

## Technology and Society

*Technology and Society: A World History* explores the creative power of humanity from the age of stone tools to the digital revolution. It introduces technology as a series of systems that allowed us to solve real-world problems and create a global civilization. The history of technology is also the history of the intellectual and cultural place of our tools and devices. With a broad view of technology, we can see that some of the most powerful technologies such as education and government produce no physical object but have allowed us to coordinate our inventive skills and pass knowledge through the ages. Yet although all human communities depend on technology, there are unexpected consequences from its use which, as Ede shows, form a crucial part of this rich story.

**Andrew Ede** is a historian of science and technology whose research focuses on the intersection of science and technology in the twentieth century. He is the Director and founder of the Science, Technology and Society Program at the University of Alberta. Professor Ede earned his doctorate at the Institute for the History and Philosophy of Science and Technology at the University of Toronto. With Lesley B. Cormack, he is the co-author of the best-selling *A History of Science in Society*. He is a member of the Canadian Society for the History and Philosophy of Science, the History of Science Society, and the Society for the History of Technology, and was the program coordinator for the Three Societies Meeting in 2016.

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TECHNOLOGY AND SOCIETY

# A World History

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## Preface

The history of technology represents one of the most important thematic approaches to world history. It takes us from our ancient ancestors to the modern day, from stone tools and the discovery of fire to global transportation systems and supercomputers. Regardless of the vast increase in the complexity of the tools we have available to us today, our relationship with technology remains the same: We use technology to solve real-world problems.

Technology represents some of the greatest achievements of the human mind and made some of the darkest moments in history possible. Despite its importance to the study of history, there have been very few texts available for instructors and students at the undergraduate level. After many years of teaching the history of technology, in this book I provide a synthesis of various ideas and approaches to the question of technology as a key component of world history, based on the argument that technology is a system, not a collection of artifacts. Every form is imbedded in human society and requires human action to come into being, find use and in some cases be discarded. A hammer is only a hammer because it was created to do a particular thing, but both the maker and the user must have an understanding of what a hammer is for to make it useful. The hammer, by itself, is not the technology. It is the melding of the utility of the artifact and the conception of it that make a hammer an object of technology. There are also forms of technology that are not based on physical objects. Education and government are examples of these “invisible technologies.” Education is one of the most powerful technologies ever created, in part because it trains people to use technology.

The text identifies and discusses some of the pivotal moments in world history that have a technological component. It introduces a number of philosophical ideas that are important to thinking about technology, such as technological determinism and the problem of resistance to technological change.

I would like to thank my partner in everything Lesley Cormack for her help with this project. I would also like to thank my students, particularly those in the Science, Technology and Society Program, who inspired the creation of this book. In addition, the book benefited from the kind assistance of the reviewers whose encouragement and helpful suggestions improved the text.