



Save Lives

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Let's go back to 2018, the year NATO started to discuss disruptive technology and the use of robot-soldiers. While the military saw advantages in the use of these new technologies to lessen the effects of the decline in recruitment, the political level was rightfully concerned about the political and ethical implications. While the politicians tried to make sense, most nations were developing national applications and gaining experience with the use of these new possibilities. After a lots of meetings at all levels supported by simulated experimentations, it became clear that the modified 'Three plus one Laws of Robotics' devised by the science fiction author Isaac Asimov were not adequate for fighting robots¹. Although this and other sets like the 'Ten Principles of Robot Law' formulated by Osamu Tezuka were not fit for this new kind of warfighting, they formed a pretty good starting point. Reaching a consensus on the right set of rules was not easy, but months of hard work and lots of behind the scene negotiations, resulted in a set no nation objected too.

Listing up all rules would be too cumbersome, but one was particular important, although it was the last one added to the list: 'Save lives'. The use of robots should result in less destruction of human lives than would be the result of direct human interaction; in short they should save lives. In every situation wherein a robot, or a collective of robots for that matter, had to choose between different potential actions to execute its mission, saving lives should be the final guiding rule. A rule all could agree on and support.

The dissemination of the agreed on set stimulated the development of robot-soldiers because the decline in the availability of the human version in the Western world continued. At first, the robots were under human control making the human-robot interface the technological challenge, but little by little the level of decision-making by artificial intelligence based technology was increasing. Swarming was no longer limited to small machines but also introduced to a collection of Unmanned Fighting Vehicles.

Whatever the enthusiasm for those robots might have been, its deterrence effect was the most important outcome. Although the smaller, specialized robots were used all over the world by all involved in conflicts, the bigger ones were not yet within the realm of smaller organizations and the nations that had them were very reluctant to use put them in use. There were too many unknowns.

¹ The Three Laws, quoted as being from the "Handbook of Robotics, 56th Edition, 2058 A.D.", are:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

Asimov also added a fourth, or zeroth law, to precede the others:

0. A robot may not harm humanity, or, by inaction, allow humanity to come to harm.

One of those was the fear for bugs and their unintended consequences. Millions of human and machine produced lines of code and the mystery of the way how Artificial Intelligence really worked, resulted in withholding from direct confrontation between the big powers. There was a high noon stand-off situation whereby nobody wanted to shoot first. They had no idea on how the other side's robots would act in a mixed human-technology environment. In a kind of unspoken understanding, nations deployed these machines to regions where that kind of interaction on the battlefield would be minimal: inhospitable regions with little local human activity where guarding the other side became the boring job of human and robot-soldiers. Afraid of the unpredictability of the other side's reaction in case of an intrusion, these borders remained calm and much safer than those lines surveyed by humans alone.

By 2025, the fear for bugs had spurred the science of self-improving software to competitive, high-performance levels. All sides started producing and deploying the first generation of soldier-robots with this kind of software. By swarming up this new generation robots, the collective was able to improve at the speed of light. Improved tactics by one element was instantaneously copied and implemented in all members of the network. Fixing bugs was only the first step, collective learning and flash application of lessons learned, on impossible human dream, became reality with robots.

The number of scholars warning for the possible outbreak of an uncontrollable all-robot war was growing. Without knowing for sure that the rule was hard-wired in all robots, NATO members, partners and even potential adversaries contradicted those pessimists with 'save lives'. Pointing to the safety and importance of the frontiers, politicians convinced their populations of the necessity to deploy the new generation.

