

A Commander's View on Lethal Autonomous Weapons

- Interview with Major General Mike Smith (Ret.)

John Rodsted: Welcome to SafeGround, the small organisation with big ideas working in disarmament, human security, climate change and refugees. I'm John Rodsted

Thank you for tuning in to our series Stay in Command where we talk about lethal autonomous weapons, the Australian context and why we must not delegate decision making from humans to machines.

[00:00:25] And today we're speaking with Mike Smith as part of the 'Stay in Command' series. 'Stay in Command', explores the issues surrounding the development of lethal autonomous weapons and artificial intelligence. The mechanics, ethics, and application of this new technology paints, a disturbing picture of a world where machines decide, who will live and who will die.

Mike spent 34 years in the Australian Army and retired a Major General. He graduated from the Royal Military College Duntroon in 1971 as Dux of his year and has had a distinguished military career as an infantry officer commanding all levels from Platoon to Brigade Commander.

He served as Australia's Defence Advisor in Cambodia in 1994. And throughout 1999 was Director General for East Timor. He was then appointed as the First Deputy Force Commander of the United Nations' Transitional Administration in East Timor (UNTAET) in 2000 and 2001. In recognition of this, he was promoted to an Officer in the Order of Australia.

After the army Mike became the CEO of the Australian refugee agency Austcare from 2002 until 2008. He then became the founding Executive Director of the Australian Government's Civil-Military Center from 2008 until late 2011. He then served with the United Nations Support Mission in Libya for 12 months as the Director of Security Sector Reform. He's the immediate Past President of the United Nations Association of Australia and is the current Chair of the Gallipoli Scholarship Fund and a Non-Executive Director of the Institute for Economics and Peace.

Mike holds a master's degree in International Relations from the Australian National University, a Bachelor of Arts in History from the University of New South Wales, and is a Fellow of the Australian College of Defence and Strategic Studies. He's also a graduate of the Cranlana Leadership Program and the Company Director's Course of the University of New England.

Today we'll talk about leadership, both civilian and military, and the complexities of command responsibility in regards to lethal autonomous weapons. Welcome to SafeGround Mike Smith.

Mike Smith: [00:02:28] John Rodsted! Lovely to be here with you.

"The Buck Stops Here" [00:02:31]**John Rodsted:** [00:02:31] Mike, 'The buck stops here'. This was a sign that sat on president Harry S. Truman's desk. Someone, at a level, a high level is ultimately responsible and here he is in front of you. What do you see the role and responsibility of a commander is?

Mike Smith: [00:02:46] Well, books have been written about this, John, and, let me try and be as succinct as I can. Basically a good commander needs to demonstrate leadership. And in doing that, they need to make sure that what they do is always legal. That's always a good start because if a commander doesn't abide by the laws and in particular, in conflict, the laws of armed conflict, then they are perpetrating crimes or potentially perpetrating crimes against humanity.

So a good leader needs to provide fearless advice to his or her superiors. And at the same time, a good leader needs to set the example and to motivate their subordinates - both by his or her actions and by doing the right thing. But a commander needs to do a few other things than having those personal traits that we all know about.

A good commander must provide the proper training. And acquire the resources necessary for their men and women to do the job that they are set to do. And a good commander must always know the capabilities of those under his or her command. I found, personally, that one of the best traits of a good commander is the ability to be a good listener and to always encourage subordinates to honestly tell you what they think. A poor commander only ever wants 'yes-men and women'. A good commander wants to hear different points of view.

John Rodsted: [00:04:35] So a really key point to that is that you've got empathy. You've got empathy with the people that are within your command. You can see it from their perspective.

Mike Smith: [00:04:45] I think empathy and respect are key to being a good commander. And of course not, everybody will always agree with a commander's decision, but if everyone respects the commander, they say, well, I didn't agree with it, but I respect it. And I trust the commander that what that commander is telling us to do is the right thing to do.

