SafeGroud Presents the series ‘Stay in Command’ : Mary Wareham on the Killer Robot Campaign

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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 mustn’t delegate decision making from man to machines.

Today we speak with Mary Wareham who is the advocacy director of the arms division at Human Rights Watch. Originally a native of Wellington in New Zealand she has been working in the disarmament sector for many years and is based in Washington DC. She is also the International Coordinator of the Campaign to Stop Killer Robots and joins us from Washington now. Welcome Mary.

You’ve had an extraordinary career working on the most important treaties since the 1990’s. The list of work is the success story of recent disarmament driven by civil society. The big two would have to be the treaty banning Anti-Personnel Landmines in 1997, the treaty banning Cluster Munitions in 2008.

Of these treaties, the work of civil society drove those processes and forced governments to account and ultimately change. The Landmines Treaty was awarded the highest international accolade with the Nobel Peace Prizes from 1997.

Today we don’t look back to celebrate the past but to the future in her work to ban, Killer Robots.

Killer Robots - sounds like a cheap Sci fi movie[00:02:52]

John Rodsted: Killer robots. Sounds like a cheap sci fi movie or a scene from the Terminator. What in fact are they?

Mary Wareham: Well, the Campaign to Stop Killer Robots is not so concerned about the Sentient walking, talking you know Terminator, like a killer robot. We're more grounded in reality. And what we've seen is the small number of military powers, most notably China, Israel, South Korea, Russia, and the United States are investing very heavily, now in military applications of artificial intelligence and the developing air land and sea based autonomous weapon systems.

We've been quite careful to call for a preemptive ban on fully autonomous weapons, which means that focuses on future weapons systems, not these existing ones that are out there

today. But it helps to look at them, especially the extent of human control over the critical functions of selecting your target and then firing on it more and more.

We see senses being used to detect targets. And increasingly they're not controlled by humans. We have facial recognition technology cameras that are now employing that, there's heat senses, to detect body heat, motion senses, which can detect how you walk, your gate and of course, since it's for radars and we're all carrying around a great you know tracking device in our pockets, which has called a mobile phone using GPS technology. So it's a combination of different technologies, but, I think it's a bigger reflection of how our own lives are becoming much more subject to computer processing. And there are big technological developments that raise fundamental questions for humanity. When you try and incorporate artificial intelligence into a weapon system, to the point that you no longer have that meaningful human control.

Meaningful Human Control? [00:04:43]

John Rodsted: Can you explain a bit about meaningful human control for us and what's the difference between an autonomous weapon, which is using artificial intelligence. Can you flesh that out a bit more for us please?

Mary Wareham: wow. I mean, what is that artificial intelligence? There's still not any agreed on definition. So what we tend to talk about more, in this campaign is about autonomy, how autonomy is incorporated into weapons systems. And when we talk about human control over the use of force, we prefer to use the term control as opposed to judgements or intervention that implies a weaker role for the human.

We also like this word or modify meaningful because that ensures that the control is substantive. But of course there are other descriptions for that. We put out a paper a few months ago, detailing how we believe the concept of meaningful human control can be distilled down in an international treaty.

And it can be done in several different ways because it can apply to the decision making, the technological and the operational components, the decision making components of meaningful human controller about ensuring the human operator has got the information and the ability to make decisions about the use of force and ensure that they had to being done in compliance if legal rules and ethical principles. The human operator of this weapons system has to understand the operational environment, how the autonomous system functions, what it might identify as a target. And there needs to be sufficient time for deliberation.

Technological components are the embedded features of a weapon system that would help to enhance meaningful human control. This is about predictability and reliability. It's about the ability of the system to transfer or relay relevant information to the human operator. It's also about the ability of the operator or the human to intervene after the system has been activated.

This is what we would call a human on the loop, as opposed to a human out of the loop. And then finally the operational components that can make human control more meaningful.

And this is about limiting when and where a weapon system can operate and what it can target. There's a whole bunch of factors that need to be considered.

And this, not least , how, how the force is applied. The duration of the systems operating period, the nature and the size of the area in which it's operating, the types of targets that it may be attacking people anti-personnel once or anti material. And I think it's also interesting to look at the mobility or stationary nature of an autonomous weapon system. And if there's anything particularly problematic in that. So what we're trying to do is determine the acceptable level of meaningful human control over the use of force. It's not a short answer because it's one that requires a negotiation. And in order to do that, to agree on it, there will have to be an international treaty negotiated.

Who would benefit from an arsenal of killer robots?

[00:07:45]

John Rodsted: So if there were arsenals of killer robots who would benefit from that, what sort of scale of military would benefit from an arsenal of killer robots?

Mary Wareham: We hear a lot about short term gain for long term pain when it comes to autonomous weapon systems. We had the United States and other countries talk about how they would use autonomous weapon systems responsibly and in compliance with the laws of war, et cetera. But even, even countries like the United States acknowledge that once these kinds of weapons systems get into the wrong hands, they could definitely be misused, and not just, to kill one or two people, but potentially to commit genocide.

If it came down to that, It's possible to make a case for any weapon system, but for autonomous weapon systems, I guess some of the attractions are, yes, you could have fewer soldiers on the battlefield. you would have fewer soldiers, Dying because they're not on the battlefield. But when we hear about these arguments, I always look at it from my perspective as a human rights activist and researcher, which is you never have a clean battlefield. There's always civilians who end up in there, especially if warfare is being fought in towns and cities as it is these days.

An Arms Race? [00:09:01]

John Rodsted: So effectively, investing into killer robots could trigger a new arms race. If, for instance, some of the big superpowers put a lot of money into developing, manufacturing, stockpiling large quantities of these weapons, which they could then swarm a battlefield. That would spurn the opposition to do the same and that they just keep spending money and stockpiling more and more weapons.

So it becomes a major arms race, economically, and, and eventually has to be triggered by some form of conflict.

Mary Wareham: Yes, the potential for arms race is very strong, and it's one of the biggest defenses that we hear in Washington DC. If you talk to the think tanks and defense contractors, , they'll talk about how responsible the US is and how irresponsible China is.

And, and if China is investing in the stack, then we need to as well. It's the self perpetuating circle, which Russia is also involved in as well as part of the reason why we've got a preventative campaign here, trying to aim for it, taking action before it's too late. One of the big attractions for me working on this concern is that it took hundreds of thousands of people to be maimed or killed by landmines before we managed to create the treaty banning those weapons. And since then it has had a remarkable impact in reducing those numbers of human casualties. But this is an opportunity to to act in a preemptive way, - preventative way, when it comes to fully autonomous weapons. And we don't have to, except this narrative of the arms races, it's definitely one that the developing world does not want to accept. Because they look past the arms races and they look at the destabilizing consequences both regionally and internationally.

Who would make money from them? [00:10:43]

John Rodsted: so who would make the money out of such technologies if they were in fact developed?

Mary Wareham: You look at, who's making these investments and it's the regular big name, arms manufacturers from Norfolk Grumman to Lockheed Martin, and the rest of it. Some of this is in state owned production facilities. We believe that to be the case in China and Russia, things are quite tightly controlled there.

in terms of making money, I guess off the really big, major, platforms such as the very large autonomous fighter aircraft. There is money to be made in that, for sure. But we're also concerned as establishing this principle of human control over the use of force, meaningful human control, so that everybody can understand it, so that it can apply to the biggest military power right down to the non-state armed group who's thinking about putting out the infrared senses, to get their explosive device to detonate and that would make it an anti-personnel landmine. So in effect, we've dealt with the dumb end of this consern, through the prohibition on anti-personnel landmines. And yes, we're talking about bigger platforms, but all sorts of different types of platforms.

And this is why we have to come back to this notion of human control, because that's the one common, defining point in all of them or absent from all of them.

Can AI technology be fooled? [00:12:03]

John Rodsted: So it's driven by artificial intelligence. Can the technology that is proposed at present, be fooled?

Mary Wareham: Yes. I mean, we heard there was a glossary of terms and Pentagon directive a few years ago that was quite revealing, because it talked about all of the things that could go wrong, hacking, spoofing. What happens when your enemy gains control of the system and uses it against you? If they copy it, if they try to develop it. We see that already happening today with armed drones that Iran, and other countries are deploying. So this is what could happen.

What role do universities play in killer robots? [00:12:39]

John Rodsted: So universities and research facilities are major players in the development of any technologies, where do these institutions come into the story?

Mary Wareham: We talk about an arms race and artificial intelligence, but really it's more like a talent quest, trying to find the best programmers, the people who are at university learning these skills. There's quite an effort underway here in the United States and I think in Australia and elsewhere by certain arms manufacturers, defense contractors, but also militaries themselves to set up these university centers for excellence in artificial intelligence.

But to do this in quite a tight knit way, working, with funding in some cases from defense contractors or from the government itself, and this is where students, especially, and faculty have to wake up. I've had a number of different engineering, robotics, and other students studying artificial intelligence contacting me worried about their university's relationship, in the United States with the Pentagon. but also they're worried about defense manufacturers coming on campus, and trying to get them involved in this work. And now they're also concerned about the technology companies themselves, because some of them are now doing contracts with the defense sector.

And so this is, yeah, this is what I would call the, the military industrial complex. And when it's on universities, it becomes the military industrial academic complex, which overused word, but I, which I never really believed in until I, I started working on this issue and realized just the scale of what we're confronting here. It is gigantic.

What dialogue have you had with serving or past military? [00:14:19]

John Rodsted: So, what sort of dialogue have you managed to have with either serving military or past military about this? Because I would imagine it's a complicated issue for them being cut out of the decision making process.

Mary Wareham: We've had a lot of discussion with country delegations in the military attachés and defense officials that participate in them. And I remember one with the United States way back in 2013, where we were, we were just under meet each other and we were asking them a lot of questions about this DoD directive on autonomy and weapons systems. And I remember them saying to the civil society group that I was there with, you know, you think that we're a monolith here at the Pentagon. We're not, and this policy had months of debate going into it. It was a debate between the boots on the ground guys who go to Afghanistan who understand the importance of community engagement and not kind of hiding behind their desks. There were fights with the military lawyers and their interpretation of international humanitarian law, there were fights of the acquisition people and the Techs who want to develop the latest and greatest devices. And then with all of the policy hacks, and I kind of, I can see that for sure.

It's easier for veterans to speak out on this issue than serving military, but in my conversations, a lot of serving military have whispered in my ear that they think the campaign is on the right track here. I remember a German general before an event that we did, who was saying, you need to help us to get the chemical weapons convention for autonomous weapon systems. He's like - I want to live in a , you know, a rules-based international order, which is what the Germans love to say. But it's true. They want to live in a world that has climate rules, that has trade rules, that has arms rules. And this is where the killer robots treaty comes into it.

What is the advantage of having autonomous weapons? [00:16:14]

John Rodsted: So from a techie developer come military perspective, what's their proposed advantage of having an autonomous weapon? What do they think is so good about it?

Mary Wareham: It's hard to get people to say good things about fully autonomous weapon systems. We see governments basically denying that they are currently producing or developing them, saying that they've got no plans to. We're kind of like, well, if that's your view right now, then what's your problem with a preemptive ban? We should be able to move forward without a doubt.

We see some of the bigger defense contractors adopting the language of human control that we use in the campaign. I think it was one of the really big ones who made quite a slick film about 'the human is everywhere'. This is what's happened since the campaign was launched a few years ago, a lot of the content that was originally on the web has been pulled down now by defense manufacturers, but also by, I think military who's too afraid that if we see the words full autonomy being an ultimate objective here, if we see the words autonomous without an explanation about the human control, then we're going to start asking questions. And I think the campaign is now having such an impact that it's no longer just us asking those questions, but it's the media who is scrutinizing this. And, I think it is starting at the university and student level as well.

What disadvantages are there with autonomous weapons? [00:17:40]

John Rodsted: I'm guessing one of the great disadvantages of having autonomous weaponry is that it could be hacked? If you can make it, you can break it. And there's always some clever mind out there who can get onto the inside. And I would be guessing turn the weapon system back on yourself. Have you got any comments on that?

Mary Wareham: I mean, we've seen just with the tactics that the Taliban and other non-state armed groups have taken to in Afghanistan and elsewhere to evade armed drones, they've created all sorts of shelters to try and not be seen from the sky above. And I think they will continue to innovate when it comes to how you respond to such technology.

I guess this is a good example of why the developing world is so furious about killer robots is that they see these weapon systems being rolled out by rich military powers. And they don't have the similar means to do that. But they know that they are most likely the ones who are going to be the victims of such weapon systems, especially what we hear from people in the middle East and North Africa, but also from Africa itself and across Asia, most countries are quite opposed to this notion. Less so the bigger military powers.

John Rodsted: And I guess that it creates a situation where from a implementing military perspective, the only people they can identify on the battlefield is their own people. Which then turns every living creature down there into the enemy, whether that is civilian or whether that is opposing military. Have you've got some thoughts on that?

Mary Wareham: I really like to hear some military perspectives on this. I hate to try and speak for the military on it. And I hate the way in which so much of those conversations that I've had have been kind of off to the side and not done in a, in a public way. I think one of the most abhorrent things that I hear though for militaries is this notion that you're crossing the moral Rubicon if you go this far in terms of outsourcing, killing to machines. It's been a trend that has been happening for a while, that the ever greater distance from the battlefield, we see that here in the U S and that's already exacerbating a lot of things. So there's definitely not justice for the victims of drone attacks in Afghanistan, Somalia, Yemen, and elsewhere.

And if we think that there's going to be accountability when you introduce a fully autonomous weapon system, there's just no hope there, which is why the preemptive effort, the preventative effort is so important here.

