Ethics:
Engaging through Science Fiction
by
**Emanuelle Burton, Judy Goldsmith, Nicholas Mattei,
Cory Siler,** and **Sara-Jo Swiatek**

The MIT Press, 2023
$85, hardcover, $36.99 electronic, 486 pages

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1 Overview

Writing a book is difficult. Writing a really good book is exceedingly difficult; and writing a perfect book is impossible. I am happy to say that, in the context of the three previous categories, *Computing and Technology Ethics: Engaging through Science Fiction* is a really good book, and the authors obviously put a tremendous amount of thought and effort into writing it.

By way of preface, for over a decade I have been wishing that someone would write a book that used short science fiction stories with ethical themes to stoke the imaginations of students and prime them for ethical discussions. Like engineering, ethics is a fundamentally imaginative activity. Envisioning the social and ethical impacts of technologies and their potential risks can range in difficulty from easy to impossible; envisioning good outcomes and how to achieve them takes imagination; and both of the above require experience as well: experience of what is possible, both good and bad, and how good and bad come about.

This matter of experience is where science fiction comes in. Science fiction stories provide us with the "experience" of what a technology might do to a society and the people within it. Related to ethics, this "virtual experience" then, hopefully, provokes within us our imagination which can perhaps analogically relate the ideas and technologies in the stories to our current or future ideas and technologies.

Whether this actually results in more imaginative students who then use that imagination to make better ethical choices, is, of course, a matter of empirical investigation, the conclusions of which (if there are any) remain unknown to me. But inspiration by science fiction stories of particular behaviors and technologies has actually been demonstrated, one recent example being Facebook/Meta's desire to create a virtual reality "metaverse" similar to that depicted in the Neal Stephenson novel *Snow Crash* [1]. In the novel, the metaverse is not a utopia (in fact, it is one desired vehicle for world domination by evil schemers), and yet Facebook/Meta was inspired enough by this to name the very thing they were doing – indeed their company itself – after the metaverse. If science fiction stories can inspire this sort of action in the real world, perhaps they might inspire better actions too.

It is within this context, then, that we come to the contents of the book.

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2   Summary of Contents

Computing and Technology Ethics is an approximately 480-page book consisting of two main parts: about 310 pages of textbook and about 160 pages of science fiction stories (the remaining pages are index, acknowledgments, internal cover pages, etc.). Part One consists of six chapters. The first is explanatory and entitled "Why Ethics? Why Science Fiction?" It is a brief chapter and answers exactly what it asks, and more, such as "Basic/Perennial Problems in Ethics" and "Life after Ethics Class." The authors thankfully prove themselves to be quite reasonable in their answers, descriptions, and explanations, which is always a relief when reading an ethics text. I was surprised that the section "How Have Recent Advances in Technology Changed the Conditions for Ethics?" did not mention Hans Jonas, whose magnum opus *The Imperative of Responsibility* is precisely on this question [2], but no critical reader is likely to find a book that says exactly what they want it to, unless they wrote it, and in any case Jonas is mentioned in other places.

The other chapters include "Ethical Frameworks," "Managing Knowledge," "Personhood and Privacy," "Technology and Society," and "Professional Ethics." I will not go into all of them in detail, but suffice it to say that there are not only the "standards" of ethics education (e.g., deontology, virtue ethics, utilitarianism, etc.), but also the main ideas from technology ethics and computing ethics, such as how to think about knowledge, the connections between knowledge, privacy, and identity, the impacts of technology on society, and the role of computing professionals in society. As one example, Chapter 6 on Professional Ethics is admirable for connecting codes of ethics (IEEE, ACM, and SECEPP) to fundamental ethical concepts (pp. 290–296).

Part Two, about a third of the book, is the anthology or "story bank" and it is a wonderful resource indeed. The explanation near the start which describes how stories are useful for teaching ethics is spot-on, and the "story points" chart on pages 320–321 is immensely useful for connecting the stories to the text. The twelve stories themselves are wonderful and thought-provoking, exactly what you would want from a collection of science fiction stories in an ethics textbook. I won't say too much about them other than that they cover a wide range of topics and the study questions for them are typically quite good. The stories also have an excellent set of study guides for instructors available on the MIT Press website.

Computing and Technology Ethics is quite good in its engagement of diversity, equity, and inclusion, considering (as just a brief selection) Ubuntu and Yoruba communitarianism (pp. 63–64), gender identity (pp. 173–175), and the risks of state power in policing and surveillance (pp. 254–256), and with excellent diversity of stories. It also has fascinating insights and anecdotes sprinkled throughout, including, for example (in just a few pages of Chapter 3), a section on the nature of wisdom (pp. 109–111), a sidebar on the relevance of information overload and decision fatigue for design (p. 115), and a discussion of Vannevar Bush's Memex (p. 117).

The good points of this book go on and on, and I can't list them all: indeed, that is what the book itself is for. So at the risk of being unfair, I will move on to the very few less-than-stellar points. But know that in the book itself the balance is nothing like in this review: overall the book is 99.9% stellar.

3   Considerations

I like this book a lot, and I would certainly use it for teaching a course on software ethics for engineers at either the undergraduate or graduate level. However, it does have a few considerations

worth noting.

