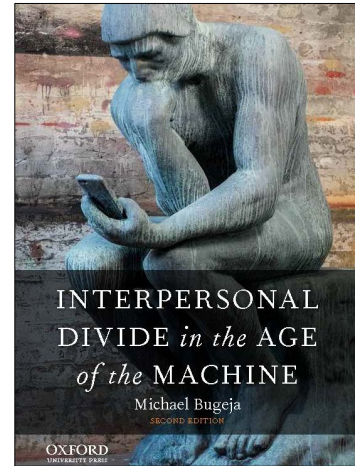Michael Bugeja, **Interpersonal Divide in the Age of the Machine (2nd Edition)**, New York, NY: Oxford University Press, 2017, 188 pp., $19.95 (paperback).

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Michael Bugeja's book, ***Interpersonal Divide in the Age of the Machine***, applies constructive criticism to formulate a framework for the digital generation, particularly millennials, to overcome emerging challenges of rapidly evolving media and technology, bridge the interpersonal divide, and maintain balanced interpersonal relationships in an automated age. Bugeja, an award-winning ethicist and widely published author, is notable in the area of media ethics research. His works, *Living Ethics* and the first edition of *Interpersonal Divide: The Search for Community in a Technological Age*, both won the prestigious Clifford G. Christians Ethics Research Award. His most recent book, this second edition of *Interpersonal Divide in the Age of the Machine*, serves as a culmination of various research projects and academic investigations concerning a brave new world associated with technological diffusion and its revolutionary impact since the 1990s (Bugeja, 2013). Along with the advent of artificial intelligence, *Interpersonal Divide in the Age of the Machine* focuses on "the social gap that develops when individuals misperceive reality because of media overconsumption and misinterpret others because of technology overuse" (p. xiii). It will likely appeal to students and scholars in a great variety of disciplines, including media studies, communication ethics, interpersonal communication, media literacy, psychology, sociology, data science, information technology, and science and technology studies.

Objective and Structure

The second edition of *Interpersonal Divide in the Age of the Machine* aims to determine whether universal principles, such as truth, nonviolence, and dignity—cornerstones of philosophy rooted in time, culture, and place change as humans shift to media overconsumption and technology overuse. Bugeja asks the following:

- *What happens to ethical norms of a society monitored every moment by the technology users access, wear, and rely on so that people no longer question the operating systems that control them?*

- *Does that fact of modern life change humane values and universal principles to such an extent that we abandon them and adopt the values and technological principles of the machine?* (p. xv)

With these questions to be explored, the book begins with a brief preface and a general introduction, and then proceeds with seven chapters. The preface and introduction explore the relevant concepts, theories, methodology, research questions, media history, and the goal of the book. Buzzwords, such as *digital divide*, *data divide*, *interpersonal divide*, *network*, *universal principles, media and technology*, *acceptance*, *community*, *ecosystem*, *consciousness and conscience*, *value system*, and *the age of machine*, are presented with an abundance of statistics or literature that makes these universal concepts and issues seem both topical and compelling. By conducting a thorough literature review, the first two sections have established a solid theoretical foundation for the following chapters and present continuities and distinctions with the first edition of *Interpersonal Divide: The Search for Community in a Technological Age*. Overall, the goal of this book lies in documenting "four-how" from an applied ethics perspective: how the generations cope with the technological change; how media changes cause deep rifts in personal and professional relationships; how the current media and technology impacts the emerging generation and society; and how the search for community harmonizes consciousness and conscience.

Specifically, the first two chapters address how technological values gradually encroached on human values with the development of media history and rise of techno-culture. Starting with a historic exploration and a revisit of McLuhan's media theories, and ending with an investigation of universal principles and value systems, this section raises important questions. For instance, "Does media saturation alter our perception of fundamental principles guiding human behavior for millennia until now?" (p. 44). This can be deemed as the central question of the book. Chapter 3, "Big Data, Little People," documents how machines overtake human interaction through a series of innovations that undermine the knowledge economy, how big data reduce the global millions of Internet users into "nudes" or little people, and how the reality erodes interpersonal relationships progressively.