How do autonomous weapons fit in with International Humanitarian Laws? [00:20:20]

John Rodsted: So the proposed technology, how does that fit into existing international humanitarian law?

Mary Wareham: Well, what we're saying is that this effort to incorporate autonomy into weapons systems, to the point at which you, you no longer have that meaningful human control is one that's been going on for awhile, but it's getting to the point where I think there's a realization that the laws of war were written for humans, not for machines. Machines are not going to interpret the laws of war. And the kind of case that a couple of roboticists made in the early days to program in the laws of war into a machine so that you have this ethical in a killer robot. I don't think anyone thinks that that is possible. Or that if it is possible, you're still gonna have the stupid autonomous weapon systems before you have these super smart ones that are supposed to be able to do all of this stuff.

We've heard, you know, throughout our careers, John, about the potential and the promise and the predictability and reliability and accuracy, that can be made. But this really is an unproven technology and one that I would prefer to be able to deal with now, before it's on the battlefield.

I guess the one thing to say here though, is that we're not just concerned about potential use in warfare, but also in policing crowd control, law enforcement, and borders, border control. I was just writing a paper about that today.

What would a failure using autonomous weapons on the battlefield look like? [00:21:47]

John Rodsted: So hypothetical, success of killer robots would be to destroy your enemy on the battlefield. What do you think a failure would look like?

Mary Wareham: It could be pretty catastrophic. The roboticists came to us in the very early days and they were concerned that if you've got a fully autonomous weapons system that has been programmed and designed and manufactured and deployed by one side, that then meets another fully autonomous weapon system that has been programmed designed, manufactured, and deployed by the opposing side. What happens when they interact? And according to the roboticist, you could have this kind of escalating situation that you cannot dial back or dial down, and that the algorithms will continue to interact until something really bad happens. This is what we've seen results in stock market crashes, which are quite serious. But when you're talking about human life, this is part of what they mean by the unintended consequences, which could potentially be devastating.

Will we see a perpetuation of an arms race? [00:22:50]

John Rodsted: So all weapons create a counter technology. And I suppose you've just hit on that there, that the arms race would exist between industrial superpowers that can afford to shovel a lot of money into this. You come up with one idea, they'll come up with a counter and on goes that battle economically and technologically, and it never ends.

Mary Wareham: One thing that I hear from the French defense industry that they're saying is that, well, we're not going to build a fully autonomous weapon, but we'll build you the system to defend yourself against that weapon system. So this is kind of continuing with the development and procurements of autonomous weapons. But they're trying to talk about how you defend yourself against such a weapon system. And that's a good thing that nobody's admitting to developing the fully autonomous weapon, but really we're playing with words at this point, and we're not going to be able to resolve this until we have the international treaty. Companies, defense, industry types they have to do what their governments tell them. And I met with the German industry association last year that includes Rhine Mattel and some other, big, German defense manufacturers. And they said, we agree with you, Mary. We also want an international treaty. We also think that it should be a preventative, a preemptive ban treaty because we have looked at the consequences over the long term and realized that over the long term, it's just not worth it. Even if there is some appeal in the short term benefits.

How could AI technology be used for the betterment of humanity? [00:24:22]

John Rodsted: Technology and science and robotics have made incredible advances in the last decade. And sadly a lot of the money that drives that is this military investment. How could a lot of this kind of technology be used for the betterment of humanity, as opposed to just shoveling into the arms industry?

Mary Wareham: I heard quite a bit at the beginning from the artificial intelligence experts that they want to make artificial intelligence that's beneficial to humanity that doesn't have a negative for terrible consequences. That sounds really nice, but I guess what we're realizing now after campaigning against killer robots for the last seven years, is that we're starting to see the broader concerns about the tech coming out here in the healthcare industry and education, in all sorts of different fields. There's a lot of discomfort with the introduction of automation. And we're seeing that accelerated at the moment due to the pandemic.

So it's important to say that we're not anti-technology, we're not opposed to artificial intelligence and it being used by militaries. We hear a lot about the dirty, dull and dangerous work that they can use AI for. And unfortunately, a lot of the examples about explosive ordnance disposal, robots, and look how great these robots are going to be when they go in and, and destroy landmines. I'm sorry, but it's still the human deminer who's going to be a hundred percent effective. It's not going to be a case of sending a robot in to do humanitarian mine clearance. And this is what we hear from the Pentagon here in the United States where they've set up the Silicon Valley outreach office to try and woo all of the companies out there and to work with them. They really try to show that they're humanitarian, that this is about disaster relief, that this is about, setting up the right software and computing systems, that this is not about weapons. And if that's the case, why is the department of defense leading on it? Why isn't it another part of the government who would like to work with the tech sector?

I guess the dirtier parts of it are a lot less visible, but there's also now a lot of crossover. Not just between the military and the tech sector but the other government agencies here, at least in the United States, we've got Palentier trying to work along the southern border with Mexico with the immigration and customs service. And they're putting in all sorts of installations along that border, that raise concerns for us.

What roles do social media play with killer robots?

[00:26:52]

John Rodsted: So with a platform such as Facebook, Google, Instagram, whatever we all live online. these days, we put so much information online. We've got a smartphone in our pocket. That's continually tracking where we're going from tower to tower. How does all of that technology tie together with this autonomous weaponry?

Mary Wareham: Well, we've got this notion of digital dehumanization about the need to defend our digital rights. And for us, when we get on social media that means our privacy, the safety of the content of the information that we share. But these systems that they're setting up, are making it easier to process and categorize people. And that's a dangerous development. If you end up being somebody who wants to take out, not just another soldier, but an entire group or category of people. We do not want to see that happen. I think it's one of the reasons why Google two years ago now committed not to design or deploy artificial intelligence for use in weapons systems. And this is a pledge of commitment that we're holding them to, because of their military contracts. This thing we'll work on everything else with the Pentagon, but not, on weapons themselves. But the project that was so controversial for Google and that they dropped was project Maven. And that was about taking the footage that the US was filming through it's drones, all of that surveillance footage, tens of thousands of hours of footage, way too much for humans to kind of sit through and process.

They wanted to Google to run it through their machine learning programs and identify things from this exercise, identify objects. And the letter I wrote when I found out about this was how can you assure us that this search for objects doesn't turn into a search for targets, for lethal action? If you can observe, and surveil people, their movements, their daily actions over a long term period, you can build up a profile of a potential enemy combatant quite easily. And this is what we know is happening. It's just that Google got out of the game and, and other companies stepped up. But that controversy also followed those companies and the workers to their credit have also been quitting in protest. Not everybody quits. Other people find other ways to make their dis-satisfaction known.

But this really has been the killer robots. And this project Maven was one of the first examples in the tech sector here in the US of them finding their voice, which was a good thing.

What are the next steps in the Campaign?

John Rodsted: So the campaign to stop killer robots began in 2012, and you're the director and coordinator of this and doing an extraordinary job. How's the campaign going? And where do you need to go from here?

Mary Wareham: I think we're in a transition moment, along with the rest of the world. This is why I put out a report last week, looking at country positions, what countries have said and done on the concerns that have been raised about fully autonomous weapons since 2014. And more importantly, what did they think about the way forward? And that report encapsulates a whole, seven years of deliberations on this topic where we've certainly learned a lot more about the legal challenges, the proliferation and arms races. And instability, questions, the operational concerns that are raised, and even to their credit, the ethical notion of what is happening here and this moral question too, which are things that some diplomats don't usually get to dwell on.

Well, while we have built all of that knowledge, we've built a lot of consensus and convergence around this notion of human control. And that has become kind of central to

the debate, to the legality of such weapon systems. And it's not just, are they legal or not? Are they ethical or not? And this is the big role of the Campaign to Stop Killer Robots is to voice those objections because the dictates of the public conscience matter. We were the ones who get to say the principles of humanity reject this, firmly. And we're not going to settle with the status quo.

So in my mind, regulation is inevitable. There will be an international treaty. It's just now a matter of how? What place will that be negotiated when the current diplomatic talks are not able to come up with any meaningful result? How strong will that treaty be in terms of the text? And who will sign up to it?

I think what we've learned from our collective experience over the last 20 years is it's not necessarily the number of countries who sign up. It's the strength of their commitment, the clarity of the instrument that you have and this is why it's still challenging for us to say that we can create such a treaty without the US, Russia and China when we do very much want them part of it. But ultimately they're not going to be able to hold us in the current form that we are in. And I'd say this transition that we're in at the moment is to a brave new world in 2021.

And that might not be returning to diplomacy as usual, but returning to campaigning as usual. And this is why one big focus for me has just been on the youth and bringing in new people who can carry this forward because I've done a lot to get it started. But I view this as a major initiative that will take time to create. And then we know once you get the treaty, that's the easy part. The hard part is making it work effectively and sticking with it to ensure that it's implemented and monitored.

What is the time frame for making a treaty?

John Rodsted: So, do you have any sort of projected or finite timeframe to try and get a treaty up and running?

Mary Wareham: I think we're facing a big deadline at this convention on conventional weapons where these talks have been happening. It has a review conference at the end of 2021. Those are normally only every five years and are the moment at which states are supposed to adopt a new protocol. This is like a framework convention. So it would not be challenging to add a new protocol and there is a good precedent, and that the CCW is it's the treaty that managed to preemptively banned blinding lasers back in 1995. And though that prohibition did not end the use of lasers. They're still on ships. They're still targeting material targets, but you do not see laser weapons that are designed to permanently blind humans, because those were preemptively banned by this convention on conventional weapons. We know that it's possible to create new laws in that body. But it does seem as if we've reached the point of, perhaps no return. And this is why review conferences are important to us if they can't, they can't do it. Oftentimes that's the moment to leave and to find another way forward.

John Rodsted: So traditionally, one of the problems with United Nations forums is the issue of consensus that if everybody doesn't agree, then the issue gets scuttled and it doesn't go

anywhere. And the landmine treaty and the cluster bombs treaty were very good examples of creating a process outside of the traditional United Nations framework.

Is that a direction you'd like to go with the killer robots campaign and a proposed treaty?

Mary Wareham: We're asked quite often about what's our preferred step forward, and we're basically open to any options and it's not our decision to take. This is one that like-minded nations have to take. And we still do not have a kind of core group of countries who are really committed to this who are really willing to push forward a process. And we need that before we can determine where to go. But I, yes, if it comes down to it, we're going to have to leave the CCW and negotiate this. There's a couple of different ways. One is to get a United Nations, General Assembly resolution and proceed that way. This is how the Arms Trade Treaty and the treaty on the Prohibition of Nuclear Weapons were created. Those are not ideal for civil society access. They're also a bit convoluted in terms of how they're concluded, which means often certain states can get in there and create real trouble with the text and then not actually sign. I think the thing with the stand alone processes is that it might take a while for it to launch. But it has to be concluded very rapidly, like within 18 months at the most you have to have adopted your treaty. Because if you let it drag on, you forget the original purpose , officials and delegates and politicians who are really committed to this move on and you can end up with a poor treaty text. So while it feels like it's taking a long time, all of this is about positioning so that when we do get ready to launch negotiations, we can move very, very quickly. This is what I would like to see happen. But I think the pandemic has thrown some roadblocks in the way, not least, that it's just impossible to even walk into the United Nations, at the moment.

And I guess that that gives even more weight to our argument, which is that this has to be a salient issue for political leaders in order to take action on, and why we're getting a little bit tired of the rhetoric that we hear about. Yes, yes, of course we want human control. Yes. Yes, of course. Of course we want a treaty, when that's not matched up by action by the officials. This is what we need to see happen. One of the good things has been the work of the international Committee of the Red Cross, of Sipri, another research organization. So we're really getting their heads around this and who are documenting autonomous weapon systems as they come out, but who are also getting their smart people together to talk about this notion of human control and what it would look like in a normative framework in an international instrument.

Who are potential international allies?

John Rodsted: With the roadblocks that you've had in moving the campaign forward and the issue forward, have you found any decent allies politically? Are there any nation states that are sort of showing themselves to be more amenable to creating a treaty than others?

Mary Wareham: Yes, I perhaps first and foremost, talk about the Secretary General of the United Nations. We did not have a good run with the last one, with Ban Ki-Moon. He did not, give his, lend to support the negotiations of the convention on cluster munitions or show up for the signing conference or any of that. This new Secretary General, however, Guterres, is an electrical engineer by training and he is very much concerned about artificial intelligence

and emerging tech. So he's really turned into a champion for this particular cause, calling for a prohibition treaty a couple of years ago and calling such weapons, morally repugnant, and politically unacceptable.

This is the message that I want heads of state and foreign ministers and others to hear. so it's really important that it's not just the campaign saying it. And there's 30 countries who have put themselves on record as seeking a ban on killer robots. Countries such as Egypt and Pakistan, many countries from Latin America, Zimbabwe and Ghana and others from Africa. But from Europe it's the, it's the Holy See, and it's Austria. So I guess part of the focus of our campaign at the moment is on what we call the movable middle and what we can do to position and remind countries such as Canada and Norway, Germany and the UK, France, that they can be on the right side here. That they do, should understand the appeal of coming together in a collaborative way, a multilateral way, and demonstrating that they are being responsive to the concerns that are being raised.

How can we help to achieve a ban on killer robots?

John Rodsted: So what can the general public do to get involved or to try and move this process forward? Because people need to form opinions out there. They either need to think this is a great idea or a terrible idea and pick a side. What can they do to get involved?