Legal Framework for Commanding in Conflict [00:05:10]**John**

Rodsted: [00:05:10] I guess that brings you when you're a military commander it's a complicated environment. That you're, you know, you're in an operational role. You're in a dangerous environment, and as you said, you've got to operate legally. You need to have the respect of the people under you. If you're operating, say in a combative environment, you're making decisions that can be life and death for your own troops, but also for civilians, prisoners, refugees, opposition, combatants, and all of them within the legal framework.

So, can you guide me through a little bit more about how the decision making would take shape under these conditions and how you'd have to adapt?

Mike Smith: [00:05:48] Well, I think the most important thing is that if you have good doctrine, then everybody understands what the right and the wrong is and how to do things.

And a good commander, always ensures that people understand what the doctrine is and that they abide by it. And good commanders are always inventive, and they use their initiative and they encourage their subordinates to use their initiative. In fact, they expect them to. But to do so lawfully all the time, within the rules and regulations, not to go outside of them.

John Rodsted: [00:06:28] But I suppose then if you get into, a life and death situation, as in combat, is it almost an oxymoron to think that wars have limits because the business of fighting a war is achieving your objectives and people are going to get killed as part of that and staying within a legal framework, does that not get stretched or, how do you see that?

Mike Smith: [00:06:49] Well, of course, it gets stretched. It can get stretched, but a lot of work has gone into the laws of armed conflict, into international humanitarian law. So there are boundaries. Now there will always be grey areas. There's no question about that because, in the heat of battle, instantaneous decisions have to be made. But, generally speaking, I think that it has to stay within those limits. And there might be some mistakes made, but if those mistakes are war crimes, if they are targeting innocent civilians, those sorts of things, then a commander must be held accountable and responsible for breaking those laws of armed conflict.

John Rodsted: [00:07:35] So staying within what is a legal framework is an essential part of being a military commander, achieving your goals, but staying within the legal framework, that is your umbrella?

Mike Smith: [00:07:45] Absolutely. And to go outside that means that you're just really acting like a terrorist, aren't you? You don't abide by the laws of armed conflict. So, some people sometimes say 'that's like fighting with one hand tied behind your back'. But I've never subscribed to that view because, if you - a soldier, a sailor, or an airman - and you are representing your state, you abide by the rules of your nation- state. And in Australia's case, we abide by the laws of armed conflict and they are irrefutable.

John Rodsted: [00:08:23] That brings us to the point that what you're provisioned with to achieve your goals, what is in your arsenal, what is available to an Air Force, a Navy, an Army, et cetera, become tools that are legally acceptable to that nation for their commanders to use in the field. Would that be sort of correct?

Mike Smith: [00:08:41] Yeah, absolutely. Absolutely. And the whole nature of warfare is that it's a constantly changing way that combat occurs, largely because of technology.

John Rodsted: [00:08:54] Hmm.

Introducing Lethal Autonomous Weapons to the battlefields

[00:08:54] Historically there's been times when weapons systems have been acceptable within a military framework and have got somewhat out of control. And I imagine a couple of the good examples would be the use of anti-personnel landmines, cluster munitions, and the elephant always in the room would be nuclear.

And they've all been addressed with international treaties that have brought about their removal and restriction. I imagine at the time when they were employed they were all legal, but then the flavour of, the national humanitarian law and international treaties turned against those.

Then things become a suppose, a little bit more complicated when you have to look in hindsight at a weapon system that's been removed, but it doesn't change things in the field at the time. So there are weapons that have been used, and then have become unacceptable internationally and treaties have been formed to deal with those. Land mines, cluster bombs, nuclear weapons would be some of those. I guess there's another series of weapons that have also been dealt with by treaties. One would be poisoned gas after world war one. The other weapons system that was beaten before it was used in combat was blinding laser weapons, and the protocol was created in 1995 in the CCW . So that was a good example of beating a weapons system before it was deployed. It sort of brings us to the thorny issue that's on the table at the moment, which is about lethal autonomous weapons or 'killer robots'.

There's quite a bit of international research and development in the various forms of these systems. Here I need to draw the important division between killer robots and drones, as systems are now, drones have an operator who makes the final decision to strike or not to strike . With killer robots the machine makes the final decision and the choice to kill. The machine is in command with no human in that loop.

