the advent of cybernetics, a combination of engineering, mathematics and physiology, in Britain. At the core of this movement was the "Ratio Club" in London, which laid the foundations of British robotics and brought together outstanding scientists such as William Grey Walter who invented the "free goal-seeking" tortoises "Elmer" and "Elsie" in 1948.

The last chapter of this collection of essays illuminates the development of what we perceive as humanoid robots today and our fascination with them. These robots can care, entertain, educate and nurse.

A feature of the book I enjoyed and that closes the gap between what could be seen as a collection of essays and a traditional exhibition catalogue is the "visual history" at the end of the book. This lavishly illustrated section features many of the stunning objects that can be seen in the actual exhibition.

Another feature of the book I enjoyed are the "Focus" sections which explore selected objects in more detail, such as the iconic "Automaton" lathe from c. 1740 and its reconstruction and conservation for the "Robots" exhibition. Other features that make this book an outstanding publication are its detailed index and suggested further reading.

One criterion of success for a publication accompanying an exhibition will always be how well it reflects the actual exhibition. Although structured differently, the book very well reflects the themes of the exhibition. Moreover, it provides additional and interesting context to the exhibition and thereby puts the various themes in a broader perspective. This is one of the best museum publications accompanying a current exhibition that I have seen in a long time. Well researched, written, presented and illustrated and at an affordable price this book can only be recommended – as can be a visit to the actual exhibition. If you have missed it in London, why not consider seeing it at the National Museum of Scotland, Edinburgh, where it will show from 18 January to 12 May 2019.

Klaus Staubermann, Edinburgh, Scotland

John M. Jordan, *Robots*, Cambridge, MA: The MIT Press, 2016, 272 pages, ISBN: 9780262529501, $15.95.

Short, sweet, and timely, Jordan's Robots is an exemplary introduction to robots for undergraduates or anyone interested in familiarizing themselves

with this rapidly-changing field. Jordan tells us that while he hopes roboticists will read it, the book is intended for "the rest of us." But this is not a "Robots for Dummies"-type appeal to the masses. Instead, Robots is public-oriented scholarship of the kind contemporary society needs more of: recognizing that robots are poised to transform societies around the world, Jordan believes everyone needs a grasp of the relevant issues in order to better cope with the coming changes. Hence Robots is written "to widen the circle of individuals who have a say in what robots can and should do, look like, include, and leave out."

Three aspects of the book contribute to this mission. First, despite being a physically small, nearly pocket-sized book, Robots contains a wealth of empirical data on the state of the art circa 2015. There is something for everyone in this smorgasbord; even well-worn observers of AI and robotics are likely to find new and relevant details on Autonomous Vehicles (AVs), military robotics, carebots, and robots further afield. Yet Robots does not fail to cover the basics: Vaucanson's infamous duck is included here, as are Asimov's foundational Three Laws and the classic "sense – plan – act" paradigm of robotics. Additionally, Jordan makes an effort to look beyond the Western context by discussing Japanese robotics at some length, focusing primarily on Osamu Tezuka, creator of Astro Boy, and his huge influence on post-WWII Japan's love of robots. Readers are encouraged to compare Tezuka's Ten Laws of Robotics with Asimov's Three. Though Jordan skips over other major Japanese robotic cultural icons such as Doraemon and Gundam, the trans-Pacific treatment of robots will no doubt intrigue readers familiar with anime and manga.

Second, Robots weighs the pros and the cons of robots in every context they are discussed. Jordan is an IT professional, but not a roboticist himself—and it is likely that this gave him the critical distance necessary to eschew both hype as well as dystopian doom-saying in his even-handed treatment. Moreover, he almost completely avoids the journalistic trap of breathlessly reproducing industry narratives, e.g. "These robots promise to benefit humanity!" That feature alone sets this book apart in an already crowded field. Only in the chapter on AVs does Jordan slip: he is clearly an advocate for driverless cars, and rather uncharacteristically follows the industry playbook in describing the promise they supposedly hold. That said, he does not shy from a careful consideration of the winners and losers in the AV race. In addition to the direct risks posed to truckers, limousine

and taxi drivers, Robots explores secondary and tertiary risks. For instance, this reviewer was surprised to learn that because car accidents are the most common source of donor tissue, recipients of organ donations are likely to be confronted with longer wait times as a result of safer-than-human AVs.

The third and most admirable aspect of Robots is simply that Jordan asks a lot of questions about robots. Far more questions than he can answer—but important, thought-provoking questions that few others bother raising in introductory texts, much less in voluminous technical treatises. Who is responsible? Who has a say? Where is the money? What happens when things go wrong? Where do we go from here? Page after page, chapter after chapter, Jordan encourages his readers to thoroughly interrogate these machines within a broader social, economic, and political context.

Historians will be happy to find that for such a slim volume, Robots opens with a fairly comprehensive chapter on the origin of robots. One might quibble that it neglects the deeper roots of "robots," such as the moving statues described by Plato and Aristotle, Roger Bacon's 13th century mechanical talking head, or the 17th century karakuri ningyo, Japanese automata capable of serving tea and performing on dramatic scenes. Less a fault of the book, these omissions are better seen as opportunities to supplement Robots with other historically-focused readings on a course syllabus. Yet in sum, both students of the humanities, looking to better understand the technology of robotics, and technical students, looking to understand the social issues surrounding robots, will be well-served by Robots.

Colin Garvey, Troy NY, USA

Ed Finn, *What Algorithms Want: Imagination in the Age of Computing*, Cambridge MA: The MIT Press, 2017, 258 pages, ISBN 9780262035927, $29.95.

Ed Finn's *What Algorithms Want* shows the power that algorithms have in today's world, to the point where huge companies like Google or Facebook can be considered as simply being the necessary embodiment of structures surrounding some core algorithms.

In the beginning of the book, Finn analyzes what an algorithm is, with the analysis going much deeper than conventional definitions of algorithms