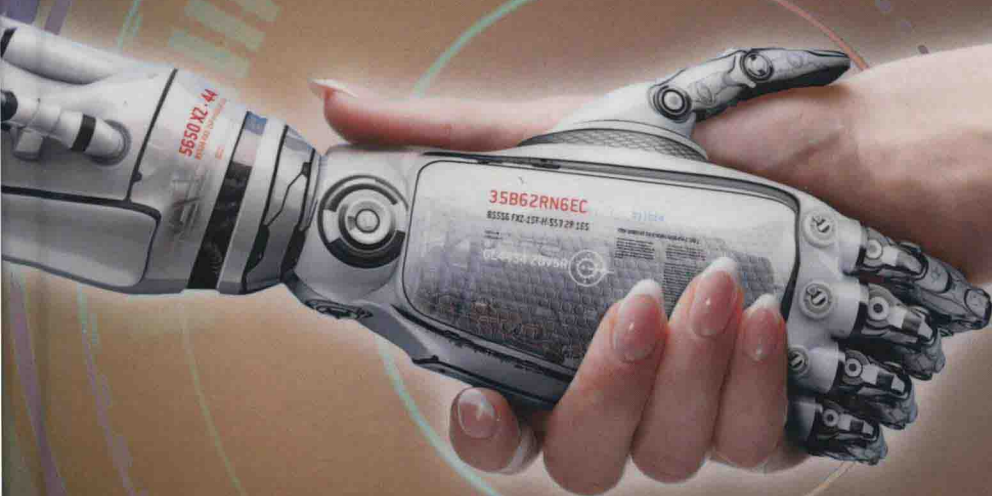


Just Ordinary Robots

Automation from Love to War



Lambèr Royakkers
Rinie van Est



CRC Press
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Foreword

American military drones fly above Afghanistan in search of terrorists. At the same moment, a robot with artificial lips plays the trumpet in a beautiful way. And in Europe, researchers are working on the development of humanoid robots that are able to wash the behinds of elderly people. Robots are thus no longer only used in factories but are also rapidly becoming an integral part of our daily lives. Think about human activities such as caring for the elderly and driving cars and also about having sex and killing people. This book illustrates that this new robotics is about literal automation from love to war. This is driven by the ultimate engineering dream: developing an autonomous and socially and morally capable machine.

Robotization, however, is not just about social humanoid robots but is especially about the rise of all kinds of robotic systems in our society. The Japanese Ministry of Economy, Trade and Industry (METI) predicts the emergence of a *neo-mechatronic society*, in which robots will routinely provide a number of services such as cleaning, guarding buildings, providing recreational facilities, and caring for the elderly. The United States foresees a development *from the Internet to robotics* and strives for a leading position in the development of co-robots: smart robotic systems that can cooperate with humans and support them with tasks in health care, agriculture, energy, defense,

and space travel. The European Commission also has a lot of enthusiasm for the future of robotics and invests heavily in it.

Robotics will make our lives more pleasant. Telecare via domotics and care robots will enable people to live independently for a longer period of time. The robotization of car mobility will make our road traffic safer. And robots will gradually take over a lot of our current dirty, dangerous, and dull work. Robots are already used for dismantling explosives and will, according to some, eventually be used in the sex industry as a technological alternative for the often humiliating conditions many prostitutes find themselves in nowadays.

The new robotics will also make things more difficult, because we are forced to think, debate, and form an opinion about the many political, ethical, philosophical, judicial, and social issues that the rapid developments in the field of robotics raise. Are we capable of capturing the innovation opportunities offered by robotics? Have we thought about how to really shape that innovation in a responsible manner? How can we create the conditions for public trust in these new technologies? When can we tell is the best time to remove the legal barriers that hamper the introduction of beneficial robotic systems.

Have we already thought about the question of if and when we are morally obliged to use robots? Do we have a moral duty to make our traffic systems as safe as possible by means of the available robotic technologies? Does the use of tele-led armed military drones increase the emotional and, therefore, moral distance between the actions of drone operators and the ethical implications of those actions? Proponents think these robots might lead to less psychological suffering among military personnel, and eventually even to more rational decisions being made. Critics are afraid of the words of a young cubicle warrior who says about his job: "It's like a videogame. It can get a little bloodthirsty. But it's frickin' cool." A core challenge is therefore to prevent the potentially dehumanizing effects of robot systems.

Just Ordinary Robots: Automation from Love to War examines the social significance of the new generation of five types of robots: the home robot, the care robot, police and private drones, the car robot, and the military robot. The starting point is that innovation is only about developing technology. The challenge is to perceive

and anticipate the chances and risks related to the new robotics in a timely way, because in the end, we humans have to decide how to shape the automation from love to war.

This book is the result of many years of research by the Rathenau Instituut, the Netherlands' key research and debating center for science, technology, and society. In 2012, this research led to the publication of the Dutch book *Overal Robots (Robots Everywhere)*, written by Lambèr Royakkers, Floortje Daemen, and Rinie van Est (2012). This book is an updated and drastically revised version of that book.

Frans Brom

Head of Technology Assessment

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The Hague, the Netherlands

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