Mary Wareham: It's been really cool to see a lot of the students holding debates and using the materials that we've developed in the campaign to do the point and counterpoint. I mean, there are so many different debates that you can have here, not just on the legality, but on the other concerns that I raised. And so I think it is a fascinating one for young people to be learning about. We just launched a page on the website for youth, and scouts are particularly interested in this. And we know that young people and a lot of people these days are not getting their news from the regular media outlets, but from social media. So we've tried to set up a good, strong presence now on the various different platforms. And we encourage everybody to sign up for them and to sign up through the website for our regular update. We're not really at the point where we've got petitions calling for specific actions that will come, and it will come soon, but it's also part of the negotiations part.

This is part of the reason why I did the country position's report last week is that I do want people to learn more about what their own government has said and done on this, because I think that they would be surprised to see some of the rhetoric, but then also the reluctance to move forward. And we know we hear from the officials that they move when the minister gets a letter and when the minister gets a letter, hopefully it's from a member of the public who's concerned about this. So we move into the digital world, but letter writing still counts. Meetings with local constituents, that still counts. And I'd really like to see more of that happening in Australia, including on the university front, where there are a lot of students at the moment who are facing a lot of struggles, but they also, I think, understand what's going on on campus when they see, some of the kind of defense investments that are being made by the current government. It doesn't have to be like that. And so to keep looking forward at what kind of a country, what kind of a world you want to live in and who can you work with in order to achieve that? That's what I find in my work is that it's more beneficial for your own mental health and wellbeing, but also for the whole coalition, if you focus on what can

be done. And who wants to work together on this rather than on all of the impossible things. Cause we hear that a lot, you know, a ban will be unverifiable. None of the big countries will sign up. There's a lot of different reasons that you can give for not taking action, but I'm more interested in working with the people who are taking action. There's a real need for more scrutiny, by the media in Australia and other countries of the significant investments that are being made and contrasting that with the investments that are not being made into healthcare and education, and other areas. And if you don't see that happening in the media, then you might want to do it yourself.

We see bloggers who really have got quite a tight focus now. And we really hope that the veterans take special note of their role in this. This is not a kind of issue that you can leave to civil society alone, to sort out, we need the support of all sectors of society. All Constituencies. Our goal for the Campaign to Stop Killer Robots is to have the biggest possible tent because the more diverse we are, the more that we're going to appeal to all of the countries who we believe need to be part of this regulation.

John Rodsted: So, I guess it comes down to people to simply form an opinion, pick a side and get their representatives to smell votes. That it comes down to exercising your democratic process and democratic rights to get people to get on one side or the other. And hopefully it's society banning these quite horrendous weapons systems. The concept of being on a battlefield with robotics, still to me sounds like a completely bizarre future, but it is a future that's on the horizon. If we don't stop it right now. Mary Wareham thanks so much for talking to us, at SafeGround.

Do you want to know more?

EXIT

If you want to know more look for us on facebook, twitter and instagram Australia Campaign to Stop Killer Robots or use the hashtag “AusBanKillerRobots”

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You’ve been listening to Safe Ground with me John Rodsted.
Our podcasts come to you from all around Australia and we would like to acknowledge the Traditional Owners throughout and their continuing connection to country, land, waters and culture.
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Diplomatic Processes on Killer Robots:

An Explainer with Elizabeth Minor

Matilda Byrne: [00:00:00] Welcome to safe ground, a small organization with big ideas working in disarmament, human security, climate change and refugees. I'm Matilda Bern. Thank you for tuning into 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.

[00:00:24] This episode, we are doing an explainer on the international talks regarding this issue. So we know that diplomatic processes can be very complex and convoluted. And as we are seeing with discussions on lethal autonomous weapons systems, specifically, they can move very slowly. And so to give you an overview of how the issue of fully autonomous weapons is progressing at the moment and sort of the history of international discussions, where we're at and where we need to go I'm joined today by Elizabeth Minor. Elizabeth is an advisor at article 36, a UK based NGO that works to prevent harm from weapons through stronger international standards and is on the steering committee of the Campaign to Stop Killer Robots. So, Elizabeth, thank you so much for joining us today for this podcast.

[00:01:13] **Elizabeth Minor:** Thanks for having me.

[00:01:14]**Matilda Byrne:** To start, I just want to mention that this issue was first flagged in a diplomatic fora for the first time in 2010. So 10 years ago now, and it was in a report by the United Nations Special Rapporteur on extraditional summary or arbitrary executions, Professor Phillip Olsten who coincidentally is Australian. And so that report said, and this is a quote, "urgent consideration needs to be given to the legal, ethical, and moral implications of development and use of robotics technologies, especially, but not limited to uses for warfare." This isn't a specific mention to lethal autonomous weapons systems per se, but then led to subsequent discussions.

[00:01:56] And most recently there was a meeting just last week. So one session held over five days as part of the current Group of Governmental Experts, so what has the path been from this first instance where it was flagged as an issue to now. Elizabeth, I was wondering if you can give **an overview of how this issue has been broached on the international diplomatic stage**.

[00:02:21] **Elizabeth Minor:** Yeah. Sure. So, I mean, like you said, at first really got on the international radar with this report to the human rights council in 2010 from a UN special rapporteur, but then wasn't sort of picked up again for another three years. They'd been growing concern from, you know, scientists, ethicists and roboticists, such as those that are now part of the campaign's founding member the international committee for robot arms control, raising these concerns around deploying new technologies in the areas of, for example, sensors and data processing to use systems for more and more sophisticated processing tasks for the application of force. And you know, this issue of increasingly

autonomous weapons was starting to kind of get on the international diplomatic radar with this report in 2010.

[00:03:06] It was first debated at the human rights council in 2013, when another special rapporteur with the same brief Christoph Heinz, uh, released a report, which focused quite strongly on this issue and was looking at the issue in his mandate of whether it is not inherently wrong to let autonomous machines decide who and when to kill . So he found in his report that they should be controls on these kinds of systems and that the issues go beyond standards currently set in international law, urging a dialogue from States. So States first kind of really had this issue to look at and make their first statements on it, in 2013 at the human rights council, then it kind of picks up from there.

[00:03:47] So it then got discussed at the UN General Assembly that year, and then within the current forum where it's being discussed the convention on certain conventional weapons . The CCW as we abbreviate this convention, which has a very long name is a treaty that's based out of Geneva, whose mandate is basically to look at conventional weapons technologies, so anything that isn't weapons of mass destruction and see whether new restrictions or prohibitions are needed on a particular technologies that cause particular suffering or are problematic in some other way.

[00:04:20] So at the end of 2013, um, on partly and an initiative from France countries agreed a mandate to begin to work on discussions on this issue of what they termed lethal autonomous weapons systems and emerging technology in that area from 2014. Uh, this meant that for a few years, they had so-called expert meeting discussions on this, which was basically to explore the subjects. They got in, um, experts from, you know, different technical, legal, ethical fields to explore the issues in these areas.

[00:04:52] The CCW meets every year with all its high contracting parties. So that's all the countries that have signed up to the treaty and they make decisions each year on what work they're going to do the coming year. Every five years, they have a review conference, which is kind of a bigger meeting, looking at what is the status of work under the convention and kind of, you know, what needs doing in the next five year period. The last review conference was in 2016. So at that point countries decided to establish more formal discussions, uh, on lethal autonomous weapons systems, which basically meant that they had a mandate to explicitly look at recommendations for what should be done in this area, in a format, which is called a group of governmental experts, uh, which basically means that the same diplomats that work in Geneva plus their colleagues from Capitol who have the file on this issue, maybe military experts as well other lawyers or technical experts can attend these meetings and discuss the issue in more detail.

[00:05:53] So since, uh, 2017, we've had around 10 or more days a year of these kinds of discussions. And that's the format of meeting that we just had last week. Um, I suppose the concerns in this area, which. Uh, States have been discussing, and obviously we've been raising have generally been in areas that you could group as, you know, dehumanization and the risks of human dignity of autonomy in weapons systems, issues around the protection of civilians, legal challenges, because as the special rapporteur originally said, there's questions within existing frameworks of the law of what the gaps might be and what might not be

covered when the law was originally written without these systems in mind, you know, uh, also concerns around sort of opaque technologies and also the risk to international peace and security, the possibility of an arms race and what some States are already saying as the third revolution in warfare, and they're specifically looking at these technologies for, for that purpose.

[00:06:54] Um, so we, as a campaign and as an organization in article 36, uh, have been suggesting sort of since around 2013, that countries should consider this concept of human control and meaningful human control as a way to condense and structure the discussions, cause it's quite a wide area of, you know, concerns and issues to consider, but clearly a lot of them are centered on whether there's adequate control and accountability. And within the international debate, I think in 2016, special rapporteurs to the human rights council, again, looked at this issue and made the recommendation that autonomous weapons that don't require this kind of control should be prohibited.

[00:07:36] So where we are at the moment. Just in terms of process, is that we're in this phase of, um, a group of governmental experts discussing these issues at the convention on certain conventional weapons. This means that States need to make sure recommendations on what to do, and they have a mandate of exploring options and their mandate at the moment says that they need to come to consensus recommendations in relation to the clarification, consideration and development of aspects of the normative and operational framework on emerging technologies in the area of lethal autonomous weapons systems. So what this means basically is they need to decide, you know, whether they, want to recommend some rules in this area and how formal they will be. So will this be something politically binding? Should they be looking at a legal instrument? Are they just going to write down a compendium of kind of good military practice, if you were to use killer robots? So that's basically where we are at the moment.

[00:08:33] **Matilda Byrne:** Yeah, excellent. That was such a great comprehensive, I guess, overview of what the process has been like.

[00:08:38] I think we'll dive a little bit into that, um, normative operational framework thing a little bit later, but as you mentioned, I guess human control has been put forward as an area where diplomats and others can sort of center these talks on the international stage. You've mentioned how the group of governmental experts is also part of the CCW forum or comes under that purview and part of the process means that there needs to be consensus for things to move forward so that is that every state party in the room needs to agree to adopt something or move it forward.

Discussions on human control

So in terms of human control, Where are we seeing agreement? Um, and I guess, meaningful human control also is the term that the campaign likes to use, so if you could break that down a little bit and also note what countries have been saying about human control in these talks.

[00:09:29] **Elizabeth Minor:** Yeah, sure. So there is quite a lot of agreement now we think in this forum that the human element at least is central to sort of solving the problems in this area. And, you know, there is quite a lot of convergence on the fact that this is the core area of work quite a lot of States are agreeing saying, this has kind of more or less a, not quite a consensus point, but definitely a point of convergence. Um, so working out what's required in terms of the interaction of people with the tools that we create has been recognized as key in answering these sort of legal and ethical questions over autonomous weapons. And this question of how the law can be upheld is definitely at the forefront of what's what's being discussed.

On the concept of meaningful human control

[00:10:11] In terms of the terms that are coming up and being used- meaningful human control, we suggested as a term that would be good to, to structure debate, uh, basically because you know, the meaningful is up for discussion and needs definition, right?

[00:10:27] So I think from the start most countries were able to agree that there should be some kind of human oversight or control or interaction or supervision over autonomous weapons systems but that could mean basically anything, right? From kind of approving some suggestion from a system of what you should be doing in terms of targeting and applying force to things, uh, to, you know, fully retaining what we see as meaningful human control of the full control and legal deliberation over systems that, you know, is required by, by international law. So I suppose the campaign at the moment has broken down what we think is our concepts of human control into different components. So one's around decision making and the use of weapon systems, uh, one's around technical characteristics of weapons systems to, you know, sort of ensure that they can be controlled and also operational components in the use of weapon systems.

[00:11:24] So, in sort of making this concept of meaningful human control, the point is basically to show where we draw the line of what should be prohibited and then of the weapon systems that are left in this area of discussion, how can we keep kind of sufficient control over them to uphold our legal and ethical standards?

[00:11:44] Um, in article 36, we've done quite a lot of work on this kind of concept . Basically with the weapon systems in this area that are under discussion, they're essentially weapons that are taking in data from the external environments using sensor systems, the system then processes that data and if it matches a certain profile of a target, then it will activate force. So, you know, firing a weapon, firing a missile or something like that. And one of the key issues with these weapons is, is that of uncertainty. So after you've, you know, activated one of these systems, which is essentially something automatic, um, the human user or the military commander of that system, won't be able to be sure exactly when or to what or, um, where force will be applied to a target. So for us, thinking about meaningful human control is thinking about these factors. So how can the kind of the space over which something operates at the time for which it does so, and the scope of targets to which it can apply force be limited. And this qualifier of meaningful is where that kind of work is done over human control.

Human control in international debates

[00:12:57] So in the international debates, um, there's obviously been some discussion over what words we should use to describe the interaction between humans and their tools, the weapons systems, uh, whether the term should be meaningful human control, human control, human involvement, um, all these, all these kinds of things. Um, it's essentially kind of a political discussion over these words and what countries think the level of activity and restriction that's going to be required. Um, and I think for some countries as well, possibly, not wanting to use words that have been originally suggested by, by civil society because countries like to negotiate their own standards. For example, the United States is quite strongly against using the term control, uh, in the debate and prefers words like, uh, you know, human judgment. Um, I think because, you know, they are one of the countries who has the most interest in systems in this area and has been sort of advocating for the acceptable uses and the advantages of autonomy in weapon systems.

[00:14:04]So something that was encouraging from from last week and this year, despite some procedural challenges, increasingly what we're seeing is countries articulating what are the components of this human control, you know, less than debating the terms actually looking at the content, which is what we wanted to see. So they're saying, you know, this is what we think might be possible, this is how you should restricts weapons systems in general, in terms of, you know, how long they should be operating for and you know, over what areas if they're automatic, um, questioning what kinds of targets it might be acceptable to automatically apply force to. Um, and also thinking about kind of technical aspects that, that might be helpful there. So. That's been something positive to take away that we saw last week in this year.

