7. **Killer Robots**

The military is moving toward automated killing machines. The reasons for this move are numerous. Most obviously, any dangerous mission that could be carried out by an automated killing machine would reduce the risk to US soldiers. The so-called fog of war leads to poor decisions on the part of human soldiers. Fear, anger, resentment, exhaustion, and countless other physical and psychological factors may lead soldiers to make poor judgments or violate ethical standards and whatever established rules of engagement there may be.

One nagging concern, however, is the possibility that one of these machines may be captured and turned into a device of terrorism. Before active deployment, reasonable failsafe mechanisms must be in place. Here is a not-so-distant future scenario.

At the top level, a committee of military and civilian leaders agreed that the best defense against capture would be to design robots that would self-destruct in the event that they are disabled in a combat situation. Self-destruction would carry its own costs, as the robot could harm or kill US military personnel should it fall in combat near human soldiers. So, the instruction to self-destruct would not take effect if it recognized the near presence of friendly combatants. Details were left to the programmers. Military advisers recommended a delayed detonation strategy. They suggested that rather than immediately self-destruct, the disabled robot should be programmed to "play dead" until approached by enemy combatants, and only then explode with much damage to any nearby humans. In a close vote, the committee accepted the military recommendation. Details, again, would be left to the programmers.

During the analysis phase of development, the programmers isolated a number of perceptual cues that would allow the robot, even when severely damaged, to effectively distinguish between US soldiers, enemy combatants, and all others. The sequence leading to delayed detonation would only activate in the presence of enemy combatants. They also established a set of conditions that would determine if the robot had suffered damage in combat or as a result of an ambush. Self-detonation could only occur after combat or after an ambush.

The programmers did a thorough job of analysis lest an error in their AI (artificial intelligence) be responsible for the death of US soldiers or of innocent civilians. Nevertheless, the programmers were not soldiers themselves, and had never seen field combat at close range. Therefore, their analysis was based on imagination and interviews with combat soldiers. While they took great care in the analysis stage, they found themselves running behind schedule at the testing stage. Their managers began applying more and more pressure on them to meet the delivery deadline, and so the last line of test and bug fixes was rushed.

The robots proved highly effective in battle. After cautious and limited deployments, careful analysis of results, and subsequent adjustments to the AI, killer robots became less of a novelty to be treated warily, and more of an accepted tool for clearing out enemy nests embedded in urban settings. While there were occasional incidents of friendly fire or of minor collateral damage, the overall results were a clear improvement over similar errors in human judgment. On March 12, 2015, Commander Ralph Calley sent his robot-assisted squad to clear out a nest of insurgents embedded in a neighborhood. The troops walked into an ambush.

All the human soldiers were killed and the robot was severely damaged. All but two of the insurgents were also killed, and those two were injured and fell unconscious nearby. As programmed, the robot fell to the ground and lapsed into the state its programmers had termed "lethal hibernation." Within an hour, a crowd of curious civilians and children gathered around the still scene. The resulting massacre claimed the lives of one hundred and thirty eight innocent people.