FOREWORD

When I resigned from my commission from the military in 2007 to dedicate myself as an academic to the discourse on the ethics of military robotics, I effectively became involved in what Steven Umbrello has aptly labelled 'designing technologies for death'. What little debate existed about the ethics of military robotics at that time was rather rudimentary until Robert Sparrow published a paper that considered the ethics of the decision to send artificially intelligent robots into war by asking whom society should hold responsible when a military robot is involved in an atrocity of the sort that would normally be described as a war crime. Several possible loci of responsibility for robot war crimes were envisaged: the persons who designed or programmed the system, the commanding officer who ordered its use or the machine itself. In some respects, Sparrow, a master of philosophical argumentation, presented readers with a false dichotomy in which he sought to entangle them: accepting that we should attribute responsibility to a non-human robot or otherwise attribute blame to a human in a way that few would find morally warranted. Untangling inquisitive minds from this twisted discourse and false dichotomy is, on one level, the principal purpose of Steven Umbrello's *Designed for Death*.

It is an important task with the level of confusion having become deeply ingrained in the discourse in the fifteen years since. Fueled in part by the sorely underestimated number of civilian deaths and lack of public

oversight of military robotics use in the all-consuming US-led conflict in Afghanistan that later spread elsewhere, the literature on the military robot ethics debate started to gain significant momentum from Sparrow onward. In 2009, Peter W. Singer published the highly influential book *Wired for War* exploring how science fiction had started to play out on modern-day battlefields, with robots used more and more in war, which was followed by Armin Krishnan's *Killer Robots: Legality and Ethicality of Autonomous Weapons,* which made an argument for how existing international law could be appropriated in order to tackle the unique ethical and technological issues that emerge as a consequence of autonomous weapons. However, as a former service member, I know full well that on-the-ground experience of how the military works has no substitute. This experience has been most recently captured by Pentagon defense expert and former U.S. Army Ranger Paul Scharre's 2018 book *Army of None: Autonomous Weapons and the Future of War*. Here Scharre drew upon military history to better show how autonomous systems have been used historically in military theatres and where these trends are leading us today, as well as how humans can remain in control of their systems.

Aside from these more comprehensive monographs, there is a huge body of academic work on the topic, particularly within philosophy, military, and law journals, which have taken up the topic of autonomous weapons and have aimed to solve the most difficult ethical issues of whether or not we should even have autonomous weapons to whether systems are capable of making the necessary distinctions in order to be legal in the field. Rather comprehensive collections of eclectic chapters on autonomous weapons systems have emerged in parallel with those books and articles in order to confront these issues. In 2016, Nehal Bhuta and company edited the collection *Autonomous Weapons Systems: Law, Ethics, Policy* which explored issues like the meaning of autonomy, the role and place of dignity, and how individual responsibility can play a role in a world with autonomous weapons. I, along with my colleagues Duncan MacIntosh and Jens David Ohlin, have done the discourse some service in following up Bhuta et al's work in our recent edited collection L*ethal Autonomous Weapons: Re-Examining the Law and Ethics of Robotic Warfare*. Here we brought together all the most convincing arguments for having autonomous weapons systems in the field, how to rationalize

autonomy, and, most importantly, how to develop such systems to enhance meaningful human control.

All of these works, including my own, have contributed to the larger international debates on what we should do in a world that is becoming increasingly automated, a force that appears to be inescapable, despite my belief that it can be directed towards ends that we can ultimately control. Still, the international push for these systems to be prohibited across the board by institutions like the Campaign to Ban Killer Robots, has gained traction, despite no actual legislation of this type being agreed to, and this is exactly the issue. Often time, pushing too hard in one direction has the exact opposite consequence that one is seeking. An international treaty banning autonomous weapons systems across the board will most likely result in a treaty being signed only by those who had no intentions of designing or using such systems in the first place while those major powers who have an interest and the capability of designing and deploying these technologies will do so despite such a treaty. Such a situation would amount to nothing more than virtue signalling and indirectly permit a range of autonomous systems to be used without any form of governance. What we need is a middle path, and *Designed for Death* offers just that.

Umbrello builds on these works, but tackles the complexity of the various nuanced positions from a fresh perspective, design! What he argues here is that many of the ethical issues that emerge as a consequence of autonomous systems can be addressed when framed as design problems. This is an approach with which I sympathize greatly, given my past experience educating military cadets at the University of New South Wales at the Australian Defence Force Academy. Umbrello's appropriation of the value sensitive design approach as a way of designing technologies *for* human values is a powerful and sobering addition to this evolving debate. This is arguably the heart of this book, something that will be of interest to both designers and scholars as well as interested students looking to dig their teeth into this debate. Beyond that, however, *Designed for Death* tells a story of the complexity of modern weapons and that we need to start thinking in terms of systems so that we can get a more comprehensive picture of how things really work, particularly when we are talking about such dangerous technologies.

As I said, this book offers a commendable middle path, a compromise, which is the heart of politics. It is my hope that its approach is taken up, challenged, and, as a result, helps us to build a more safe and secure world, even one mired by the fog of war.

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