[00:14:50] **Matilda Byrne:** [00:14:50] For sure. And I think more and more there's countries speaking about human control at the level of individual attacks, or also human control over specifically the selecting of targets and engaging targets with lethal force.

On the notion of so-called ‘control over the entire life-cycle’

On the other hand, though, you do have countries like the US you've mentioned also Australia and others who sort of are shirking this issue of human control at this level and are instead talking about notions like human control across the entire life cycle of the weapon. So this is really interesting phrase that's also being thrown up in the discussions and essentially appears to be a tactic for those countries wanting to avoid a prohibition on lethal autonomous weapons systems. So I was hoping you could elaborate on what this concept actually means and why it is insufficient, that level of human control.

[00:15:40] **Elizabeth Minor:** Yep. Yep. You're totally right. And yeah, so we're, you know, advocating that really, it's the point of use, which is important when you're talking about control right?. So that's why we talk about in operations and specifically, like you said, in individual attacks. But this concept of control across the entire life cycle of the weapons system, means that there's a concept of control in design as well as control in use. So, um, you know, that you should design tools that can be controlled by a human or that have

certain design features that might enhance a human control over them. Um, I think that's on the kind of, you know, more and more useful side of this area.

[00:16:19] Like you say, this idea of control across the entire life cycle, so from the research and development phase of a weapon to its kind of testing and then also, you know, after that it's deployment can be used a bit by countries who would prefer to have less human control and meaningful human control over that point of attack, and to kind of defer that back to an earlier stage when you've been, you know, designing and deciding to use a weapon and trying to make the argument that, you know, control somehow in the programming of systems or in the design of systems is sufficient in order to effectuate human intent at the point of, of an attack. Whereas we think that, you know, this is very problematic in terms of taking away the point of human decision making and legal assessment from where it is in international law, in the laws of war, which is what is discussed under the CCW, you know, at the point of a commander making a decision to attack a specific thing. Um, you can't really roll back from that and say that things will be at an earlier point in, you know, the deployment of some automatic system. Right? We think that though there are kind of some useful concepts in this area about you know, designing systems that aren't totally out of control, which I feel like as a designer is, is basically, you know, your job and you shouldn't be doing that anyway. I think it, it, it, as a way to slightly maybe try and push things into an area which isn't the relevant one in order to be addressing these legal and ethical questions.

[00:17:52] **Matilda Byrne:** [00:17:52] Definitely. I think on that sort of relevance, one of the delegations last week used this great iceberg analogy about control. So yes, there is the entire life cycle, but things like the design and the development phase is all underwater. And it's like the tip of the iceberg, the control over individual uses of the weapons, which is where we really need to come to some kind of agreement and actually I guess antagonize.

[00:18:16] **Elizabeth Minor:** [00:18:16] Yeah, definitely. And I think it's UNIDIR who also has this, uh, diagram, uh, depicting such an iceberg, um, to, to demonstrate this concept of, you know, all the phases of human control. But, but like you say, it's this, you know, the bit that is above the water, where you're actually using the weapons system, which we think is, uh, is the most important thing.

False solution of proposed techno-fixes

[00:18:35] And I suppose, another kind of problematic aspect in this area is this question of suggesting techno-fixes to what are essentially human problems. Right? So, I think that another very popular point amongst States is to discuss this idea there should be mechanisms for remote recall or self-destruct mechanisms or for it to abort mid mission if it turns out the target is wrong and, and stuff like that. And I think that we advocate for this kind of thing and it's an important aspect, but also it's not, you know, it's not the solution in itself. And in an end it can be quite problematic just to focus on those particular possible technical characteristics rather than looking at, you know, the human action in relation to the tools. There can be a tendency in weapons discussions and in high tech discussions in general to like put too much faith in the technology and to concentrate on technological

solutions when we really should be looking at, you know, ourselves and what we're wanting to do in this area.

[00:19:34] And I think for, you know, some other campaigners who worked on previous campaigns on landmines and cluster munitions, it's a bit similar to issues that came up there. Right? Say in the cluster munitions prohibition, so large bombs containing a lot of submunitions, one of the main kind of humanitarian problems of them was that, um, they leave a lot of unexploded bomblets right and they kind of act as defacto, landmines and cause a lot of suffering. But in the kind of international discourse on whether to prohibit these weapons or restrict them, um, there was a lot of discussion around failure rates of these bombs and States proposing that the most high tech weapons with the lowest failure rates or munitions that could self destruct after a certain time would be the solution to this, and similarly with landmines that you could have, you know, very high tech, smart landmines that would just get rid of themselves after a while, um, and therefore not pose a danger to communities. I mean, I think you know, we've demonstrated that this isn't the solution to these kinds of problems. The solution is in human use of these tools and how we put each other in danger with using them. So I think that there's definitely, you know, there's a danger there with these kinds of concepts of across the lifecycle and just with the high tech nature of the discussion.

Limitations of Article 36 Weapons Reviews

[00:20:50] **Matilda Byrne:** Yes. And I think while we're talking about techno fixes, not being a solution in themselves, the other kind of, I guess, idea I want to come to is Article 36 weapons reviews, and them also not being a solution in themselves.

[00:21:04] It's something that in particular Australia likes to make assertions around, uh, speaking about how they mitigate risk doing these weapons reviews and they have control systems within Australia. They assess if a weapon can be deployed in accordance with international humanitarian law and that if the weapon system in any particular context isn't compliant, then it won't be used.

[00:21:28] So these are some great sort of, I think, sweeping statements but they also have a few issues at various levels. So I was wondering, how does this actually play out in terms of assessing autonomous weapons, these articles 36 weapons reviews. And the other thing that I question is how the people conducting the reviews could possibly foresee every context where it's going to be deployed.

[00:21:52]**Elizabeth Minor:** Yeah. Well, I think you've already hit on a couple of the key problems. So article 36 of the additional protocol one to the Geneva conventions, uh, which we are, we are named after, um, more because I feel, you know, we we think in civil society, we do a lot of the scrutiny work that maybe, you know, States thinks should be doing themselves. So article 36 requires States that are party to that protocol to review any new weapons, means or methods of warfare that they bring into service and for them to check that these weapons basically don't violate the law in themselves. They're not already illegal; for example, you know, you accidentally built a biological weapon or there's something about their characteristics that mean they would cause say superfluous injury or

unnecessary suffering to combatants or that they would be by their nature indiscriminate. So already it's quite a narrow requirement would these weapons always break the law, is one way you could interpret it or would they generally be, um, you know, illegal by their kind of nature and how they've been built. Um, States interpret this requirement in different ways.

[00:23:00] There is a general kind of problem in this area that we don't have very much information about how countries do these reviews in practice because of military and commercial secrecy. some countries publish general information about how they do them. For example, the UK does this and has, you know, workshops and discussions about how they do their article 36 reviews. But generally, we don't know what standards to which these things are being done. When this has been researched for example, by the ICRC and SIPRI I think did a study recently, and we had to look at it a few years ago as well, um, it's very hard to get information and probably the standards are quite variable and quite different. In the absence of an international standard, that sets up kind of very clear boundaries States will inevitably be interpreting these differently in doing these reviews of, you know, any kind of weapons systems with autonomy that they're going to bring into service. So this is one key problem with relying on article 36 weapons reviews.

[00:24:04]Some countries that aren't party to protocol one also do weapons reviews. So the US for example, does weapons reviews and also talks about them in this forum. But given that this is an issue which is really for the whole world and the whole community of States. Right?, and not just for those who are either protocol one parties or who are active in doing weapons reviews, it's also a partial solution in that way, right? Like not everyone's going to be doing this. More fundamentally, these procedures by their requirement in law and by what we know about the nature of how States might do them could be quite limited. Right? And like you say, this problem the real life use of weapons and the effects that this might have versus, testing of them under certain conditions and a very kind of narrow concept I think is not going to be sufficient to address all the range of problems, ethical, legal, and moral that we have around autonomous weapons.

[00:25:02] And I think a key issue is that, as the, the International Committee of the Red Cross has been demonstrating in its kind of arguments and statements to the CCW, within existing international law there are unanswered questions, right? There's not consensus interpretations and that's something that's already acknowledged by States in this forum. So saying that you could just review these weapons under national procedures, it's not really a sufficient response. So again, I think like you say it's for some countries, um, certainly perhaps a way to weasel out slightly of the fact that we do need strong international standards in this area and that it's not going to be sufficient just to leave this to individual countries, to do what they want, because that's really kind of the problem and why it's on the table in the first place; is that we don't want countries, you know, just running away with this technology, and you know, having very different interpretations which will have dangerous results in its, in its usages.

[00:25:58] **Matilda Byrne:** Mm. I think, uh, while we don't want to discourage countries from doing article 36 weapons reviews, you really highlighted there, the limitations of relying on that and why it is inadequate.

Debates around definition

And I think also touched on this idea a few times of needing a global standard and why this is really important, which sort of brings me to my next idea, which is beyond the guiding principles, which is the set of ideas that were agreed upon in the last mandate of the group of governmental experts. What's coming next is obviously a key part of the mandate, which you outlined earlier. I'm going to stick with Australia; what they have said is that the guiding principles are not an end in themselves which I think, you know, the campaign and civil society also agrees with, the issue then with Australia is that they keep asserting time and time again, that it's premature to support a ban without a definition. And I think this is something that we could maybe also unpack a little bit- because in the international talks, it really has been a sticking point, being able to formally define lethal autonomous weapon systems or understand the key characteristics.

[00:27:05] **Elizabeth Minor:** Yeah. So I suppose, on, on the definitional points, um, I think, yes, it's true that at the moment, in a way, still we have countries talking about a few different concepts. So their conceptualizations of lethal autonomous weapons systems varies quite a bit between a very narrow idea, which some, some countries are using of extremely sort of futuristic weapons, machines that might have higher level intent and evolve and all these things, which certainly don't exist at the moment and perhaps would never exist. Other countries are talking about a much wider concept of systems, um, which might include also existing systems that use sensors to apply force automatically and some are somewhere in between. So it's true that there isn't a definition of lethal autonomous weapon systems that's universal. Um, but also I think that, you know, we don't. Need that at this point in order to take action and move forward. I think in our opinion and the campaign's opinion, um, discussions for regulation should proceed on the basis of having, you know, a very broad scope for discussion so perhaps, all systems that use a process of processing data from sensors to apply force, um, after their activation by a human. That covers everything that is being discussed in the CCW at, at the moment in some kind of catch-all way and allows us to then pick off the systems that we think need to be prohibited and those that need higher standards of control and where there's legal and ethical questions aren't answered.

[00:28:41]definition making is a political process, right? So there isn't something that exists out there, which is a definition of lethal autonomous weapons systems. That's something we're kind of generating in these discussions and in an international regulation, it's kind of a key part of the negotiation to decide, you know, what is the thing that we're talking about and what, what is the thing we're banning and what is the thing that we're regulating? So I think that could also be a political move to say that we need definitions before we do anything, because then, you know, you can spend a lot of time uh, talking about definitions . We think it's better to go the other way round and talk for example about, you know, human

control and how we can ensure that over weapon systems and proceed from that side in order to make our regulation.

Going beyond the guiding principles

[00:29:28] In terms of the mandate at the moment, and moving beyond these guiding principles towards this idea of some consensus recommendations around a normative and operational framework.

[00:29:41] So the guiding principles was something that States agreed last year. They contain things such as, you know, the law applies to autonomous weapons systems, uh, which, you know, you'd hope wouldn't have to be stated, but for some reason it did, you know, that accountability can't be delegated to machines so the law applies to humans. It's good to have consensus on that point, because earlier in the debate there was quite a lot of ideas and excitement around the possibility that you could program international law, um, into, you know, algorithms somehow, which, you know, fundamentally misunderstands, I think both technology and the law as a human process. And the guiding principles have stuff around human machine interaction around article 36 reviews, which yes states should definitely do but not sufficient here and other things like that.

Arriving at 'Consensus recommendations'

[00:30:31]They were meant as kind of a starting point for discussion. What countries are meant to be doing this year is kind of looking in more detail about legal, technical, and military aspects considering ethical ones as well. Um, and trying to narrow down what they think they're going to be recommending.

[00:30:48] Uh, you mentioned earlier that the CCW operates on consensus as a forum. what this might mean is that States have got to come to some sort of conclusions and recommendations that everyone in the room can live with. What it's often meant in practice in this forum, unfortunately, is that their disagreement basically means the exercising of a veto. We've seen, especially Russia use this this consensus rule to, I suppose, block certain things so, for example, there was quite a long involved discussion last year, about how many days it should be this year. There's a lot of this stuff going on on things which are less serious and meaningful than the actual issue of autonomous weapons systems and regulating them.

[00:31:36] So we feel in the campaign from these discussions, the consensus recommendations that might be made, they're unlikely to be kind of at the level that we want to see in order to adequately respond to these issues. Um, I mean, suppose I don't want to preempt anything, but that's the direction in which we, we think things might be going, But I think that, you know, notwithstanding whatever is, is recommended by consensus, by States in this forum, a lot of useful work is already being done. Like I was saying, you know, on elaborating what human control looks like. I think countries can increasingly talk about what they think, you know, a structure for a legal regulation should look like in this area and talk about the elements of that more.

[00:32:19] At the end of next year, that's kind of a crunch point in these discussions, which is the latest review conference of the convention on certain conventional weapons. So at this point this group of governmental experts really needs to come up with these recommendations of what should be done next. And I think you know what those look like and what countries feel about the adequacy of those will really kind of set the stage for what happens next in this issue and whether we'll see effective regulation on killer robots.