Mike, from your command perspective, how would you feel about handing over the role of decision-maker to kill or not to kill the one machine?

Mike Smith: [00:10:53] Well, I feel very uncomfortable about it. And of course, the distinction you make between lethal autonomous weapons and drones, and not only drones but a whole range of weapons systems that use artificial intelligence. You're quite right in saying the difference is that the decision is made by a robot - by an algorithm - and the other is made by a human. And the difficulty is that's happening with lethal autonomous weapons, as I see it, is that this distinction is becoming increasingly blurred. It's becoming a really grey area. So that for example, there are autonomous weapons systems that are lethal, which even Australia has. And I'm thinking here about, anti-missile defence systems onboard ships, and that sort of thing, that just come into play automatically if the ship, or if an area, is threatened. These, I think can be justified in the sense that they are not targeting humans. They are really defending against an incoming missile or an incoming threat which is itself not human.

But then we get to the situation that we say, well, if that can happen in that situation, why don't we program these weapons so that we don't have to be there at all? And they become offensive. And that they attack humans. And that's where I think the line has to be drawn. So I guess in terms of lethal autonomous weapons, I see that a human being must be responsible for targeting and must be held accountable should things go wrong, and humans be killed, as a consequence of their use. When I say, humans I'm talking about non-combatants.

John Rodsted: [00:12:49] So trying to limit the destruction to the combatants on a battlefield and keeping the civilians out of that equation, if at all possible?

Mike Smith: [00:12:56] Yeah, absolutely. And saying that there are limits to the extent to which we will allow machines to make the decision to make a strike.

John Rodsted: [00:13:09] If there was a movement towards a deployment use of lethal autonomous weapons within militaries of the world, do you think that could become a bit of a slippery slope, which would reduce the threshold to go to war, which would make it easier for governments or militaries to choose to go for a conflict, as opposed to trying to preserve life on their own side? Do you think the presence of autonomous weapons would do that?

Mike Smith: [00:13:34] They could. I think that we're entering uncharted waters here. It's a little bit like when poison gas was used on the battlefield because it existed. It was only when people saw the consequences of it that they said, 'Hey, this is just too much. We've got to ban it.' And they did successfully. When I look at things like that, I have great hope; the same as you know, after all of those landmines were used and they caused havoc they were then banned. Cluster munitions is another one where I think that some progress has been made, but not as much as I would like to see. So lethal autonomous weapons are very much in that category, where there needs to be limits on how they can be used. And this is why I really hope that Australia plays a big role in the United Nations, in the CCW Convention, in trying to define those roles.

One thing is clear, John, and that is that technology is not going to stop. These things are going to keep being invented. Algorithms are going to be done. And, I just read the other day that, a robotic F 16, defeated a human- flown F 16 aircraft five times in a row. So, machines can definitely do this stuff. There's no question about it, but it's what is the purpose of those machines?

Now, does that make it a slippery slope to go into conflict? Because you've got these? I would like to think that it would be more about, well, how this enables us to defend ourselves better. This enables us to deter conflict better, to prevent atrocities occurring because it can be done accountably. But it comes down to what control we will keep over the use of these autonomous weapons systems.

John Rodsted: [00:15:37] And what you're really saying is at some point there needs to be a human in the loop that can override what the machine is doing so it still has some form of meaningful human control?

Mike Smith: [00:15:47] Yeah. You can't take a robot to the International Criminal Court can you? So a human being has to be responsible at all times. That's what makes the human race what we are. We have to be accountable for our actions, and by just creating machines to go and do this sort of thing for us is hardly an excuse for atrocities even when they occur.

The Nature of Wars [00:16:12] **John Rodsted:** [00:16:12] I read that same report about the F16 simulator in dogfights with a manned aircraft. And one of the things that struck me was the F16 robotic would go on a head-on attack to the other aircraft and

close within 100 meters, which is effectively suicidal. And from the top gun school were saying you would never close in a head-on attack like that because the chances of surviving are fairly slim.

