Thomas Misa, Leonardo to the Internet: Technology and Culture from the Renaissance to the Present (Baltimore and London, The Johns Hopkins University Press, 2004), XX + 324 pp. ISBN 0-8018-7809-8

By Maria Paula Diogo*

This book by Thomas Misa presents a refreshed approach to intersections between technology and society. Unlike most of the traditional books on history of technology, Leonardo to the Internet presents to the public an account of technology as shaped by different economic and political outsets. Starting from Renaissance and ending at the dawn of the 21st century, cruising along renaissance courts, the age of commercial capitalism, the industrial revolution, the building of the technological landscape of the 19th century empires, the rise of techno-science, the agency of military circles and the globalization, Misa builds a passionate narrative of how technologies are human and social built, changing and being changed by society.

In the preface the author states very clearly that the architecture of the book serves de defense of an argument: Misa clearly disagrees on the deterministic thesis, which sees technology as independent from society though impacting on it, for good or bad. The discussion on technological determinism has been at the heart of history of technology since its beginning and continues to agitate historians, sociologists and philosophers. With a long tradition that goes back to Marx, Sombart, Ogburn, Braudel, Mumford, Marcuse, McLuhan, Elul, and Foucault the answer to the question "Does technology control us?" keeps steering the epistemological debate on technological topics.

As Misa argues, technological determinism remains quite popular and it is easily absorbed by the man in the street. Moreover this billiard-ball model, in which technology comes from outside society and acts upon it, is largely conveyed by popularization articles, mainly in newspapers, journals and TV programs, which commonly refer to the inevitability of a certain technology.

The author's goal is precisely to show, by using historical cases, that "technologies come from within society and are products of on-going social processes" (p. XI), and therefore we can, to a certain extent, choose and change them. This is a major ethical and epistemological issue that is too often ignored.

Unlike other relevant books on this topic, Misa uses a historical longue durée driven approach to make his claim and to persuade his readers. As mentioned above, he begins with the powerful courts of Renaissance Europe and their pensioners, Leonardo da Vinci, Galileo, Gutenberg. The desire for visibility and power, made this period a time for technologies directed to "warfare, city building, courtly entertainments, and dynastic displays" (p.13). Chapter 2 discusses technology during the 16th and 17th centuries' commercial expansion, centered on the Dutch case. The deep relation between technologies, such as boat building or textiles, and economic growth, nourishes a "set of wealth-creating technologies and techniques" (p.57). Chapter 3 focus on one of the most studied periods of European history, the industrial revolution, with its array of industrial technologies. Misa captures the massive changes that took place in England through the "geographies of industry" (p.59) based on three cities — London, Manchester and Sheffield — which identify three distinct industrial realities. Chapter 4 approaches the topic of technology and empires, using as main example the English Empire. Technologies of the land (railways, telegraphs, roads, harbors) were the heart of the notion of "civilizing mission", fulfilling their destiny as "instruments of Empire". (p.97), Chapter 5 tackles the rise of technoscience, highlighting the importance of "system-stabilizing industrial scientists" (p.157), who substituted the 19th century individual genius. Chapter 6 draws from Misa's research and interests on cities as a kind of "urban machines", pointing out how new industrial materials shaped the urban landscape, allowing new experiences in architecture and urban design. Chapter 7 focuses on the powerful influence of military interests in the development of 20th century technologies, ranging from high technology military funded solid-state electronics to the "means of destruction" (p.190), that is, weapons. Chapter 8 deals with globalization using the same perspective as for technology itself, i.e., analyzing it as a historically built phenomenon, with a life time which will eventually end, but that, nevertheless, influences the way "people think about technology and culture" (p.259).

The last chapter goes back to Misa's initial claim against technological determinism. It is an excellent wrap-up, covering some of the major questions that always come to the surface when dealing with the history of technology, based on the data of the previous chapters: what is technology? Which is the extent of the relationship between technology, science and economics? What is technology good for? How does technology change society?

Leonardo to the Internet addresses different publics, ranging from the academic milieu to the general interested public. It is written in an accessible way, yet precise; the narrative easily

catches the reader, but the historical information is never neglected; the author manages to keep his engagé posture when raising and discussing hot topics, but he is never biased.

As a potential textbook, Leonardo to the Internet has different levels of reading: it is a very good first introduction to history of technology, putting the production and consumption of technology in a social perspective since the beginning; it is mandatory for students already acquainted with the basics in history of technology, enabling them to thicken their approach to the multifaceted relation between technology and society.

Overall, Leonardo to the Internet: Technology and Culture from the Renaissance to the Present is a brilliant and stimulating book, easily read and yet full of ideas and arguments that will nourish the readers' spirit for a long time.

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