[00:32:49] **Matilda Byrne:** [00:32:49] For sure, Obviously there are some difficulties with getting something decisive. You mentioned Russia and US earlier, we've touched on Australia, Israel, I guess and India, also in that small handful of countries that are really, I guess, impeding the group from moving forward decisively, but there is also a lot of calls to create a legally binding instrument or prohibitions, a ban on legal autonomous weapons systems. even if not, you know, the point that we arrive at at the end of next year, in terms of consensus recommendations I was wondering if you could **explain what this legally binding instrument might look like.**

[00:33:26] **Elizabeth Minor:** Yeah, definitely. So, um, I suppose the structure that we think might be effective as a campaign what we need to do is, uh, prohibit certain technologies that are legally or you know, ethically just unacceptable and ensure that there's meaningful human control over the rest of the systems, because they all have their problems from this uncertainty about where exactly force will be applied.

[00:33:49] So we want to see in terms of prohibitions, a prohibition on anti personnel use of systems, so on systems that target people We think that that's very important from the point of view of human dignity and rights, and some of the really kind of key ethical concerns in this area right of allowing machines to make life and death decisions

[00:34:11] We also want to see a prohibition on systems that, you know, by their nature could not be meaningfully controlled by a human, so for example because of their complexity, systems that a lot of countries talk about that might use advanced computer processing techniques in order to define their target profile it's really essential, I think under the law and also ethically that people understand exactly what the effects of their weapons systems are going to be. They don't need to understand, you know, the programming of something or all the technological components, but when you're using it, you need to know what it's going to do and you might not be sure by the nature of, you know, machine learning techniques so systems that can't be meaningfully controlled should be prohibited. And I think, you know, these at best are the kind of systems that might be caught by a weapons review, but maybe not always.

[00:35:00]And then over the whole range of systems that is left, we need to ensure meaningful human control. So we think that any legal instrument should have positive obligations on countries to ensure that there's meaningful human control over all weapon systems in this area. And that, that should be broken down into the components that we were talking about of, you know, at the moments of an attack, uh, making sure you know, that there's restrictions on the time and space and target type that our systems are used against and that the point of application of force is sufficiently close to when a legal decision

has been made under and things like that. Um, and also the campaign suggests that there should be a general obligation in any treaty to, um, ensure meaningful human control over the use of force. So that's the kind of general structure that we're looking at. It's a bit more complicated, I think, in this area than just one simple prohibition because, you know, by the nature of developments in this area, it's not going to look like one single thing, right. With one kind of, you know, level of control over it, it's different technologies, which can be in different system configurations. So we need this more nuance and complex approach to make sure we prohibit all the systems and all the uses that we think, you know, are going to be a problem.

[00:36:19] And like you said, it's very encouraging that we're, you know, hearing more and more calls for a legally binding instrument and for a ban. And that, you know, this is kind of the strong position of a lot of countries in this forum, not withstanding others who want a wait and see approach, um, for different reasons, including that they're interested in having these technologies in their arsenals . So we're hoping that, you know, I suppose over the next year or so that, um, Countries will be able to, to also develop their positions in this area. And start thinking more seriously about what the structure of regulation could look like. So that, that, that groundwork is done in order to have a legally binding regulation, we can't really settle for anything less, because these are very fundamental questions and challenges.

[00:37:06]**Matilda Byrne:** Absolutely. Could you also touch on **then the avenues procedurally or with the diplomatic process that are possible for achieving such a legally binding instrument** like the one you outlined?

[00:37:18]**Elizabeth Minor:** Yeah. So this is, I mean, it's up to countries to decide this. In the CCW, they can choose to add an extra protocol to the convention. So, um, at the moment it has five protocols which address different weapons systems. There could be a sixth protocol on killer robots. So that's one option.

[00:37:35] States can negotiate treaties in other ways, if that's not what they decide to do. So for example, through the general assembly, like the arms trade treaty was negotiated through that, um, or through a standalone process that's, uh, convened by one country that that wants to lead it. So for example, the prohibitions on anti-personnel landmines and cluster munitions were negotiated in that way, through conferences in Canada and and in Norway. So there's a few different options for what, what countries could do. And if there's not consensus for all countries in the CCW to go ahead, there's 122, uh, I think parties there which includes all the countries that consider themselves the major military powers, which is meant to be an advantage of negotiating in this forum. Um, if not all of those countries want to agree to negotiating a legally binding instrument, then there are alternatives in which those countries that are willing to set the standard and red lines around this issue to start doing that and to bring others along with them later. So there's a lot of different options for States to take.

The need for decisive action and leadership

[00:38:42] **Matilda Byrne:** Yeah, wonderful. And I guess that then leads to the point that it is really important that countries do step up that governments of the world to start really advocating for decisive action for new strong, legal instruments to be developed. Um, and also I guess, bold leadership in really leading us to the solution that is really required in terms of tackling this issue.

[00:39:04] **Elizabeth Minor:** [00:39:04] Yeah, I definitely agree. And I think that, you know, countries that feel, um, you know, strongly and have strong positions about this should be developing the content and the material and the groundwork for legal regulation in this area.

[00:39:18] I think that's something that, you know, is already getting done and it's encouraging to see, uh, but yeah, we really need a response on this issue cause it's, you know, it's so, so fundamental, isn't it? And I think as well, you know, it is an issue for all countries and all people, um, quite often in the CCW, you know, you see a tendency to consider some countries more relevant than others, unfortunately. Right. Um, in these problematic kind of, I suppose, power dynamics between countries in the world. So, considering that it's just those major military powers so called, who are developing these new technologies whose opinion and participation is important in this process. Um, I think that, you know, this is a question that should be answered by the whole international community collectively, and it's going to affect, you know, all, all our countries and societies. So it's not something that we can just leave or wait for certain countries to, to come into the process in order to start defining what our standards should be. So I think that's right thing. That's very important to bear in mind with the process going forward as well. We need to act and we need to set strong standards and we need to kind of, you know, pull the rest of the world, along with us, rather than waiting for countries who are interested in autonomous weapons to be ready to abandon the third revolution in warfare that they're going for.

[00:40:42] **Matilda Byrne:** [00:40:42] Yes. And I think that's a really great point to end on this sense that it is an issue that's impacting the whole world and that the whole global and international community need to be alert on this issue and really start stepping up and moving forward. And so I know, uh, you and I, and many, many, many others will be monitoring the diplomatic talks to come and look forward for real steps forward and progress. Thank you so much, Elizabeth, for joining us today.

[00:41:09] Thanks for having me.

Matilda Byrne: If you want to know more, look for us on Facebook, Twitter, and Instagram Australia Campaign to Stop Killer Robots or use the hashtag #ausbankillerrobots. Become part of the movement so we Stay in Command.

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Limits on Autonomous Weapons: ICRC Perspective
by Matilda Byrne | 5 Mar 2021 | News & Media, Podcast Stay in Command
Podcast: Episode 8 • 3rd March 2021 • Stay in Command • John Rodsted

ICRC's Neil Davison from the Department of Law and Policy elaborates their view and work which has been done to understand limits needed on autonomy from humanitarian, ethical, legal and operational perspectives. The issue also takes a look at the diplomatic process and the 'crunch time' to agree on international limits.

Transcript:
Stay In Command : ICRC Perspective
Matilda Byrne: [00:00:00] Welcome to SafeGround, a small organisation with big ideas working in disarmament, human security, climate change and refugees. I'm Matilda Byrne. Welcome to Stay in Command a series which discusses fully autonomous weapons or lethal autonomous weapons systems and different dimensions and concerns.
Today, we'll be getting insight from the international committee of the red cross or ICRC who are active in research and dialogue on this important emerging weapons issue. The ICRC is an impartial, neutral, and independent organisation whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict.
I'm joined now by Neil Davison from the ICRC headquarters in Geneva, where he is a senior advisor in the department of international law and policy. He has been working on weapons and disarmament issues for almost 20 years, the last 9 at the ICRC. Thank you for being here.
[00:00:59] Neil Davison: Pleasure. Good to be here.
[00:01:00] Matilda Byrne: So before we dive into talking about the issue specifically of lethal autonomous weapons, I was wondering if you could speak more to the ICRC's general mandate and mission and its work, and in particular, how it approaches a weapons issues?
[00:01:14] Neil Davison: Well, I mean, our mandate is to assist and protect victims of armed conflict and other situations of violence and our work on weapons really focuses on two factors, looking at the potential risks for civilians and those fighters no longer taking part in the conflict, and interconnectedly the compatibility of weapons or their use with international humanitarian law, law of war, including the principles of humanity, which is sort of where ethics meets the law.
[00:01:45] So, when we're looking at new weapons technologies, we tend to have obviously less information from the field on the actual consequences. So we try to assess the foreseeable impact and it can be quite difficult. There's often quite a lot of claims made about how new weapons may or may not be used, the capabilities that they may or may not have. And some of these claims are often not actually borne out in practice and don't match reality and driven by quite unrealistic scenarios. So, we really emphasize having a realistic assessment of the weapon, the technology, and its likely use. This is the approach we've applied to looking at autonomous weapon systems, over the past 10 years or so.
[00:02:27] Matilda Byrne: Great. And so with that work on autonomous weapons systems and seeing this advancement of autonomy in weapons towards even lethal autonomous weapon systems or fully autonomous weapons, what does the ICRC see as the main concerns around and these emerging weapons?
[00:02:45]Neil Davison: Mmm, I should say actually just at the outset that for about the last five years we've been calling for internationally agreed limits on autonomous weapons systems and in some ways, the concerns about these types of weapons are quite simple. We understand these weapons - We don't use the terminology lethal autonomous weapons, just autonomous weapon systems - but, these are systems that select and apply force to targets without human intervention. So they fire themselves essentially based on the

interaction of their sensors and the environment. And it's different from a lot of other weapons issues, because it's something that could be applied to any weapon really, in theory.
And for us, from a humanitarian perspective, the crucial thing to understand is that the user of an autonomous weapon system of any type, does not actually choose or know specifically, the target they will hit, nor even exactly when or where it would be hit and that's really the root of the problem because the consequences, therefore, are always unpredictable to a degree. And that's even leaving aside the issue of malfunctions, which we all know happen with any complex systems, especially software based systems. So, it's that unpredictability, which is found we would say in all autonomous weapons systems, which can even be compounded at design level where you start to use, let's say AI and machine learning software that is not properly understood, or that even changes its functioning over time, that can even compound the unpredictability at a design level. So basically, you know, this problem of unpredictable consequences effectively means potential risks for civilians and civilian objects; homes, schools, hospitals, as well as, you know, combatants who are no longer fighting, injured, surrendering. And the root of it is this: if someone is in a conflict using such a weapon system, without knowing exactly what it's going to hit and where, and when, how do they assess the risks and how do they manage those risks?
One way to do this is actually to add extreme constraints on the types of situations and tasks they're used for. So today you see some autonomous weapons used already. For example, defense systems have autonomous modes for shooting down incoming missiles, but they're very narrow tasks, only against objects, measures are taken to ensure there are no civilians or civilian objects, civilian aircraft in that area while they're activated in autonomous mode and all sorts of other constraints. Now, the danger really is that looking at an expanding array of systems in the air, on the ground, at sea; there'll be mobile, they'll be AI enabled potentially, they could be used to target people rather than military objects and used predominantly where wars are taking place today - in cities and towns. And so here, this unpredictability that I mentioned presents in our view, a serious danger for civilians. And that is our sort of overarching concern. But, they do also raise serious legal questions and fundamental ethical concerns that I'm happy to go into in a bit more detail.
[00:05:40] Matilda Byrne: Yeah, definitely. I think, you know, the humanitarian imperative is quite clear in terms of the risks for civilians. But in addition, if you could break down maybe some of the key legal issues that are posed by autonomous weapons.
[00:05:53] Neil Davison: Well, the legal issues, also in a way, are quite straightforward. So essentially humanitarian law rules on the conduct of hostilities. They require those people carrying out attacks in armed conflict to make specific judgements, to ensure their attacks are lawful and generally to protect civilians and they must ensure that they only attack legitimate military targets - that's the rule of distinction, and they must ensure that any dangers for civilians that may arise from their attack are proportionate to the military advantage - that's the rule of proportionality, and they must also be able to cancel or suspend an attack, should the situation change, so should the risk for civilians change, that might affect their assessment of proportionality or their ability to distinguish - they need to be able to take precautions and that's the rule of precautions in attack.
[00:06:42] So, I mean, the key thing to understand here is that these types of judgements are not only required of human combatants, they're also highly context dependent. So they require an assessment in the circumstances of a specific attack. And this is where autonomous weapons raise a major challenge for that process because with autonomous weapons, you're moving from a very specific type of decision-making with normal use of weapons, where you choose a specific target and you choose to attack it at a specific time and place, to a sort of generalized decision-making where you activate a weapon and it

triggers itself. So you have less knowledge about what's going to happen. So the question is how can you effectively make these assessments and apply the rules? How can you judge the proportionality? How can you take precautions? It's very difficult. I mean, I come back to what I said before: one way of doing this in a way, and it's what's done today with the existing autonomous weapons, is to ensure there are no civilians or civilian objects there. That's one way of doing it in a very highly constrained way. The system is still unpredictable in a sense, you don't know exactly when it's going to fire or against what, but you've taken measures to sort of ensure that unpredictably doesn't matter, it doesn't present risks to civilians, but you know, again, looking to the future, looking at the range of armed, unmanned systems where there's interest to, to make them autonomous and looking at most conflict scenarios today, there are civilians present. And so this is going to be a major problem in terms of upholding the law.

