Researchers question if banning of 'killer robots' actually will stop robots from killing

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By looking at killer robots we are forced to address questions that are set to define the coming age of automation, artificial intelligence and robotics, says Tero Karppi. Credit: University at Buffalo

A University at Buffalo research team has published a paper that implies that the rush to ban and demonize autonomous weapons or "killer

robots" may be a temporary solution, but the actual problem is that society is entering into a situation where systems like these have and will become possible.

Killer robots are at the center of classic stories told in films such as "The Terminator" and the original Star Trek television series' "The Doomsday Machine," yet the idea of fully autonomous weapons acting independently of any human agency is not the exclusive license of science fiction writers.

Killer robots have a Pentagon budget line and a group of non-governmental organizations, including Human Rights Watch, is already working collectively to stop their development.

Governance and control of systems like killer robots needs to go beyond the end products.

"We have to deconstruct the term 'killer robot' into smaller cultural techniques," says Tero Karppi, assistant professor of media study, whose paper with Marc Böhlen, UB professor of media study, and Yvette Granta, a graduate student at the university, appears in the International Journal of Cultural Studies.

"We need to go back and look at the history of machine learning, pattern recognition and predictive modeling, and how these things are conceived," says Karppi, an expert in critical platform and software studies whose interests include automation, artificial intelligence and how these systems fail. "What are the principles and ideologies of building an automated system? What can it do?"

By looking at killer robots we are forced to address questions that are set to define the coming age of automation, artificial intelligence and robotics, he says.

"Are humans better than robots to make decisions? If not, then what separates humans from robots? When we are defining what robots are and what they do we also define what it means to be a human in this culture and this society," Karppi says.

Cultural techniques are principles that lead into technical developments. Originally related to agriculture, cultural techniques were once about cultivation and the processes, labors and actions necessary to render land productive and habitable.

In media theory, however, the cultural-techniques approach is interested in various working parts and multiple evolutionary chains of thought, technology, imagination and knowledge production, and how these practices turn into actual systems, products and concepts. Cultural techniques provide insight into the process of becoming: How we got to now.

"Cultural techniques create distinctions in the world," says Karppi. "Previously humans have had the agency on the battlefield to pull the trigger, but what happens when this agency is given to a robot and because of its complexity we can't even trace why particular decisions are made in particular situations?"

Any talk of killer robots sounds at first to be an exercise in fantasy, but agencies are already both working to build and trying to prevent the building of their operative foundation.

The Pentagon allocated $18 billion of its latest budget to develop systems and technologies that could form the basis of fully autonomous weapons, instruments that independently seek, identify and attack enemy combatants or targets, according to The New York Times.

A diplomatic strike in this potential theater of machine warfare came in

2012 when a group of NGOs formed "The Campaign to Stop Killer Robots," charged with banning the development of such weapons.

But Karppi and his fellow authors argue in their paper "that there is a need to reconsider the composition of the actual threat."

"Consider how both software and ethical systems operate on certain rules," says Karppi. "Can we take the ethical rule-based system and code that into the software? Whose ethics do we choose? What does the software allow us to do?"

Self-driving cars operate based on the rules of the road: when to stop, turn, yield or proceed. But autonomous weapons need to distinguish between friend and foe and, perhaps most importantly, when one becomes the other, in the case of surrender, for instance.

"The distinctions between combatant and non-combatant, human and machine, life and death are not drawn by a robot," write the authors. "While it may be the robot that pulls the trigger, the actual operation of pulling is a consequence of a vast chain of operations, processes and calculations."

Karppi says it's necessary to unpack two different elements in the case of killer robots.

"We shouldn't focus on what is technologically possible," he says. "But rather the ideological, cultural and political motivations that drive these technological developments."

Provided by University at Buffalo