A few months ago, on July 21st the Afghan incident with an operational employment of a prototype silenced even the most vivid critics. During a patrol the prototype, called 'George' by the members of the platoon wherein the robot was integrated, sacrificed himself, after first stopping the armored vehicle directly following him, by placing himself as a shield to fend off an incoming missile. Investigation concluded that the missile fired from a terrorist hideout would have hit the platoon leader's vehicle if it was not stopped by George and missing the car it was heading towards a house occupied by an Afghan family. George's AI had concluded that instead of going for the terrorist stopping the platoon commander's vehicle and protecting the family house would save lives, not only at that exact moment but also in the long run. A sacrifice made based on the 'save lives' rule. It was a high moment of robot ethics and it didn't take long for George to become the first robotic war hero. A media opportunity brilliantly used by politicians and military alike to deafen all critics. If an isolated prototype did such heroic acts, how positive would be the outcome from a swarmed collection of the new generation of robots?

December 15th, 2025 an incident between a Chinese and an American men of war ends in crippling damages to both ships. As a precaution the two nations and their allies deploy huge fleets in the Aziatic region. The fleets are still performing their dance of death.

Three days later, a Russian robotic submarine comes too close to the only British carrier and after a daylong hunt is sunk by a killer drone. The Russians claim that a bug caused the dangerous behavior of

their unmanned underwater vehicle, but the British convince their NATO allies that this was an intended breach of protocol by the other side to test their defense systems. They also have proof that the submarine self-detonated just before the impact of the killer drone ensuring that there was nothing left to investigate.

On December 20th a NATO patrol gets lost in a terrible ice storm on the Northern border. They end up in the zone between the two guarded lines. Thinking the other side is testing their defensive posture, the Russian commander engages his robot-soldiers. Soon the patrol is in dire straits. Not sure which way is towards safety they call in for help. Ammunition sinking to dangerous levels they need help soon. Within a few minutes the first deadly wounded soldier is a fact.

It doesn't take long for the NATO commander to understand that doing nothing is not an option. Having no experience with a full robotic response, he decides to engage with a mixed team. Having pinpointed the place of the high pitched battle, the quick response team hurries towards their brothers in arms. The extreme weather conditions make it a hard job, but they are able to reach and help the lost patrol. The platoon commander decides to use his robots as a first line of defense providing cover for his soldiers to retreat. The tactic seems to work. For a while.

The NATO troops are in full retreat, their robots doing their best to fend off the Russian technological counterparts. They also form the first line, the first line of attack. Robot against robot. Suddenly, the Russians robots change tactics and start circumventing the defensive posture of their enemies and killing them off one by one.

The platoon leader observes this change and assesses the situation as extremely dangerous. At this rate he will not have time enough to reach safety and the Russian robots are stepping up the pace. He sends an urgent message to the Battalion commander to do something, now. In the command post they are fully aware of the situation through the real-time battle management system.

"Why are we losing robots?" wonders the commander.

"Our robots are not interconnected like the other side. You saw the sudden change in Russian tactics. I guess that in the beginning their robots weren't interconnected either and that they have just changed that because they don't like to lose. From that moment on their robots learned as a collective," the operator answers.

"Why are our robots not learning faster than that Russian junk?"

"As a safety precaution they are not interconnected and thus slower, but you have the authority to override that, sir," explains the robots expert.

"Sir, the platoon commander is again requesting immediate action because he's losing men and robots," intervenes the tactical advisor.

"Do it," orders the commander after a quick mental assessment of the combat situation. He is not willing to risk more human soldiers to cold fighting machines. His troops may show affection towards

their human made team members and give them names, but he feels only responsible for the mission and the flesh-and-blood soldiers.

“Yes, sir. Consider it done,” is the quick answer of the operator. She had considered explaining the reasons for this specific safety measure, but appreciating the situation refrained her from doing it.

Farther away, the platoon commander senses the change in the situation. His robots start to learn at a much higher pace and he sees that they are collectively using the ever-improving tactics. They learn while fighting, and they learn fast. The Russian robots are being knocked out one by one. His first line is not retreating any longer. It starts to advance a little bit. He sees his platoon may have a chance to make it after all.

But his hopes are soon destroyed. His platoon sergeant drops deadly wounded in front of him, he realizes something is going wrong again. He yells “Something is wrong with our bots!” in his communication set.