[00:08:14] Matilda Byrne: Definitely. And I think you were talking about in terms of upholding the law, that it is sort of carried out by humans that are making these contextual judgements in terms of all of the different circumstances and doing these things like evaluating the proportionality of attack and taking precaution and things like this, which leads me to this notion of human control, which lots of people are talking about in terms of the discussion of autonomous weapons. And so I was hoping you could explain the notion of human control from the ICRC's perspective and why it is important.

[00:08:46] Neil Davison: Sure. Yeah, I mean, human control and judgment is fundamental to the discussion because, because like I say, adding autonomy to a weapon system is a feature, it's not a specific category - it could be applied to any weapon. So it's really a method of using force in that sense. But human control really underpins the legal obligations that I mentioned, and human judgment. It also underpins ethical responsibilities. And I think the important thing to understand here, there's a misconception or there are often misleading comparisons made, but machine calculations are not equivalent to human judgment, and they never will be because humans are persons with legal obligations and moral responsibilities. Machines, weapons, software will always be inanimate objects- they do not have these, these obligations or responsibilities. So, you know, the issue of human control is that in order to uphold these legal obligations and ethical responsibilities, you have to have some control over the weapons, the machines you're using and the consequences that results. And, you know, that's a critical issue.

The more difficult question is exactly what is the type and extent of human control needed, legally and also ethically. And in a way, in some of our work recently, there's also a parallel or a reinforcing requirement for human control from a military operational perspective, because militaries, uh, want to have control over the weapons they use and the effects they cause. So there should be a collective interest in that. And so the question is determining what that is in practice. Where do we draw the line and what is acceptable or not? The ICRC has made a few, a few suggestions on that, which I can expand on a bit.

[00:10:36] Um, but perhaps just returning to the ethical aspects a bit like human judgment for applying the law, the issue from an ethical perspective, I mean, having talked to many ethicists about this over the years in our work, is that, you know, it's really concerned about loss of human agency in life and death decisions. So this is, it's really most acute with autonomous weapon that presents risk to human life and especially those that were designed or used to target people. I mean, I think the way to capture it is the sense that widely speaking, you see this also in public opinion surveys, that you know, an algorithm, a machine should not decide who lives or dies, an algorithm should not be able to kill it. So, what does this mean? What does preserving human agency in those life and death decisions mean? Um, you know, one way to look at it; it means there has to be some effective human deliberation about that decision. And if there hasn't been that deliberation, you can say that

there hasn't been morally responsible decision-making, nor the recognition of the human dignity, the dignity of those who may be killed or injured. Another way to put it is that if that deliberation hasn't taken place, it's a kind of dehumanizing process that sort of undermines our shared humanity. And I think there are obviously parallels with here and other parts of society, where there are current ethical debates about the degree to which algorithms and machines inform our decision-making or take over certain tasks, that may have serious consequences for life, of course, decisions to kill and use weapons being the most serious: you've got to think twice about that.

[00:12:18] Matilda Byrne Definitely. I think with the progression of AI and society in particular, it really is important to take pause and reflect on where do we need to draw a lines? Where should there be limits, what decisions should never be given to a machine such as those over life and death. And so, I guess it kind of then leads back to the question you mentioned earlier is then what is the extent of control required within autonomous weapons to safeguard these important principles and also kind of address the legal concerns. So, the ICRC has suggested limits on autonomy in a few different ways. And so I was hoping you could elaborate what this means, and I guess some of the practical suggestions, so things like operational limits, so we're think about temporal or spatial contexts and things like that, what we're really talking about when we talk about human control, that's required over autonomous weapons.

[00:13:11] Neil Davison: Sure, yeah. We've been looking at this for a number of years, trying to find a practical answer to this difficult question. Last summer we put out a report, jointly actually with the Stockholm International Peace Research Institute, where we, we looked at the demand for human control, from a legal perspective, from an ethical perspective and from a military operational perspective. And we made an assessment of, and like I said before, I think there was a demand from all those perspectives. And we made some recommendations about what that might look like in practice. And essentially we proposed three types of limits or control measures that are overlapping. And the first is control on the weapon parameters. So these types of controls can inform limits on the types of autonomous weapons, the types of tasks they use, particularly the types of targets they're used against. So, one way would be to delineate between weapons used to target people and those to target objects, particularly, you know, military objects.

[00:14:12] There are constraints also there in terms of how long a system operates in autonomous mode and the geographical scope, the area of its operation - and those are things that it's perhaps more difficult to be definitive on in all circumstances, they may be quite context dependent. Certainly, the more complex the environment, the shorter and the smaller area you need in order to have a certain type of control. If you've got complex urban area and you don't know where your weapon is going to fire, then you've got, you know, you've got problems.

[00:14:49] The other issue is still talking about control of weapon parameters, is requirements for deactivation measures, and these can be both, kind of, remote intervention by someone who's supervising the system and, or including, you know, self deactivation mechanism, but you know, somewhere to turn it off, essentially.

[00:15:09] So that's the first area, the second area, and like I say, these are overlapping, the second area is controls on the environment. So these types of controls can inform limits on the situations and locations in which the autonomous weapons might be kind of lawfully acceptably used and I think the major consideration here, like I say, is the presence and density of civilians and civilian objects. And this overlaps, for example, with the issue about the duration and time and space that I mentioned, but also with, you know, the types of constraints on targets that are, that are set.

[00:15:43] The third area are controls through human machine interaction. So these types of

controls can inform requirements for human supervision of such systems, ability to intervene, deactivate it, should the situation change. I mean, that's very much linked to the obligation to take precautions, in international humanitarian law. In addition, an important factor here is predictable and transparent functioning. So like I say, we always have some unpredictability in the consequences of using an autonomous weapon, but where you might have even more problem is, is unpredictability at the design level. So if you don't know how systems function, if you don't effectively know how the software that controls your weapon works, then it's going to be majorly problematic.
[00:16:29] So, so we think these three types of control measures, like I say, can inform limits, constraints agreed at the international level on the, the types of autonomous weapons used and the types of targets they are used against, types of situations in which they may or may not be used and requirements for how humans supervise, intervene, deactivate and design such systems in a way that they function predictably.
[00:16:59] Matilda Byrne: Great. Yeah, and I guess, this notion of human control, is very much this idea that's developing and exactly what it means to be applied to autonomous weapons or weapons systems broadly, and it's something that is also being discussed by different countries. So the governments of the world, when they convene in the diplomatic processes, human control is something that increasingly is being talked about in different ways by different countries. And I was just wondering if you could speak to what you think is encouraging about the ongoing diplomatic talks in this area and on the issue of autonomous weapons more broadly.
[00:17:32] Neil Davison: Mmm. Yeah, well I think the discussions certainly that took place in
September last year have taken a turn towards the more encouraging. You know over many years there was a lot of quite unfocused discussion and there is now a recognition among most States that this issue of human control, involvement, judgment - some governments prefer different phrases - that's, that's the central issue. I'd say it's fair to say there's a recognition for requirement for, for the human control, involvement or judgment. There is also recognition now among many governments about the types of measures that will be needed to ensure that, and those are some of the ones that I mentioned before. And I think thirdly, there's a recognition that these types of measures really are at the roots of the work they need to do. In the terminology of the UN Convention on Certain Conventional Weapons discussions in Geneva, they would say verification, consideration and development of the normative and operational framework. I think, you know, in a more simple terminology that would be essentially internationally agreed limits.
[00:18:42] So in that sense, it is encouraging. And you do have against that background, a sort of enduring disagreement about what you do with those limits. So, the majority of States want to see a new legally binding rules, whether a new protocol to the CCW or otherwise. But other States perhaps have not called for new rules, they want to see perhaps more policy standards or best practices that are sort of non-binding, but somehow agreed politically. So you have kind of enduring disagreement about the process, but you do, I would say have some increasing focusing of an agreement and convergence of views on the substance which is encouraging.
[00:19:28] You know, on the other hand, I think it's becoming a bit of a crunch time now for the CCW and its work on autonomous weapons - seven years of discussions, in different informal and more formal settings, a lot of work done, a lot of issues explored in a lot of detail. And it's now a time to take action to build on that and to crystallize what has been learned into some practically applicable policy solution.
[00:20:00] The ICRC, we think it's really a fundamental issue for the future of warfare. We believe that international agreement is really needed quite urgently. Each week, there are

new reports of weapons developed, deployed, transferred with increasingly autonomous functions. It's not often clear exactly how they function whether they're yet autonomous. Essentially we're on a line we're on a fence that we're about to cross potentially with potentially quite serious consequences for civilians, for the law, and for humanity. So, if we want to prevent those risks, then governments really need to take action soon.
[00:20:45] Matilda Byrne: Yeah, definitely. And I guess, I think it would be fair to say that, to
address that kind of ethical imperative that exists in terms of dehumanization and the risk to civilians, as well as upholding the law, these sort of internationally agreed limits that you're speaking to is really what's required and action needs to be taken in order to really crystallize that for the international community and set these new standards. Is there anything else that you wanted to add?
[00:21:15] Neil Davison: Um, I don't think so. I think that, well maybe I would just add that, like I said, it's a crunch time for these discussions. You know, there are difficulties at the moment with even holding the meetings in Geneva because of the current situation with the pandemics and meetings have been postponed.
[00:21:33] But at the end of this year, it's still scheduled the five yearly review conference of the convention on certain conventional weapons, the CCW, so that we see really as a critical juncture in this debate and in the political response. So we'll be looking to promote the practical limits we've identified and build support for that action towards the end of this year.
[00:22:01] Matilda Byrne: Absolutely. I think a lot of people, their eyes are kind of looking forward to that review conference and really hoping that States can band together and get some really decisive action happening at such a critical time on this crucial issue. So, um, thank you so much, Neil, for your insights today and bringing us the ICRC perspective.
[00:22:20] Neil Davison: Pleasure. Thank you for the invitation.
[00:22:22]Matilda Byrne: If you want to know more, look for us on Facebook, Twitter, and Instagram Australia campaign to stop killer robots all use the hashtag AusBanKillerRobots - become part of the movement. So we stay in command.
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Matilda Byrne on Australia's position on Killer Robots

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.

Matilda Byrne is the national coordinator of the Australian Campaign to Stop Killer Robots. The Campaign to Stop Killer Robots is an international effort to preemptively create a binding treaty that will bring restrictions and the ban to a concept of weapons system that would have no meaningful human control - lethal autonomous weapons or killer robots. She holds a master's degree in international relations and is presently working on a PhD, on international security and global governance. Welcome Tilly.

Matilda Byrne: Thank you for having me!

John Rodsted: Killer robots! Can you tell me what they are and why do you want them banned?

Matilda Byrne: Killer robots or lethal autonomous weapon systems are essentially weapons that are using artificial intelligence. And so for their selecting of targets and the decision to deploy lethal force, this is all done by the AI algorithms. So there's no human that oversees or intervenes or controls the targeting of people and then deciding to kill those people as targets. And so as for why we would like to ban these weapons, there's a whole host of different concerns across moral, ethical, legal, security concerns. For me, I think one of the most compelling things is this idea of delegating the decision making over life to a machine. And so seeing that as humanity, we are not prepared to have this decision done solely by an algorithm and that a human has to control this question of life and death of another human being.

Is Australia for or against killer robots? [00:03:20]

John Rodsted: So, where does Australia sit on this subject? Is Australia for killer robots or against them?

Australia, regrettably has this position where they say it's premature to support a ban. They've been saying this for years now. And essentially what this means is that Australia would like to have the option to potentially develop lethal autonomous weapons in the future. And so beyond that as well, they have suggested many times in public forums, so at the United Nations and in their own sort of reports and things that these weapons could potentially be also desirable. And so we need to research more. We want to look at developments in this direction and see how it could be really positive for our military.

Obviously this is an incredibly disappointing position, especially because there's been no attempt by the Australian government or defence to engage with the idea of human control and actually to maintain human control in the decision making.

There are strong diplomatic efforts from civil society to get a ban on these weapons before they are developed and deployed, in short a treaty. Is this movement gaining any traction? And if so, with who?

Matilda Byrne: Yes, it definitely is. We've been seeing growing momentum towards these calls for a ban. And so first you have the different governments of the world. There is a grouping of 120 different countries called the non-aligned movement who have declared their support for a ban. In addition, there's also 30 different countries who have explicitly stated that they support a ban in the talks at the specific forum that deals with this issue of lethal autonomous weapons.

And as well as that, you've mentioned the civil society movement. So we have a lot of tech workers that are speaking up about having a ban and why that's really important for their work. So people in software, AI design, robotics, et cetera. There's also a lot of academics across different areas; so morality, ethics, philosophers, international security. They, I would say are the main sort of people, in addition to the kind of coordinated non-government organizations of the world that are working as part of the Campaign to Stop Killer Robots.

Is Australia creating killer robots? [00:05:36]

John Rodsted: Australia has a large research and development facilities in many universities and they do exceptional work in software and engineering along with medical advances. Are we working on creating killer robots or at least the software and the technology?

Matilda Byrne: The short answer is probably. So, what we know is that in a lot of our universities, there's a lot of research that's done in partnership with the department of defence and as well as defence industry. In a lot of those programs, there's a lot happening at the moment in autonomy; autonomous capabilities, autonomous systems, the kind of sensors that you would need for these weapons. Because we haven't explicitly statede at the department of defence that we are in fact, creating lethal autonomous weapons systems, it's impossible to know for sure the extent to which university research is being incorporated into such weapons. But what we do know is that the capabilities are there and that it would be very easy through these programs for those to be used for these weapons if that was the direction the Australian government decided to take.