Chapters 4 through 6 critically examine the effects of interpersonal divide at home, school, and work, respectively. In this segment, Bugeja discusses changes in family, relationships, values, and education as well as the expense of workplace relationships, and the absence of work-life balance. Chapter 7, "Machine versus Moral Code," ends the book with the idea of how technology has already become our "third skin," programming society according to two pervasive values: connection and disclosure. The book then concludes by giving readers a glimpse of machine society versus communities whose highest principles are truth-telling, nonviolence, and integrity, and "prophesies that those who embrace these universal principles might also be able to disengage purposefully from the machine, think critically, and sustain interpersonal relationships" (p. 17). At the end of each chapter, the book provides journal exercises that allow readers to engage with relevant issues through critical debate and discussion.

Strengths and Weaknesses

Some scholars have made similar warnings as Bugeja's. Brynjolfsson and McAfee (2014) point out that the Industrial Revolution ushered in humanity's first machine age and now comes the second machine age, in which computer and other digital advances are using human brains to understand and shape our environments. In this process, digitization definitely brings with it some thorny challenges just as the Industrial Revolution brought about pollution and risk. This argument coincides with the term *machine age* in *Interpersonal Divide in the Age of the Machine*. In this age, humans serve technology and

judge things on mechanical, artificial merits. The result is continuing estrangement between humans and machines, increasing frustration with technology proliferation, and growing stress with a technologically centered life (Norman, 2014). Further, as the human race "rushes toward 2020 and the 50 billion Internet of Things," we need to be "more thoughtful, clue-full" and "have a plan so as not to be crushed by the onslaught of device management, privacy concerns, and the avalanche of data" (Holler et al., 2014, pp. xi–xiv).

Prompted by these potential challenges, some philosophers and artificial intelligence researchers have started to explore the new field of machine ethics, giving machines ethical principles, or discovering a way to resolve the ethical dilemmas machines might encounter, which would enable them to function in an ethically responsible manner through their own ethical decision making (Anderson & Anderson, 2011). For example, James Moor (2011) discusses four possible ways in which human values could be ascribed into machines. This can be viewed as means of facing the tendency that "human values are being converted into machine ones" (p. 12), and is similar with Isaac Asimov's "Three Laws of Robotics" mentioned by Bugeja repeatedly:

- *A robot may not injure a human being or, through inaction, allow a human being to come to harm.*
- *A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.*
- *A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.* (pp. 64, 134)

Thus, we need to reverse the machine-centered point of view and turn it into a person-centered viewpoint: Technology should serve us. This is not enough, though. Humans are supposed to reflect on themselves and develop a healthy, positive interpersonal relationship with each other. Interpersonal relationships have consequences for human well-being (Lynch, 2014). Bugeja's efforts in this direction can be described as elaborate, convictive, and competent. However, there seem to be a few weaker arguments. For example, Bugeja argues that "society has changed to such extent that we no longer value privacy" (p. 99). On the contrary, the response and reaction of users and public sectors worldwide toward the massive data leak from Facebook in 2018 has proven to be one of the world's great concerns about privacy and personal data. From this perspective, the author might need to justify some of his statements or arguments, especially in plain language.

Conclusion

In plain language and jargon-free prose, Bugeja fulfills his goal to address the impact of media and technology on human communities, universal principles, cultural values, and interpersonal relationships. His creative writing style makes *Interpersonal Divide in the Age of the Machine* accessible to multidisciplinary readers who wish to explore how media and technology, particularly big data and artificial intelligence, structure our lives. The critically-reviewed literature and abundant evidence support the viewpoints, arguments, and predictions in the book in an eloquent manner. The well-designed end-of-chapter exercises are directed interactively at students who can report the results of their exercises and

experiments through discussion and debate, providing an outlet to inspire ideas, dialogue, and introspection. According to Bugeja, all of these exercises, discussions, and ideas are meant to develop people's awareness about the import of personal ethics and interpersonal communication in the digital age. Just as Mansell (2017) suggests, critical interdisciplinary engagements could influence digital policy makers "to consider alternative digital technology innovation pathways and more proactive policies that could yield a better future" (p. 4285).

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