“We see it too!” is the quick reply from the command post.

“What is going wrong,” asks the commander with his harsh voice.

It doesn’t take the operator long to come up with an answer.

“A bug is blocking the coordination between our bots slowing down their reaction,” she answers.

“Solve it!”

“I can’t, sir.”

“Why not?”

“I can, but it will take too long and the battle will be lost before I can fix it.”

“The general asks if he can be of any help,” it is the young lieutenant, the liaison officer of the higher headquarters. It is his job to inform the joint operation center and he had just done that. The commanding general appreciates the situation as grave enough to be personal involved.

“Not for the moment,” the battalion commander replies.

“Excuse me sir. We might need his help.”

“Hold on lieutenant. Explain.”

The robot expert starts to explain: “The general can give his authorization to initiate the self-repair mode. That way the robots will be able to fix the bug themselves, but ...”

“The general agrees,” confirms the liaison officer.

“Do it!”

Considering explaining the unknown territory they are on the verge of exploring while being in a real combat situation, she executes without delay the order. The software requests the authorization code and the confirmation to continue.

“Let’s hope,” she says with a prayer-like voice.

AUTO-REPAIR INITIATED reads the screen.

It doesn’t take long for the auto-repair mode to have a major effect on the battle. Within 10 minutes the Russian bots are destroyed or incapacitated. Through the eyes of a forward bot they all see the amazing results. The battle is over. Only a matter to round up the Russian soldiers or better, to let them retreat to safety. It is best for every side to be able to deny the event and to learn the lessons from this ‘did not happen’ incident.

“Oh no,” the operator speaks silently wishing that what she sees is not happening.

“What’s the problem?” asks the platoon commander via the secure radio.

The screen shows a figure labeled as “unarmed Russian soldier” moving towards a robot.

“What is he doing?” inquires her commander.

The tactical chief responds by saying: “As he’s unarmed and no danger to the mission our bots will do nothing unless the platoon commander orders them otherwise, but he’s going to help his robot. Like our soldiers they too consider them as part of their team. Leave nobody behind, you know.”

“And we have no idea how ours will react to that,” completes the robot operator.

“Can we do something about it?” wonders the commander.

“Not sure sir. The bots are in autonomous self-repair mode and as long as their mission is not over, there is nothing we can do. The only thing is to hope that ...”

The Russian soldier is by now next to his technological team member and performs some manipulations. The Russian ‘George’ comes back to life and restarts his mission. It doesn’t last long before soldier and robot are taken out. The immediate threat is eliminated but the evil is done. Soon the allied swarm concludes the mission is not over until their group is safe or all Russians, armed or not, human or robot, are neutralized. They have to ‘save lives’.

“Retreat as fast as possible,” yells the colonel through his communication sets, although he knows that his advancing robots will reach the Russian camp first. No other option at hand, he feels that the events are out of his control.

Meanwhile the next shift came in, ready to help.

“Yes, we can try it,” replies the experienced robotic expert to his female colleague. The expert on duty stands up to give space to the incoming expert.

“What’s going on?” asks the commander.

“Sir, we will try to give the bots a new mission.”

“You told me that was not possible because they are in auto mode.”

“Correct, sir, but we will use an old prototype as entry point. Although that robot can be interlinked with the others, it doesn’t have a self-repair mode. Once linked, it could theoretically change the group’s mission without the risk of being dragged into the current ‘kill to save’ mode.”

The screen shows the forward group reaching the perimeter of the camp and preparing to ‘safe lives’. His platoon is within minutes of safety, but his robots can make undeniable havoc in a very short span of time. He really doesn’t like that all depends on a theoretical possibility. He has no other option can to watch and hope.

“Here we go,” yells the old chief while pressing the enter button.

“Let’s hope,” the younger one answers.

“Let’s hope,” concludes the commander.