It brings into the issue of machines are prepared to be suicidal because they just a machine, where humans still wish to preserve their own life or generally do. So that certainly puts an advantage towards the machine. Doesn't it? If it's prepared to be destroyed in the execution of its role?

Mike Smith: [00:16:55] Oh, totally. And of course, it's a lot cheaper. Now, of course, there have been many precedents where humans have been prepared to go into suicide type missions and not cared about their own safety. But if armies, navies and air forces were encouraging their humans to do that, then those armies, navies and air forces wouldn't last very long would they? So, if you can send machines in to do it and They cheap, you can say, 'well, that's all right, we'll just make more machines.' And this is when I think it becomes extremely dangerous. Particularly if those machines are going in to kill human beings, not other machines.

John Rodsted: [00:17:38] And it takes us into that world of sort of asymmetric warfare, where you let's take the scenario of a large powerful, industrial nation has got the ability to build lots of these weapons and stockpile through the years of peace. And simply through the might of money, be able to swarm and overpower their opposition.

Then it becomes the right and wrong rests in the hands of wealth, as opposed to in any ideological issue. So that would just turn the situation into I suppose capitalism wins?

Mike Smith: [00:18:12] I don't quite see it that way, because technology is transforming at such a rapid rate, that there's no point in stockpiling weapons because they'll become redundant. And in terms of it being asymmetric, the big guy doesn't always win. Asymmetric warfare is certainly not new. And I can't remember the big guys winning in Vietnam. I can't remember the big guys winning in Afghanistan, and there've been several big guys! And I can't remember the big guys winning in Timor-Leste against the fledgling little guerrilla movement. So asymmetric warfare doesn't necessarily mean victory to the richest and most powerful countries.

But I see where you're going with it in terms of, if you can create more of these sophisticated machines and have them do your bidding for you then that could encourage you to go to conflict. I'm more hopeful. We can't stop technology. Nobody's ever managed to stop technology. So that'll keep going. They'll keep developing these systems and the vulnerability of these systems will actually be mainly in space. So, the country that can control space is more likely to have the best use of these sorts of modern weapons. But I don't know that means conflict is more likely? The trend in conflict is that it is certainly, it's more volatile, because weapons systems now are so great and what they can do. The counter-argument is, of course, that there's more precision and there's less collateral damage. But, I'm yet to be convinced on that front.

John Rodsted: [00:20:08] And I guess that takes us into the barrier for this getting out of control becomes an ethical issue. It's the ethics of, 'yes, we can create all sorts of technology' and 'we probably will', but the ethical decision of how will that be applied? The ethics should be a key player in this.

Mike Smith: [00:20:25] Yes, well, ethics and morals have always been a dimension of warfare. And I think one of the more pleasing things that's happened, if you look at the history of warfare, is that largely through organizations, such as the International Committee of the Red Cross, there have been limits placed on things, and International Humanitarian Law now has come into force. Now, not all countries abide by it, but most do. And so from that point of view, I think we've seen progress. But of course, as we all know, in many circumstances, International Humanitarian Law and the laws of armed conflict are often contravened. And that's sad, but at least if we have them there, then people can be held accountable for them.

John Rodsted: [00:21:18] So there is a moral benchmark that's created by the ethics and the international humanitarian law stance.

Mike Smith: [00:21:25] Well, yes. And I think those nation-states that don't abide by those or pay lip service to them eventually come to grief because it comes back to humanity and what are the rights and wrongs of what we can do. It's fine to defend yourself if you're under attack, I don't see any problem with that. It's another thing to kill innocent civilians and non-combatants simply because you want to.

A Possible Arms Race? [00:21:51] **John Rodsted:** [00:21:51] How do you think this would develop some form of arms race? Because if there's a technology that can be manufactured and sold, I would guess there'd be a lot of pressure from corporate entities to develop them, sell them, the militaries buy them, the governments buy them. Then a new technology comes in, so the old stuff becomes redundant and it would be quite a lucrative business for those that are in the business of selling these things. Do you think an arms race could come out of this?