One is a structural question, and not necessarily a criticism, just a wondering about a design choice on the part of the authors. The book could have been structured with the twelve stories interspersed throughout the text and then the ethical material surrounding each story, rather than with all of the stories placed at the end. This would have undoubtedly been a difficult task, making the stories drive the textbook rather than holding them as a resource at the end, but I wonder if it would have made the book overall of more readable and of more interest to students, with a science fiction story to draw the reader forward every few tens of pages. This interspersing of stories and ethical thoughts would have been a very challenging task, and certainly a course instructor could assign stories as they see fit, so this is not a critique as much as a contemplation. Additionally, Part One does have "Story Point"s throughout the text indicating points of connection to the stories. So, the authors' chosen structure might be the best compromise for a book of this nature.

Secondly, 300+ pages broken into only six chapters is demanding of the teacher and the student, forcing the teacher to break up some chapters (e.g., Chapters 2 and 5) because they are simply too long.

Third, at $85, the price of the hardcover book is fairly high. I can understand why this would be the case, given the costs of printing and the necessities of paying royalties to the short-story authors, and I do not begrudge authors receiving a just compensation for their work. But it is left to students to pay the price, so it is a consideration. Thankfully, this consideration is one which just points to the comparative inexpensiveness of the electronic version, which is only $36.99.

4   Opportunities for Improvement

Now for a few improvements I would make, were I given the task.

First, as someone who knows a bit about Thomas Aquinas' virtue ethics, I did find it a bit odd that he was only presented in the context of deontology (pp. 35–36), with natural law theory presented as merely deontological. While "law" would appear deontological and duty-based on first look, Aquinas's natural law theory is typically understood as a form of virtue ethics based on Aristotelian and Biblical sources. The confusion might be because human nature and conditions govern us, but in a way that make certain dispositions of human capacities beneficial or malefic: virtuous or vicious. The "law" in this case serves as a framework for human virtue. Aquinas is not so easily classified, though I do appreciate his presence in the book.

Second, I do have to disagree with the statement on page 319 (building from page 318) that "...there are no right answers!" when it comes to the study questions before each story, or the resolutions of "stories" in general. While the questions themselves are quite open to many answers, they certainly have wrong answers and therefore also answers that are more or less right. Rather than saying "there are no right answers," I think it would be preferable to say that there are many "right answers" possible. I understand the desire to promote discussion by saying "there are no right answers," but in the context of an ethics textbook it raises questions about the ontological status of ethical judgments and of moral relativism, which is something that an ethics textbook should present, but primarily for the sake of refuting. When someone designs a bridge, we don't say "there are no right answers." There are clearly better and worse designs, and many right answers are possible, just as many wrong answers are possible.

For engineers and technologists, the "there are no right answers" idea – even if contextualized and specified to literary criticism – in an ethics book is dangerous. For those being taught to seek

ethically right answers, suddenly telling them that right answers are not possible in the literary field – the very fields that this book is connecting – risks confusion and discouragement; perhaps so much so that they might no longer take the subject matter seriously. In ethics, we need to be able to say that better and worse answers are real. Stories – fictional or real – can have better and worse resolutions too. Fictional ones are not real, and so we can learn from them and think about how to make them better from a more clinical and creative perspective. But if these were real stories from the real world, then we should attempt to make the better resolutions come about and not the worse ones, especially if one is a technologist with the agency to be able to make such decisions.

The purpose of an ethics textbook is not only to equip the student for making their own ethical decisions but also to make clear to them that good ethical decision-making is *absolutely necessary*. Ethics is not optional. It is not a "fake" subject with no right answers (an unfortunate student belief sometimes heard, typically in the first week of the quarter). Just because ethics is difficult does not mean that it is not real, and ethical decisions can be very real in their effects, especially when dealing with powerful new technologies. The book does briefly dismiss moral relativism on page 31; however, it does not have an extensive discussion of relativism – a pernicious and pervasive ideology all-too-common among undergraduate students – which I believe is an oversight.

In sum, the book could use a section on moral relativism and more careful language about "no right answers" in literary criticism potentially causing confusion about "no right answers" in ethics.

Lastly, I have a recommendation for another resource that the authors might find to be useful for potential future editions, or in general. Jo-Ann Archibald Q'um Q'um Xiiem is a scholar of indigenous "storywork" and of the meaning that is found in stories. The edited volume *Decolonizing Research: Indigenous Storywork as Methodology* (especially the first 38 pages and chapter 13) and Archibald's 2008 book *Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit* both consider deeply the role of stories in human identity and action [3, 4]. As noted, *Computing and Technology Ethics* is quite good on diversity, equity, and inclusion, but if the authors wanted to go even deeper into the meaning and role of stories, including their cultural and ethical relevance, Archibald's thought would be an invaluable addition to their book.

5   Conclusion

Computing and Technology Ethics is a tremendous gift to the scholarly community teaching technology ethics and especially computing ethics. I used to teach a course on software ethics, and were I to do so again I would use this book. I heartily recommend it to those who teach that subject now, or related subjects.

References

[1] Neal Stephenson. *Snow Crash*. New York: Del Rey, 1992.

[2] Hans Jonas. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Chicago: University of Chicago Press, 1984.

[3] Jo-Ann Archibald Q'um Q'um Xiiem, Jenny Bol Jun Lee-Morgan, and Jason De Santolo, eds. *Decolonizing Research: Indigenous Storywork as Methodology*. London: Bloomsbury, 2019.

[4] Jo-Ann Archibald Q'um Q'um Xiiem. *Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit*. Vancouver, BC: UBC Press, 2008.