David Skrbina. *The Metaphysics of Technology***.** Routledge 2015. 314 pp. $145.00 USD (Hardcover ISBN 9780415716628); $54.95 USD (Paperback ISBN 9781138240025).

The philosophy of technology is generally conceived as the philosophical investigation of the effects of technology on society and David Skrbina's book, *The Metaphysics of Technology* (MT), is an important contribution to this field. MT is divided into two sections, the first of which provides a rational and critical investigation into general metaphysics and why it is important to understand that technology has a metaphysical grounding. Using this foundation, Skrbina spends some time providing a contextual metaphysical foundation for technology and explores the metaphysical outlooks from the pre-Socratic thinkers to twentieth century metaphysicians, such as Martin Heidegger and others. The second part of the book focuses on what Skrbina calls 'Praxis.' This section 'addresses what technology does, how it functions in the actual world, and how humanity can or should respond to it' (113–14). This section is largely focused on thinkers such as Ellul, Borgmann, and Feenberg, among others, who have either failed to understand the metaphysical underpinnings of technology, or have simply missed the philosophical weight of an all-enveloping technological society.

Throughout the book, Skrbina covers the literature and history of the philosophy of technology very well. He correctly notes that most thinkers who have provided thoughtful criticism of technology have not done so from a metaphysical viewpoint, and few (with the possible exception of Martin Heidegger) have provided a metaphysical foundation for understanding technology. MT is possibly the first book-length treatise that seeks to provide a metaphysical grounding for technology.

The central metaphysical claim of MT is that technology is all-encompassing; it shapes humans and their society, is deterministic, and possesses intrinsic intentionality at the core of its being. Skrbina calls this phenomenon the 'pantechnikon.' Our present technological situation is guided by the pantechnikon, which 'is here identified as the universal process of creation, as the realization (techne) of a universal order (logos)' (119). Furthermore, the pantechnikon has suprahuman power, ability to alter and even determine social conditions, has a psychological impact on people, is fixated on energy and power, and is unstoppable (119). Skrbina makes no distinction between natural and man-made creation because all being is a product of Techne-Logos.

To build his case for the pantecknikon, Skrbina unpacks the Greek concepts of *techne* and *logos*, starting with Heraclitus, who believed, along with the early Stoics, that logos was a divine ordering principle of the cosmos. The logos embodies both material and psychic dimensions (21). For Plato and Aristotle, the connections between techne and logos are more nuanced. Techne roughly means all human activities. For Aristotle, techne refers to human creation and he makes a distinction between natural and human creative activities. On the other hand, Aristotle does connect techne with logos in both his *Nicomachean Ethics* and his *Poetics* but are still conceived as human activities. Skrbina believes that the nature of the pantecknikon was not clearly discovered by Plato or Aristotle because they did not live in a highly technological society and techne was a low-class activity of manual craftsmen, unworthy of philosophical examination (26). Nonetheless, Skrbina builds on the notions of the Stoics and Heraclitus and explains that the Heraclitean/Stoic worldview—the cosmos as a Pantechnikon—can serve as the basis for a relevant metaphysics of technology (27). In the realm of Being, all creation is techne. As Skrbina points out, 'From our biased vantage point, we see our

own creations as of a different order, but they are not. All coming-to-be is creation, and all creation is techne' (30). Technology is thus seen as a panpsychic, and pantheistic, logos that guides all reality.

With this basic understanding, Skrbina then argues for technological determinism. The argument is that as physical beings in a physical world we are subject to a wide range of forces and pressures. Technology is one of the forces of the world. On the pantechnical thesis the universal process of Techne-Logos drives evolution forward, creating order, complexity, and intelligence along the way. Like gravity, thermodynamics, and quantum physics, it is a constant of the universe—a natural law that in no sense depends upon human agency. The striving for order—the realization of the Logos—is the dominant force in nature. In the long run, order prevails in the cosmos. The universe is a pantechnikon (201–2). However, the unfolding of this deterministic pantechnikon has a two-part process, the anthropogenic and the autogenic. The first phase, the anthropogenic phase, of technological determinism began when humans learned how to control fire and make simple tools. This phase lasted until around 1200 or when the European Renaissance began in the West. The tools created in this phase served human purposes and allowed for social and cultural flourishing. The next phase of technological determinism is autogenic. This phase, which has not been fully realized yet, but will be soon, includes intelligent and self-aware computers, nanomachines, and biotech creations that will serve their own purposes, not humans. Technology will become autonomous, self-augmenting, and self-evolving. Humans will become the raw material for these machines and humanity will become the servants of technology (205–8).

Skrbina addresses some critics of technological determinism and examines the response of the position known as the social construction of technology (SCOT). Skrbina uses Joel Feenberg as a representative example of SCOT. SCOT generally holds that people are the primary sources of change in both technology and society. This perspective focuses on how technologies arise from social processes because it is ultimately humans who make the devices. In addition, this position argues that technology does not determine human action, but instead, human action shapes technology. Skrbina would claim that this position misses the entire metaphysical structure of technology and that, within the Pantechnikon, humans are a type of technology.

One perspective Skrbina does address is the Social Shaping of Technology (SST). This perspective admits to a sociotechnological symbiotic relationship. Technology and humans do in fact affect each other in both directions. Technology pushes individuals and society to behave and communicate in certain ways. However, the technological 'affordances' are often used in new and unpredictable social ways. The SST thesis realizes and takes seriously the negative effects of technology on society. It also holds that humans can learn to mitigate and control their use of technology and learn to use them in wise ways.

Both SCOT and SST find a place for the individual and social response to technology. Skrbina would reject these positions and respond, 'When we focus on the human role in technology, we miss the larger metaphysical context' (209).

It is, however, the larger human context in which technology rests and needs to be understood. Historically, the twentieth century saw both the most incredible advances in technology and some of

the greatest human destruction and violence ever recorded due to the use of technology. It is imperative that humans learn to use their technology wisely. On the other hand, society has also found amazingly positive uses of technology that connect families across continents, cure diseases, and foster communication and learning. These are deeply human traits and seem to reflect the human condition itself. In the words of one of the chief importers of European existentialism into America, William Barrett, 'We seem to carry over into technology that deepest and most vexing trait of the human condition itself: that our efforts are always ineradicably a mixture of good and evil' (*The Illusion of Technique*, 25). To ignore the human and social relationship between technology, society, and culture is a serious mistake.

Finally, Skrbina claims that Ellul, Heidegger, Borgmann and others fall into the trap of mysticism when trying to understand the effects of a technology on society. However, it is a little difficult to understand how a position that claims that a universal pantheistic Techne-Logos which drives all coming-to-be is not itself bound up in mysticism.

One of the strengths of this book is that it raises important metaphysical claims that have been forgotten or deemed impossible to answer in today's philosophical climate—in both the continental and analytical traditions. Although Skrbina frames these issues around technology and its impact on society, he raises the important metaphysical questions of free will and determinism, the nature and teleology of evolution, the question of being and becoming (the one and many), and rationality and mind, among others. For those working in the intersection of philosophy and technology, this book is helpful in at least bringing to light the important philosophical questions that somehow will not go away. It will most likely provide interesting and important class room discussion.

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