Mike Smith: [00:22:19] Historically, we've always been in an arms race. I remember studying the origins of the First World War and, many, many years ago and the huge arms race was on with the big Dreadnought battleships and those sorts of things. And then of course, after the Second World War, we had an arms race, in terms of nuclear weapons. So there's always an arms race going on and it's because the nature of warfare and the nature of technological development is to try and develop a smarter weapon, a better weapon, a more precise weapon, a lighter weapon, than what you had before. So this is not new. Where I think the danger is, is if it moves from being a human contest to being one that is pretty much run and decided by machines, which have been made to go and do that sort of thing. And which are not only killing other machines but they're actually killing humans, and destroying infrastructure and livelihoods and all of those sorts of things.

So that would be the danger of the new arms race. But I have to say, to be honest with you, I'm still more worried about nuclear proliferation and the possibility of the use of nuclear weapons than what I am about lethal autonomous weapons at the moment.

John Rodsted: [00:23:59] I guess when it comes down to the employment of a nuclear weapon, it comes down to absolute destruction of everything that's under it. So whoever the victor would be, they don't get anything in the way of a city or people or anything else. They've created basically a desert beneath them. So it's, it's the ultimate form of destruction. Isn't it? Going nuclear?

Mike Smith: [00:24:17] Well, it is, and more countries are going nuclear. And they're going nuclear on the basis that they believe that it's a deterrence on anything that can be used against them. Would you give your children something dangerous in case another child had something? To me, it's lamentable that Australia hasn't been more proactive against nuclear weapons. I noticed that we didn't sign the nuclear prohibition treaty in the United Nations. And that's because our allies are nuclear powers and we're sort of attached to them. But, I think this is a mistake.

John Rodsted: [00:24:56] That takes us into that whole realm of the 'mad policy', mutually assured destruction. If you've got it and I've got it, we can just destroy each other if either of us chooses to employ it.

Technology Development [00:25:05] If we go back into the killer robot's world, there's a lot of research and development that's taking place at present from robotics to drones, to artificial intelligence. And it is extraordinary stuff. And if it's used for peaceful or a defensive application, that would be one thing. But applications for war opens up somewhat of a Pandora's box. And a lot of universities around the world are gaining grants and investment from developers, military developers, weapons, makers, et cetera, to create a lot of these platforms that could become, lethal autonomous weapons.

Is that a dangerous road to be going into for universities?

Mike Smith: [00:25:43] Universities that are involved in research, are always researching new applications. So I think that this is not unexpected. It's happened all the time. Through the history of warfare you'll find connections with universities or technical establishments, and you'll find partnerships between universities and defence science laboratories and things of that nature. So that's not new. Is it a slippery slope in the case of killer robots? And I would say, well, it depends to what extent control and decision-making is given to a machine and what remains the province of humanity.

John Rodsted: [00:26:30] And that again, puts that ethical imperative in there that you'll have rules, you'll have limitations and you will have human oversight. So, we always keep coming back to the point; we need somebody in control, no matter where we go with these subjects.

Mike Smith: [00:26:44] Absolutely. And I have been impressed and encouraged by the fact that many people involved in artificial intelligence are very cautious and have warned us; we

mustn't go down ' this killer robot' or lethal autonomous weapons road without ensuring control and limitations. And I think that's very wise counsel because these are the very people themselves who are involved in the artificial intelligence world.

John Rodsted: [00:27:18] So with the creation or development of these technologies, if say Australia and our development institutions are coming up with a lot of different solutions to robotics and artificial intelligence, et cetera. A lot of what we would do would probably be exported overseas to somebody else's end weapons manufacturer.

Now, could that be creating a situation where we could unwittingly be creating a monster that would come back and haunt us?

Mike Smith: [00:27:47] Well, it is possible. Absolutely it's possible. But I mean, that's like the argument that we shouldn't export uranium because it could be used for nuclear weapons. And whilst we might say we've got controls over it, I'm not sure that we really would. So I think it's a case-by-case issue. I don't think you can just say we won't participate in the whole international research that goes on in these fields. I think it's much better to be part of the research, but to always be responsible and to know the limitations, of what you're doing.