How would kiler robots benefit Australian universities?

[00:06:44]

John Rodsted: So if a university gets involved in research and development, how would it actually benefit the university?

Matilda Byrne: So I think one of the large incentives for universities to be involved with these programs is money. So they have received funding from the government, pretty

simply. And I think a couple of the other things are more around reputation and marketing for the university. So they're involved in cutting edge and innovative programs, language like this, which is true. And, it's not an issue in and of itself for the university to do great groundbreaking research in AI and software and things like this. What's important is that they do have policies in place that say, as a university, we oppose lethal autonomous weapon systems and do not want our research being then contributing to the development of these weapons.

An ethics issue [00:07:35]

John Rodsted: So with the sort of technological advances, it really turns into an ethics issue, to draw the line between where a certain technology or algorithm can be used for, or effectively good or for weapon systems. So it does turn into ethics.

Matilda Byrne: Yeah, that's exactly right. If you put it really simply, just because something can be developed, it doesn't mean that it should. And I think you could retrospectively apply this to a lot of other weapons. So the creation of the atomic bomb or agent orange that we saw had devastating impacts. And having kind of learned from the past, we can then ask ourselves, well, what's the onus on us at present to prevent the development of something that would be abhorrent. And I think that there is an onus, and that it is really important to take into consideration these ethical dimensions.

John Rodsted: So what are the thoughts of some of the developers that their technology might be used to kill masses of people?

Matilda Byrne: So I suppose in terms of developers, you could put them in three categories. You have the people that are developing in these programs with defence and looking at lethal autonomous weapon systems. And I'm sure from their perspective, they're not thinking about how, what they're doing could cause mass civilian casualties. They're thinking about how they're contributing to the national security of Australia, things like this, but it is really problematic when there's then no controls or real consideration and reflection within those programs as to what it is that they are exactly doing and what the repercussions are.

Then you have developers in the sector that are just unaware that this is something that's taking place. They're a really important group that they sort of go about developing whatever is they're doing, sensors, algorithms, unaware that in the future, perhaps, this work that they're doing could be used for a lethal autonomous weapons system.

And then of course you have the people that are aware that this is a real concern and that are really troubled by this prospect. And they sort of face really tough decisions. The things like having to turn down a project that could be really positive for say, Agriculture, because it looks at targeting pests and eliminating pests in the native Australian environment, which they feel uncomfortable to do because they know that that system could be repurposed and turned into a lethal autonomous weapon in the absence of any real regulation.

John Rodsted: So regulation really is such a key factor to controlling and keeping a cap on these technologies?

Matilda Byrne: Yes, that's right. It's a key point in terms of delineating what is acceptable and what's not.

How much money? [00:10:13]

John Rodsted: Have you got any idea what kind of money is floating about within Australia at present developing various components or platforms for autonomous weapons?

Matilda Byrne: It's actually a very alarmingly high amount of money. The main area where we know that autonomous weapons or autonomous systems development is happening is 'trusted autonomous systems', which is quite an ironic name, also -'trusted systems'. This is a defence cooperative research centre. What that means is it's a partnership between the department of defence, research institutions like universities and also arms manufacturers or the defence industry. Trusted autonomous systems was the first research centre like this to be launched and it was awarded $50 million for its first seven years of operation. That's an area where we know a lot of the development is happening around autonomy for defence. But in addition, for example, just at the beginning of this year in January, the Royal Australian Air Force announced $40 million for a project with Boeing to make an autonomous combat aircraft. So that one project of these prototypes was 40 million, as I said.

We know since the release of the defence strategic update, that there's an $11 billion investment also in our land vehicles and autonomy specifically, to be made over the next 10 years. And as well as that, I think lastly, and sort of most problematic of all of these, it's less money, it's $9 million, but this is for a project that Australia says is to research how we embed ethics into killer robots. Which is a very bizarre and just problematic concept. The fact that this is something that Australia sees is good to do or important to do instead of just drawing a line and saying, we accept that fully autonomous weapons or lethal autonomous weapons will never be lawful, I think quite appalling.

Why do defence want them? [00:12:08]

John Rodsted: defenceWhy would the Australian defence force want these weapons systems?

Matilda Byrne: There's a few reasons why lethal autonomous weapons could be desirable. One of the main ones is in terms of response time. So this idea that there'll be much faster to make decisions. Some of the other things are around longevity. So if you have a person that's having to make decisions, fatigue and things, whereas these machines could just go and go and go.

And also, there's been arguments by the military, that they'll also be good for precision. Which I think as well as a bit of a flawed idea, when we think about how they do their targeting and we know that they will not be successful in targeting actual military targets correctly. And that there's this huge room for error where they could falsely or, or wrongly engage civilians instead.

But one of the huge ones, is that idea of response time in that it's beyond human endurance to do certain things. I think though on that point, what it really means is that we're prepared to then have all of these machines that then just escalate the pace of warfare. Because if we don't need a human to react, then machines can go much faster, which will ultimately cause more devastation and severe impacts.

Can they escalate conflicts? [00:13:27]

John Rodsted: One of the points you made there was about how it would escalate a conflict, because it would be response versus response and things would keep going faster and faster. And one of the roles of a commander is to take into account all sorts of things that are changing battlefield and try to de-escalate a conflict because that's part of a command responsibility.

And, and I think of an analogy to this would be the Russian Colonel back in the early eighties who held off doing a nuclear strike on America when their instrumentation to all intents and purposes showed that a full nuclear strike was heading to Russia. What's his name? Stanislav Petrov. He wouldn't launch the counter attack because he just believed something was wrong with the system. And he was proved to be right. And if it was left to a machine, it would have been a full nuclear response on America. And that would have been world war three. And it was one person in that loop who stopped the reaction. So, yes, the concept escalation or deescalation is a very important point to consider.

So could you paint me a picture of a battle using autonomous weapons? Now, what would they do instead of how would they do it?

Matilda Byrne: So I think the thing about fully autonomous weapons or having these killer robots in battle, it's a lot more insidious than what we might think about, which is, ultimately having these little robots, driving around an area at war and firing at each other. It's much closer to what we see at the present in sort of context of urban warfare, where you have drones circulating around. And then these are ones that are able to strike. You're able to have more of them go into areas. I think, initially, it's going to look not totally dissimilar to how warfare looks now. But just with a lot less accountability. And a lot less humans actually having to make these hard decisions and exercising and evaluating the current context and making sort of thoughtful decisions. Instead, it's going to be these robots flying around going, "Oh yeah! That fits my parameters. So I'm going to fire" without looking at things like; collateral damage. Is this really worth it for the strategic gains? All of these really essential evaluations that commanders do have currently, and that they have to take into account in order to maintain international humanitarian law.

Is there any human control? [00:15:47]

John Rodsted: So where's the point of human command and control in the targeting of autonomous weapons, or is that a set and forget, technology or is there a point that they can intervene to pull things off?

Matilda Byrne: What's incredibly concerning, in particular about the Australian position, is some of the remarks that they've made recently when pressed on this idea of human involvement. One of the things that the Chief of the Defence Force, General Campbell has stated is that there's never one answer for where a human would be involved. And we're one of the only countries that has stated something like this in the world, if the only. And I think what that means is we're trying to leave the door open and say, well, maybe it's at the very beginning when we choose who the target is, or maybe it's a little bit later. Or, you know, we just don't know, we're not committing to where the human's going to be involved or where if there will be any human control over targeting and selecting and choosing to deploy lethal force.

What can go wrong? [00:16:49]

John Rodsted: So what could go wrong with autonomous weapons?

Matilda Byrne: One is machine error, which I think you touched on, is definitely a huge concern. As well as that you have also a great risk of hacking, and the security of these systems which is very troubling. Because the more these machines are capable of, if they are hacked, the more negative the ramifications are. So there's other concerns also around if they could be used as a tool of oppression. So for committing genocide or other sort of atrocities and oppression. Because it isn't hard to set a certain set of parameters for the targets and all people in this one kilometer radius or whatever, into these systems and just send them off and go; 'okay - go'. And these robots don't have a conscience. So it's not like military personnel turning around and saying, no, we're actually not comfortable to fire on our a hundred thousand people that are gathered in this square protesting against the government. It's just this tool where it's free of any sort of human conscience or decision making. And so it's very, very problematic. And I guess that's not so much an instance of it going wrong, but about it being used for nefarious reasons that we hadn't necessarily thought about when we're thinking about just utilizing these systems in warfare.

Can killer robots be used for civil oppression? [00:18:07]

John Rodsted: I suppose it brings you to the point where how would the cross over into civil oppression be with autonomous weaponry? If you chose to use that to, for instance, the riots that are happening in various parts of the world at the moment, what would that look like? If people chose to use autonomous weapons against those civilians?

Matilda Byrne: Exactly. And I think though the risk that these systems could be used for domestic policing is really alarming. And the reality with these kinds of systems and the way the technology works is that if it is developed in one area, then it's easy to then change how it's used. But if it's never developed at all, because there is a ban in place, for instance, that it's much harder for people to conjure up these systems separately.

John Rodsted: So you take away the industrial manufacturing component, which can give you the ability to create masses of well-produced machinery. And it turns it into more of an ad-hoc method. So you won't get the saturation point.

Matilda Byrne: Right. Exactly.

Can killer robots follow internatinal laws of war? [00:19:05]

John Rodsted: Battle fields are rapidly changing and confusing place. Hence the term, the fog of war. Much of how orders are given and followed depends on ethics, international humanitarian law, rules of war and engagement, Geneva conventions, et cetera. Could autonomous weapons be programmed to perfectly navigate such a space?

Matilda Byrne: The simple answer to that question is no. I want to break down one element of those parts of international law that you touched on, which is international humanitarian law. And even just two key elements of that, which is the principles of distinction and proportionality. So distinction is how a combatant and a civilian, are differentiated between. And that a soldier or whatever military personnel has to decide if someone is a civilian or not. The issue with a lethal autonomous weapon system trying to do this is that, that's not something that can be very easily understood or quantified. So what is it that they would be looking for? How do they understand that a child playing in the street who has picked up a gun, for two seconds and going; 'what's this?', - in that moment, isn't actually a combatant, and therefore a lawful target? It's these kinds of contextual knowledge and things that we have to understand and evaluate and judge. That are crucial in getting the decisions right in warfare and that a machine just simply could not.

Proportionality is similar because what proportionality asks is, is this particular kill decision and the gains that we will get from this strategically, will they outweigh any damage that's caused? And so to understand that you need to have knowledge of the whole conflict that is being fought, where it's being fought, these sort of different values, as I said before, are not quantifiable. And so for a lethal autonomous weapon system, to be able to do this, it's practically impossible.

Earlier I mentioned the initiative by the Australian Defence Force to do a project, to look at if we could embed ethics and embed these laws into these robots. And the sort of things that they've said publicly about this is for instance, that, well, we know that the red cross symbol is a civilian target. And so we will teach the machine that if there is a red cross symbol, they will not fire on that target. But then I think the question is, well, it could be much more complicated than that. It's very easy to confund and confuse these systems. So for instance, if you are a non state actor, that is an enemy actor, so say a terrorist group, you then put a red cross symbol on your van and are suddenly immune. And I think there's just all of these complexities that as much as we might try to make a system of rules and a list of things that will help the systems, it's never going to be enough and it's going to cause other problems also.

Does Civil Society have any input into the process in Australia? [00:21:54]

John Rodsted: So it comes down to making that individual judgment for the specific situation that you're looking at on that specific time and day and the machinations of what that fight may be. So I gather the Australian military claims they're conducting ethical debates that will solve these issues. But these discussions are only within defence, developers and the government - all stakeholders wanting autonomous weapons. Where's civil society in this discussion? Civil society traditionally is the ethical voice and the ethical conscience of government.

Matilda Byrne: So there have been defence ethical workshops where they've been talking through these kinds of ethical considerations of using AI in defence and things like that. But as you say, they're closed groups. And so they're defence personnel or researchers in ethics that work with defence. They're not independent voices or any of the academics with great knowledge in this area that have a different opinion that might alter how defence needs to take its approach. And so this is one thing that's really problematic that civil society very much is on the outside. And if we're the checks and balances, and we're not part of those conversations, it's about us then waiting for instance, for the defence department to release their new chapter. Which is forthcoming of the military doctrine, which talks about how they are going to use AI ethically. And then read this and find all those flaws and say, well, no, this is a problem. And what we've found is that in the lead up to this, in any time where the defence department has spoken to this in a public forum, it's this constant ambiguity that where human control is shirked they will say that we're really understanding that there's ethical considerations and that we have to understand what we can and cannot automate. Or statements like sometimes we want to up the amount of AI, but other times we will pull it back, but they'll never make a commitment to rule out having no human control over the decision making. How we change that, I guess is the really big question as concerned civil society in Australia, because that is a policy that is not good enough for our defence force.

That is if they had to conduct themselves in that way, as Australians, we should be really concerned about what that says for how we hold international law in regard as a country.

Responsibility and Liability [00:24:06]

John Rodsted: I suppose that brings us to a point of responsibility and liability cause any action that has taken place on a battlefield, whether it's a standard battle or if it's going to be the use of lethal autonomous weapons, someone is always held accountable. And even under the current situation of drones, there's still a drone operator. There is somebody who is making the final decision to strike and liability will go there. So how do they see it? If you rest that liability across to a machine and the machine makes an incorrect decision and kills a lot of civilians, as simple as that, who then is responsible?

