

Jeremy Packer & Joshua Reeves, *Killer Apps: War, Media, Machine*. Duke University Press, 2020. x + 270 pages. Hardcover, \$75.40, Paperback, \$26.95

Nations around the world still vividly remember the first Gulf War in 1991. During that conflict, Saddam Hussein's forces attempted to leave Kuwait City via Highway 80 only to be incinerated by the United States and its coalition forces in the process, according to David Kilcullen's *The Dragons and the Snakes* (2020). The first Gulf War illustrated what conflicts in the twenty-first century would be like. The wars of the future would be automated and computerized. Conflicts would not be taking place in some remote jungle of South East Asia or Africa. Conflicts would be taking place in major urban centers where who is friend or foe is impossible to detect. Most importantly as the Gulf War of 1991 showed, media technology was to become an integral part of the Army's arsenal in future conflicts. Media technology are those technologies that "offer different manipulations of the time/space axis, thus ushering in new political realities and military velocities through their unique capacities to select, store, and process information" (p.2).

Jeremy Packer is an Associate Professor at the University of Toronto's Institute for Communication, Culture, Information, and Technology and Joshua Reeves is an Associate Professor at Oregon State University's School of Communication and Media. In their book *Killer Apps: War, Media, Machine*, Packer and Reeves use media theory as a lens to analyze the history of warfare. According to the authors, they are concerned about the role of the media in enemy epistemology and enemy production (p. 4). This enemy epistemology is "beholden to a specific media logic—that is, a logic of sensation, perception, reason, and comprehension specific to a given medialogical environment" (p. 5). This enemy epistemology is in a constant state of flux, not only locally but also internationally, as the media are constantly producing new enemies and new methods of enemy identification stimulate the development of new weapons

technologies designed to kill those newly identified enemies (p. 7). Within this realm of enemy epistemology development, artificial intelligence (AI) will play an important role. Lethal Autonomous Weapon Systems (LAWS) are a special class of weapons systems that, once activated, can identify and engage a target without further human intervention. Semi-autonomous weapons are currently in use today, but the transfer of the decision to kill to machines inevitably raises novel ethical, legal, and political concerns. Leading nations like the United States, the United Kingdom, France, Germany, China, and Russia are currently researching novel AI applications for the purpose of maintaining an asymmetric advantage over adversaries.

Packer and Reeves offer a media-centric analysis of the rise of automated killing machines. The rise of automated killing machines, popularly known as “killer bots,” raises several ethical, legal, political, and security concerns for military leaders. Automation has been a boon to all segments of society. It has not only made lives easier, but it has also paved the way for technological revolutions in both the public and private sectors. Benefits in progress related to automation are numerous. From a national security perspective, classically automated non-lethal systems have already had profound effects on the way the U.S. conducts war. According to Packer and Reeves, media escalation, which has always driven military strategy, has now given us a situation in which international military competition requires the abandonment of human personnel in favor of automated weapons systems, armed robots, drones, and artificially intelligence C4I apparatus (Command, Control, Communications, Computers, and Information) (p. 26). The whole assumption of this media escalation is to make sense of who the enemy is and how to defeat it.

The advancement of this media-centric technology has had both a positive and negative impact on how senior military commanders conduct battles during this “military technical

revolution” (p. 53). Automation serves as a force-multiplier effect since a machine’s ability to conduct basic tasks such as product assembly, material handling, and palletization, does not required the human in the loop. Yes, a machine cannot truly think for itself without the human aspects of cybersecurity involvement. Yet, as Packer and Reeves point out, “media are created to overcome human foolishness” (p. 36). In other words, the central component in military strategy is media technology. Again, media technology “are those technologies that “offer different manipulations of the time/space axis, thus ushering in new political realities and military velocities through their unique capacities to select, store, and process information” (p.2).

Will robots and artificial intelligence need a human in the loop to function properly and accurately? According to some computer scientists and computational biologists the answer is maybe but not in the future since automated machines will be able to develop its own genetic algorithms (p. 98). During this process, according to computational biologist Christoph Adami, “robots gradually eliminated those characteristics that led to inefficiency or error, while they passed along and honed those traits that better equipped them to carry out their primary programmed function” (p. 98).

Packer and Reeves, in their final analysis, argue that war is the condition of media escalation. Media technology propels competition between military powers in order that it may evolve. The book is tour de force regarding the rise of automation in warfare. I recommend *Killer Apps: War, Media, Machine* to anyone interested in media and technology studies as well as political science and international security studies. As U.S. Air Force Major General Robert H. Latiff, wrote in his book *Future War: Preparing for the New Global Battlefield*. (2017), “the modern milieu is a toxic brew of global instability, economic upheaval, political polarization, and rapid *technological change* on a scale not seen in several generations, perhaps ever.” In

conclusion, we cannot ignore the advancement of automation in warfare. It is on our door step and at our front lines.

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