John Rodsted: [00:28:29] Some argue that the battlefield, these days, because of technological advances move so quickly, it's virtually impossible for commanders or operators to keep up with what's going on. And we've certainly touched on how these systems could work in a defensive role, but it's really a flick of a switch to go from a defensive to offensive.

How do we break the line between a defensive autonomous system and then that not being employed as an offensive autonomous system?

Mike Smith: [00:29:00] Well, I think you've got to take it on a case-by-case basis, again. In terms of the speed and the fog of war, it is very true what you said. However, at the same time, commanders also know more about what's happening on the battlefield through different sensory and surveillance systems than they ever had in the history warfare. So although the fog of war will always be there, and decisions will have to be made quickly and you might not have all the information, I don't think that's very different from what's happened in the past. Probably the biggest difference is that the consequences of a bad decision can be greater if the firepower that's used - the kinetic power that's used - either inadvertently or deliberately, targets innocent civilians. And we've seen many cases where innocent civilians have been targeted and we know that, and I don't count that set at all. But the fog of war will always be there. That's the nature of war. And what we have to do is try and make sure that human beings and not machines are the ones that make the decisions and are held accountable for those decisions.

John Rodsted: [00:30:22] So it all comes back to the point of accountability and command again. The same with any of these things.

With scenarios such as swarming technology, and just for those listening, if you think about hundreds or thousands of micro-drones, which are armed with a small explosive cap that can

work in a networked setting, fly into a city, hunt out people and explode on impact. That's a fairly dystopian perspective of where killer robots could actually go.

How would you see that being controlled or even deployed Mike, if those sort of technologies actually did exist?

Mike Smith: [00:31:00] Well, there's no question that the technologies do exist. It's how they would be applied in those sorts of situations. And, the difficulty is that the battlespace where they would be used would almost certainly be full of civilians who would become collateral damage. Whilst that technology exists, I haven't yet seen situations where they actually would use it. And if they did, they would certainly be contravening the laws of armed conflict and international humanitarian law. There is a whole range of weapon systems, not all autonomous, that can create havoc. We've already mentioned nuclear and of course, there's a whole swathe of directed energy weapons which might be autonomous or not autonomous, which could be used, and they could have similar effects. So I don't think it really changes. It's just a different weapon system and where we have to be very careful is that we always draw the line between what a machine decides and what a human decides. So, if we are using a directed energy weapon, and it's been decided to do that - and they say some countries have already done that in different situations. So we know that chemical attacks have been used by some countries against adversaries. Well, then they must be held accountable for that. And it's difficult to hold an autonomous weapon system to account. Isn't it? Unless you can find the person who ordered it to be used.

The Fog of War Continues [00:32:43] **John Rodsted:** [00:32:43] With all of the literature that I have read so far and various discussions with people, either for or against these technologies, I've never heard of valid answer or argument that says: 'how they would define the difference between opposition, combatants and civilians', identifying your own people is simple with, you know, variety of marker technologies, but that just means everybody else is the enemy and in a mixed battlefield, that just means collateral damage would be massive.

Is there anything you could add to that Mike?

Mike Smith: [00:33:15] Not really. I mean, now with surveillance systems and recognition systems and all the rest of it, and saying that weapons are becoming more precise, guess that you might be able to develop something that was able to discern between a combatant and a non-combatant. It might be possible. I don't think we're nearly anywhere near doing that yet. But the bottom line is that the use of any weapon system that is indiscriminate is not legal. They should not be used.

John Rodsted: [00:33:50] Yeah, it comes back to a pretty simple baseline, doesn't it? Then it's the ethics of responsibility and accountability.

Mike Smith: [00:33:57] Yes. But what we can be certain of, is that developments in autonomous weapons will continue. And that many of these autonomous weapons will be lethal. But it is how they are controlled, the conditions under which they're controlled, and the purpose for which they're being developed. They're the issues that we need to be

looking at very clearly. And that's why I'm really on board with the Killer Robot Campaign because I think that it is saying; 'Hey, we really need to look at it.' But what that campaign needs to do is really have a clear definition of what it's targeting . Because sometimes I hear people arguing against weapon systems that are pretty much already in place and working, and they're not lethal against another human being [or some are, and can be, and I'm against those,] but some are purely for defensive purposes to defeat missiles and those sorts of things. And I think they're perfectly legitimate.

