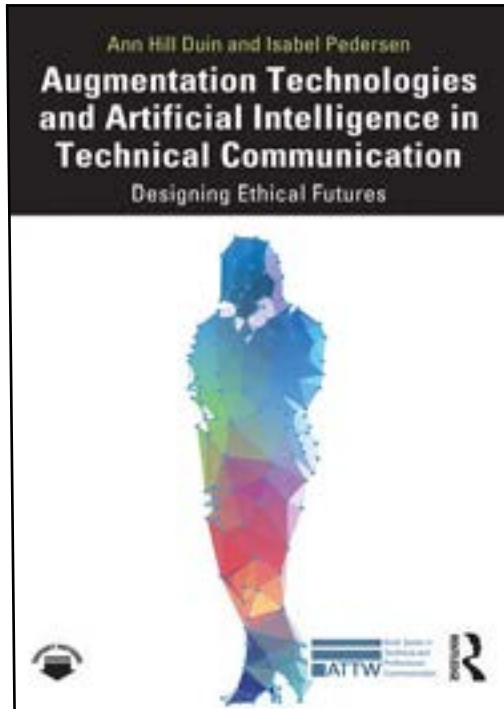


BOOK REVIEW

Book Review Editor

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Augmentation Technologies and Artificial Intelligence in Technical Communication: Designing Ethical Futures

Ann Hill Duin & Isabel Pedersen

New York, NY

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Are you aware of AlterEgo, a wearable device that enhances a user's cognitive abilities by enabling a silent internal dialogue with an AI agent? While still a research prototype, AlterEgo is one of the many technologies readers will discover through *Augmentation Technologies and Artificial Intelligence in Technical Communication: Designing Ethical Futures* by Ann Hill Duin and Isabel Pedersen. However, this book is not simply an overview of augmentation technologies, which the authors define as technologies that "influence cognitive, sensory, physical, and emotional states for the purpose of enhancement, efficiency, and automation, the level of which is increasingly impacted by fluctuating value systems, rhetorical context, and corporate hype" (p. 15). The authors' primary focus is on the role that the field of Technical and Professional Communication (TPC) will play in the ethical design, adoption, and adaptation of these technologies. As such, Duin and Pedersen take a rhetorical approach to the topic, seeking to communicate the ways in which augmentation technologies "mediate knowledge, values, and action

in professional and personal contexts” (p. 16). This approach makes the book a valuable resource for those developing and coordinating programs in the field.

Summary

The book is structured in three parts around the Designing Ethical Futures Framework, a plan for understanding augmentation technologies, building digital and AI literacies, and applying such literacies to professional and pedagogical practice. The first part of the book, “Understanding (Rhetorics of) Augmentation Technologies,” aims for reader understanding of not only the technologies themselves, but also the rhetoric surrounding them. In Chapter 1, Duin and Pedersen introduce the public discourse on augmentation technologies from various overlapping discursive spheres. For example, they point out Elon Musk’s claim that his brain-implantable AI Neuralink will solve the “problem” of humans thinking and communicating too slowly. Soon after, they highlight criticism of such technologies from organizations such as The European AI Alliance, The AI Now Institute, and The Massachusetts Institute of Technology (MIT).

Chapter 2 introduces readers to The Fabric of Digital Life, a public and collaborative online archive of over 5000 augmentation technologies which, through rich metadata fields, allows visitors to consider “the complex socio-technical tradeoffs” (p. 34) these technologies present. Visitors to The Fabric of Digital Life can search through images, videos, and articles about emergent technologies, and the repository categories its artifacts according to themes such as the persuasive intent of the artifact, the level of human-computer interaction, and the specific body part the technology enhances. As such, visitors develop a keen sense of the stakeholders, rhetorics, benefits, and concerns related to emergent technologies. Chapter 3, like Chapter 1, provides space for the authors to analyze corporate hype surrounding technologies such the fabled Metaverse, a convergence of virtual reality (VR), social media, entertainment, work, and economy. However, the primary aim in this chapter is to explore the “generative enculturation process at work” (p. 86) through such rhetoric, and to make readers aware of the redistribution of agency that occurs within “human and machine cultures” (p. 78).

The book’s second part, “Build Literacies,” begins with Chapter 4, wherein Duin and Pedersen introduce the term *AI literacy* via Long and Magerko, who define it as a set of competencies pertaining to the evaluation of and collaboration with AI in different contexts (p. 100). Two vital aspects of AI literacy for the field of Technical and Professional Communication (TPC) are Explainable AI (XAI), which helps users understand how AI works, and the continued development of Trustworthy AI, an approach to AI that evaluates fairness, lawfulness, and safety. In Chapter 5, the authors assess the socio-cultural risk inherent in augmentation technologies’ ability to monitor human behavior, offering additional grounds for the involvement of technical and professional communicators early in the design cycle. The chapter address the novel societal risk potentialized through extraction and storage of biometric data, especially for marginalized communities. It is also here in Chapter 5 where readers will develop a more complete understanding of one of the book’s most cited resources, “Principled Artificial Intelligence: Mapping Consensus in

Ethical and Rights-based Approaches to Principles for AI" (Fjeld et al, 2020).