John Rodsted: [00:35:00] And that all comes back to having somebody in the loop who is commanding it and has got the ultimate responsibility about whether these things are used or not used. But then if we get into the technology which is in development at the moment, these closed- loop weapon systems, which basically once you set it on its mission, you can't really call them back. They are designed to find life and destroy it, work in a network situation. And their concept of being a closed- loop is they believe they can't be hacked and they can't be stopped. What sort of battlefield would that create?

Mike Smith: [00:35:34] Oh, I think a very dangerous one and one that really would not be subscribing to or abiding by international humanitarian law. I think that's the danger that we face and we must be mindful of it.

John Rodsted: [00:35:52] And I imagine when you get into things such as autonomous weapons and things that fly and have heavy electronic circuitry and systems are that some of the potential countermeasures for them would be electronic burst technologies that can fry electronics or disrupt the guidance systems, or, cook them as they're coming onto a target or into an urban environment or whatever. So it does end up with some quite distressing countermeasures to take on these weapons.

Mike Smith: [00:36:19] Oh, absolutely it does. And that's why I said before that most of these systems are going to be controlled from space. And so, you know, that's really the new frontier and the new high ground. And it's also where countries can be very vulnerable.

John Rodsted: [00:36:37] I can imagine a battlefield scenario where you had, say two superpowers who were completely equipped with these, unleashing their systems on each other. One of the arguments would be, it would be machine versus machine. Well, that would be an economic battle of attrition until whoever's got the last machine standing, I suppose, would, would be potentially the Victor.

What about in a situation like for instance, Syria? Syria has gone through this horrendous war on so many different layers. How do you think it would have been played out if one of the sides was able to employ masses of drones into that or masses of swarms of killer robots?

Mike Smith: [00:37:13] I honestly don't know. When you think about the war that occurred in Syria, it really wasn't all that high tech . I mean, there were episodes I suppose where high tech weaponry was used, but basically it was armed militias. It was really pretty basic stuff. So it wasn't this high technology warfare at all. I think the sad thing about Syria is that the world was unable to stop it. And it just kept going and still going. And we all know what's

happened, a lot of people have suffered because of it. I think, this means that intervening in situations where you can't be assured of a proper outcome is always very dangerous and it's likely to reverberate on you. I'm not even sure that lethal autonomous weapons would be useful in a Syria type situation. I'm just trying to think of it.

You do get some of the players looking at these situations to experiment with their weapons; to try them out and see what happens. But that's really more on the technological side to test them out. I don't think it would have changed the outcome in Syria at all.

Making The Decision To Go To War [00:38:26] **John Rodsted:**

[00:38:26] So I see a lot of the conflicts that have been fought since world war two and put the benchmark of the atomic bombings of Hiroshima and Nagasaki have been more low technology in a sense, but high-intensity fights that have gone through Indo-China, and Africa, and various places around the world.

And I guess the standoff over nuclear weapons, has stopped countries sort of crossing that weapons Rubicon of how far do they go? Is there, such a concept of all-out war, or are there limitations on it? And again, that puts us back into ethical restraints and command responsibilities.

Mike Smith: [00:39:05] Yes, I think that's right. There's been some terrible things happen, and we know that, but we haven't been back to a situation like World War 1 or World War 2. And that's an encouraging sign. But I don't think the advent or not of lethal autonomous weapons is going to change that situation very much. I think the decisions to go to war are going to remain largely political decisions or totally political decisions. And a lot of it's going to be based on traditional issues of great power rivalry and often what will pre-empt or be used as the catalyst for major conflagration, will be minor things that will be the triggers as we've seen in world war one and world war two, that's what tends to happen. And that's the dangerous time that we're entering now. And I don't see lethal autonomous weapons, changing that situation greatly, or determining an outcome of that type of situation.

What's more important is that we make sure that nuclear warfare doesn't occur, because that would mean total destruction. And what we need to do is make sure that the United Nations is empowered much more than it is at the moment and resourced and respected to do everything they can to prevent these major conflicts occurring. And when conflicts do occur, try to stop the fighting and do redevelopment in those countries. That's probably about the best we can hope for, I would say.

John Rodsted: [00:40:45] In a sense one of the greatest uses of a military is peacekeeping, to pull belligerence apart and try and get sense in there as opposed to accelerating conflict.

Mike Smith: [00:40:55] Yes, and peace operations have been pretty darn successful. When you look at the record of them, there's been some where problems occur and they were done ineffectively, but on the whole, peace operations have tended to be pretty good in most situations. And they've kept a lid on things, prevented hostilities getting out of control again and they've provided the wherewithal for peacebuilding mechanisms to start. And I think it's a shame that Australia is not doing more in this space. In fact, our commitment to

United Nations peacekeeping since Timor, which was 20 years ago now, is probably the lowest it's ever been.

Banning these Lethal Autonomous Weapons? [00:41:41] **John**

Rodsted: [00:41:41] There's a major international movement at present to create a treaty that will ban lethal autonomous weapons, or at least putting major restrictions on them and definitions. Is that a road that the world should be heading down? Or is there room for these somewhere?

Mike Smith: [00:41:56] There's been some great work done by the CCW in the United Nations, over a number of years, but I think that many countries are still not committed to it as much as they should be. There's definitely a constructive role to be played by the people in the Killer Robot Campaign against lethal autonomous weapons. The challenge for that campaign is to clearly articulate what it means by lethal autonomous weapons. And to have that simple message. But it's going to be more difficult, say, than the Mine Ban Treaty, which was very clear cut. People could understand that. They could see the consequences of landmines and the need to abolish them, and to ban them. It was a bit more difficult with cluster munitions because, there're so many different types of cluster munitions, and, some countries decided that they didn't want to go the full way. And so whilst that treaty was successful in being negotiated, some say it didn't go far enough.

And I think that's where we're at with lethal autonomous weapons. There's a definite need to restrict the use of lethal autonomous weapons. But it's what we mean by that, that is still I think, a little bit unclear. But I would be encouraging the civil society movement to continue in its endeavours, to bring this to the consciousness of all political leaders and to try and strive for a clear understanding of what lethal autonomous weapons are. And those that should be banned. And those that would be permissible under certain situations. Because artificial intelligence is here to stay. Artificial intelligence itself is a very good thing. It's when it's used incorrectly problems occur. And the people involved in artificial intelligence tell us that people who write algorithms, and then walk away from those algorithms are not necessarily the people that we want to be following. I think that there are many people involved in the world of artificial intelligence who support a campaign. I am not involved in the scientific side of it, but I certainly support a campaign.

John Rodsted: [00:44:24] I think there's a great disconnect between the reality and the theory of what these weapons systems are. And back in your days in the army, if you were a major general on the field, and responsible for lives or death on both sides. How would you feel if you were handed an arsenal of, lethal autonomous weapons to deal with?

Is that a step too far or, would it be something you could come to terms with.

Mike Smith: [00:44:48] Well, I remember when I was serving, I was very keen for the Australian Defense Force to get involved in things like drones, in unmanned aerial reconnaissance, and that sort of thing. Basically, it's all about surveillance and understanding what's on the battlefield and trying to then make the right decision so that your defence personnel, and any civilians in the area of operations, are better protected. And that you can

succeed in any military mission that you're given. So I don't see those as bad things. I think that they're good things. It's when we take the next step and say we're just going to let machines go and do everything and be unaccountable for them. That I think is a step too far, and that we should be very, very cautious about allowing those systems to basically take over.

John Rodsted: [00:45:47] And of that, I think we'll say thank you, Mike, for joining us on SafeGround. And, let's just hope we can clear away the fog of war and not add to it by employing lethal autonomous weapons. It seems to me like a step too far, but a lot of discussions, a lot of ethics and the baseline that I think we keep coming back to in this discussion is there always needs to be somebody in command.

Mike. Thanks for joining us.

Mike Smith: [00:46:11] Thanks, John