The book's third part, "Design Ethical Futures," provides direction for the field. It begins with Chapter 6, which focuses on pedagogy. Duin and Pedersen once again use *The Fabric of Digital Life* as an example of emergent technology analysis. However, this time, they illustrate multiple ways instructors have used the archive in TPC courses for the cultivation of students' digital literacy. Chapter 7 introduces a "TPC guide to AI-human interactions" (p. 191) which practitioners can employ to adduce how a technology uses AI, how data is collected, and the possible effects that systems of emergent technology may have on professional practice. Chapter 8 ends the book by suggesting ways that technical and professional communicators might affect ethical change. These suggestions draw upon insight from "exemplary organizations working to promote ethical design of augmentation technologies" (p. 219), Michel deCerteau's distinction between strategic and tactical communication, and risk communication research. The purpose of these suggestions is to guide technical and professional communicators towards developing governance, regulation, and standardization of augmentation technologies.

A Valuable Resource

The dense coverage of subject matter is a primary reason why *Augmentation Technologies and Artificial Intelligence in Technical Communication: Designing Ethical Futures* will be welcomed by the field of TPC. Readers will find themselves well equipped to use the book as a future resource for identifying more context specific and situationally relevant conversations pertaining to AI and augmentation. One consequence of this breadth, however, is that it may take space from a more evenly distributed treatment of social justice issues that some readers may anticipate. While Duin and Pedersen's thorough attention to human rights, privacy, and corporate responsibility to users is egalitarian and benefits all communities, only in Chapter 5 were race, gender, and ability given full, focused consideration. Furthermore, the ways in which emerging technologies may harm the LGBTQ+ community was mentioned only briefly. I would have liked to have seen these concerns investigated in chapters beyond Chapter 5, where the "socio-ethical consequences" (p. 122) of new technologies were outlined. For example, Chapter 7 provides professional direction in negotiating challenges with autonomous agents, chatbots, digital employees which "mimic human behaviors" and "automate work tasks" (p. 194), and digital humans meant to "humanize AI while increasing effectiveness" (p. 202). In this chapter, the authors' do note the potential for gender and race-based discrimination made possible through the design and implementation of digital employees (p. 209). However, this chapter seems like a natural place to attend to the disproportionate harm these technologies will likely have on marginalized communities' experiences with hiring, health care, criminal justice, and financial services. These issues are mentioned throughout the book, but typically only in passing, with the exception of Chapter 5.

Yet, the book's wide coverage of various stakeholders and values is useful for creating a shared readership across both the academy and profession. By using "international, multi-stakeholder documents" (p. 124) from universities,

corporations, governments, and advocacy organizations as sources, the reader gets the impression that Duin and Pedersen strongly believe that understanding, ethically using, and monitoring emerging technologies is the job of both scholars and practitioners. The profession will likely be interested in the book's well-researched and comprehensive direction for the design, maintenance, communication about, and assessment of emergent technologies, and academics will find much useful here in terms of program development. Augmentation technologies, from ChatGPT to VR, represent the forefront of technological innovation. As such, TPC scholars will find their knowledge and skill sets to be directly applicable to the emergence and adoption of these technologies, and Duin and Pedersen take some of the guesswork out planning for this inevitable convergence.

With respect to pedagogy, the authors provide forward-thinking applications of foundational TPC theory. Chapter 6 in particular outlines how using The Fabric of Digital Life in the classroom promotes the "core skills and the identity" of TPC (p. 170) and helps students attain several essential program learning outcomes common to most TPC programs. On a personal note, I used the archive in a course titled "Discourse and Technology," taught by Dr. Jason Tham, one of the book's most cited scholars. This experience made my more recent reading of Duin and Pedersen's book quite meaningful. I feel that using *Augmentation Technologies and Artificial Intelligence in Technical Communication: Designing Ethical Futures* as a guide to exploring The Fabric archive can be a generative student learning experience, as well as a collaboration opportunity for faculty designing courses and programs.

Author Information

Joe Schicke is a third-year PhD student in Technical Communication and Rhetoric at Texas Tech University. Transitioning into the dissertation phase, Joe is investigating the ways in which musical conversations, mediated by technology, are made material in recording studios. Currently, however, Joe is researching the efficacy of alternative grading practices for undergrad composition students, and the ways that new technologies may mitigate the grade-centric focus of learning management systems. Joe is an Instructor of English at Colorado State University in Ft. Collins, Colorado, where he is also an active member of the city's local music scene.