Matilda Byrne: That is a very good question. And I think that is the whole point, right? So the robot itself cannot be held accountable. That is just totally insufficient. Victims have no form of recourse. But the other problem is that it's also really hard to hold a commander or the person that deployed the weapon accountable under international law as it is currently. So what it says at the moment is that if a person can foresee that an event is going to occur, that will break international law and does nothing to intervene or allows it to go ahead, they

can then be found responsible and accountable. The problem is with using AI in particular and these lethal autonomous weapons, the person in question deploying the weapon could never know the way it functions. there's this black box phenomenon. So that essentially means that the way the weapon decides how it's going to target, why and who, as humans looking at the system, we can never understand that. And so there's no way to foresee an error or no way to know that it's going to go wrong. And so in terms of legally under international law, then being able to apply accountability, there is this massive gap, which is a huge problem.

The Guilty Act and the Guilty Mind = Responsible Individual [00:25:59]

John Rodsted: That, negates the basic legal concept with law, 'actus reas' and 'mens rea', which is the guilty act and the guilty mind and the combination of the two create a responsible individual. I suppose that when you give that to the artificial intelligence and lethal autonomous weapons, they negate that responsibility and they're passing it off into the ether for whatever.

What are the nations that are developing autonomous weapons and how far advanced are they?

Matilda Byrne: There's just a handful of countries really that are developing. So these are the US, the UK, Russia, China, Israel, South Korea and Australia. And so these are quite wealthy countries. There are countries that tend to be allied with each other in little blocks. and in terms of how close we are, it's actually really hard to tell because obviously they don't divulge all of this information publicly. But what we do know is that autonomous systems are in place. We know we can have some kind of targeting done by sensors and sort of the fact is that a crude version of the lethal autonomous weapon wouldn't be hard to make. And so for instance, professor Toby Walsh, who is an AI expert has said that in his belief, it would only take probably four weeks from what we have at the moment to throw together effectively, what is a lethal autonomous weapons system. The reason why we're not seeing this is because those systems would obviously be breaking international humanitarian law. So there's this lag time in trying to find a way to build a system that looks to be adhering to international humanitarian law that could be then used. And so this is kind of the main element that is, I think holding back the escalation from where we are now with our current autonomous systems and weapons and sort of where they're going to actually having a lethal autonomous weapon system used in a battlefield.

Asymmetric Wars and Global Insecurity [00:27:53]

John Rodsted: That list of countries that you just gave, there's a lot of wealth in that list. Lethal autonomous weapons, killer robots, artificial intelligence. Is it only really going to benefit the countries with the wealth and the manufacturing potential to develop these and then manufacture at a high rate and build up large stockpiles? I guess what that creates is a

situation of asymmetric warfare, where you've got the powerful, the wealthy, and you've got everybody else. So it creates a very uneven, geopolitical situation for conflicts.

Matilda Byrne: Yes in terms of contributing to asymmetry in warfare, having those countries that are well able to mass produce and just have a sort of constantly replenishing force of autonomous weapons that they send to warfare. What it also means is that it then becomes easier to wage war, especially if you are one of those countries.

And so in particular, for wars, it might be considered imperialist or interventionists. When you don't have the risk of having to send your own troops anymore, because you can just mass produce autonomous weapons. You don't have the same political risk of announcing to your country that you're sending your peoples to war. That also plays into this idea of asymmetric warfare.

On the other side, however, the interesting thing about this weapons is that they can also be made in a really crude form and done so relatively cheaply, depending on what you have at your disposal and the real concern about this is how they could be then repurposed to fall into the hands of non- state actors in particular. So terrorist groups utilizing a very rudimentary form of these weapons to then send out and enact various forms of violence. So it's a funny one because it, in fact, is this risk of being used in two very different ways by two very different sets of actors in a way that is problematic for global stability and the safety and security of people across the globe.

Can civil society drive a disarmament treaty? [00:29:55]

John Rodsted: There's some pretty strong examples of civil society leading the creation of disarmament treaties, such as the treaty that banned landmines, the one that ban cluster munitions and nuclear weapons. Has the stop killer robots campaign drawn much from these movements?

Matilda Byrne: Yes for sure. So I think the strength of civil society is something that we have seen be very effective and be really important. Really it's up to civil society to create the political will and the impetus to actually have action by our governments at an international level. And we've seen the success, as you mentioned, with that in the campaign to ban landmines, also for cluster munitions, and more recently with nuclear weapons. And so this idea that a coordinated civil society effort that spans countries all across the world from all continents coming together for a common cause and working to lobby for action and for a new treaty does have success and can then reduce harms to civilians in conflict by stopping the proliferation of, and use of these weapons.

Is a preemptive ban possible? [00:31:03]

John Rodsted: I guess one of the differences between autonomous weapons and for instance, landmines, cluster bombs, nuclear weapons, is they were all created and they were all deployed, they were used so effectively. The genie was already out of the bottle and

trying to create treaties that could then bring about an elimination of a weapon system that already existed was very difficult.

We're trying to create a treaty that would deal with artificial intelligence, lethal autonomous weapons, killer robots, is trying to create something before it actually is deployed and creates a humanitarian catastrophe. Are there are any precedents for dealing with a weapon system, which has been effectively on the drawing board, but not yet deployed?

Matilda Byrne: Yes there is actually. And I think it's quite a positive and exciting thing that we can preemptively ban a weapon before it takes any victims. And I think it's something that we really need to be working tirelessly towards. And it has been done before. So for instance, in 1995, blinding lasers were preemptively banned. Listeners might not have heard of a blinding laser, because they were never made. And what's also important is that laser technology has still advanced. So it's just a great example, because often what people say is that, well, if we ban lethal autonomous weapons, then that's a big problem for the advancement of autonomy in general - so this would be proponents of lethal autonomous weapons, giving this kind of idea. However, we know that other applications aren't affected because we've seen that in lasers and laser technology after the effective ban of blinding lasers. And actually the protocol to ban blinding lasers was done at what's called the Convention on Certain Conventional Weapons, which is a forum of the United Nations. And this is the same forum that's been discussing lethal autonomous weapons systems. We hope that like blinding lasers they would be able to take leadership within that forum and come to an agreement to preemptively ban lethal autonomous weapons systems also. But as talks have gone on, certain States like Russia have blocked progress in terms of launching a phase of negotiations for prohibiting lethal autonomous weapons systems. That's looking more and more unlikely in this particular forum. So it's the same forum where landmines were also discussed initially and then moved outside of the forum to effectively negotiate a really strong and robust treaty, which prohibited landmines.

US influence on Australia? [00:33:34]

John Rodsted: So how much influence does the US desire to develop autonomous weapons have on Australian policy and involvement in development?

Matilda Byrne: Obviously Australia doesn't stand up and say, "We are developing these weapons because the US is also, and we want to make sure we're on the same standing as them. And we are creating weaponry in the same league" or anything to that effect. However, I think it's quite naive to think that there is no link between the Australian and the US Alliance and why we have the stance that we do. So what we know is that Australia and it's defence and foreign policy is so linked and influenced by the sort of reliance, I would say, that we have on the US. I've actually heard one of our senators. Senator Jordon Steele-John put it that Australia has a 'realpolitik' to feel needed. And I think this quote in particular speaks to lethal autonomous weapons. This idea that Australia can innovate and be 'cutting edge' and do these extra research to put autonomy and autonomous weapons forward, that it can then funnel to the US, is this sort of big reason why Australia conducts itself in the way

that it is. And I also think it's quite a shame because I think there's no reason why Australia couldn't be closely allied with the US and still a partner in certain endeavors, but have its own independent policy and thought processes around things like disarmament. So we've seen before Australia take the lead in the Arms Trade Treaty, in negotiating some really, really constructive new international law there. But then on an issue like this, why can't Australia continue to do so and stand separate from the US and say, whilst we are looking at some autonomous capabilities in defence, we know that there must always be human control over decision making. And therefore we will support a ban in an international setting. And we will create these commitments within our defence force. And differentiate itself a little bit and be its own moral compass and take a stand internationally. Because I think really that's what Australians would like to see Australia do. I know, certainly from my perspective, in terms of our policy choices, it should be driven by what's in the best interest of Australia and what's in the best interest of the world, and that shouldn't be influenced by choices of another country.

What can people do to help bring Australia to a ban?

[00:36:07]

John Rodsted: So where to from here and what can ordinary people do?

Matilda Byrne: Civil society's role is to create political will. And that's the same here in Australia. What we know in Australia is that this issue has had very little parliamentary attention, which means it happens behind closed doors at the department of defence and in the military and what we really need to see is more discussion in parliament, more scrutiny on Australia and what it's doing. So the best things for an ordinary person to do is one) to become educated or informed on this issue. So you can look at stopkillerrobots.org, a website with all the information from a global point of view.

Also, you can follow what the Australian campaign is doing and sort of our content. We have a report that's available that you will be able to download, and have all sorts of information about different sectors of society.

And as well as that, I think if you are really compelled and you feel really concerned about this issue, one of the best things you could do is write to your local MP and say as much as a constituent of their area, this is an area where you feel the parliament needs to examine more and sort of raise it on their radar so that we can have more attention on this issue throughout the country.

John Rodsted: So basically it comes down to get educated and get your thoughts to the people who are legislators within our country?

Matilda Byrne: That's exactly right. And also share amongst your own networks and friends, so that there's a snowball effect of more people finding out.

Well, thanks, Tilly. We've been talking to Matilda Byrne who's the national coordinator of The Stop Killer Robots Campaign and good luck with your endeavors. And we will keep an

eye on how things are changing over the next few months. Thanks for talking to us on SafeGround.

Thank you very much.

How to connect with the campaign and SafeGround.

[00:37:59]

John Rodsted: If you want to know more look for us on Facebook, Twitter and Instagram - Australia Campaign to Stop Killer Robots, or use the hashtag “AusBanKillerRobots”

Become part of the movement so we Stay in Command

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University Student Views on Killer Robots

[00:00:00] **Yennie Sayle:** [00:00:00] Welcome to SafeGround the small organisation with big ideas working in disarmament, human security, climate change and refugees. Thank you for tuning into 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.

[00:00:20] Hi, everyone. Welcome to our uni engagement podcast. I'm Jenny, a current intern for the Campaign to Stop Killer Robots. I'm super excited for today as we're going to discuss a quite debated topic, fully autonomous weapons, specifically how they're linked to your university. So today I have three guests; I've got Lynn studying international relations at Latrobe, Alex, doing philosophy at Melbourne uni and Stuart doing a masters of mechanical and aerospace engineering at Melbourne uni.

[00:00:48] So I'd just like to start off and thank everyone for taking the time to join me in participating in this podcast. It is quite exciting that all of you are from different degrees and levels of studies. So I'm quite interested to listen to your different opinions and views on this topic.

How has your degree approached/included this topic?

[00:01:01] Now to get started, I'm sure all of you have heard to some degree about fully autonomous weapons, so it'd be quite interesting to know how each of your degrees may have approached a topic like this. So with that said, has this been something any of you have come across at your university, whether it's relevant to your degree or an elective, prerequisite, maybe school activity.

[00:01:21] **Lynn:** Um, nah, I haven't really come across specifically autonomous weapons. We do discuss security in international relations and global security, but no, we don't do fully autonomous weapons

[00:01:36] **Yennie Sayle:**Fair. Yeah, well, you know, this hasn't really been a topic, really brought up a lot in my degree either. I do international studies myself and we may have possibly brushed through this and in my global securities class, but probably vaguely talked about, so it hasn't really been a focal point of topic.

[00:01:56] **Stuart:** Yeah. I've come across it briefly in my stuff. Um, I've done a [00:02:00] couple of subjects related to control systems, like learning how to get drones and things to fly, but they haven't really told us specifically about the weapons and that sort of thing.

[00:02:11] **Alex:** Yeah, I've done a little bit about like ethics of AI and stuff like that. And then a couple just done a couple of foundational computing subjects as well. I'm talking about like, I guess like leading into like the biases of. the coder into the coding and stuff like that.

Opinions of AI?

[00:02:26] **Yennie Sayle:** I'd just like to know as well what your opinions were on AI? Um, Stuart, I know you're doing engineering. So in comparison to like Lynn or Alex, for example, who study international studies, what are your opinions on AI?

[00:02:40] **Stuart:** [00:02:40] Um, I definitely think that AI is the way of sort of progressing into the future with most things. Especially in like, you know, manufacturing and that sort of thing AI is very important.

[00:02:50] I've studied alot about helicopters and, bushfire-fighting and that sort of stuff, and designing helicopters and aircraft, to be able to do other things, as well, AI is really important. Because we're more and more moving towards keeping the pilot out of helicopters and planes and things because you can be more efficient and it takes human error out of it.

[00:03:08]But I also think that generally in terms of weaponry, it's kind of a step too far, in my opinion, because it really de-personalises it.

Should it be a topic covered in studies like politics?

[00:03:19] **Yennie Sayle:** Yeah, absolutely. It is fascinating how a subject like this, which also could have like such grave detrimental effects to our security. Isn't really a major point of topic in degrees that do have a focus in its politics or maybe possible implementation like international studies or law, for example. What would your opinions be Lynn.

[00:03:39] **Lynn:** Yeah, even when we have discussed security and anything to do with weaponry, it hasn't been covered in detail, which yeah, I definitely think that that is necessary in terms of like politics and international security.

[00:03:57] **Yennie Sayle:** Yeah, absolutely. And what do you think would be like your major concerns when it comes to international security and having AI?

[00:04:08]**Lynn:** Right now there isn't any constructed guideline in terms of the inclusion of autonomous weapons. So I definitely think that that's necessary you know, there's already that threat with nuclear proliferation that this type of weaponry would definitely be a lot more easier for countries to implement as opposed to nuclear weaponry. So there definitely needs to be some immediate guideline.

On some of the concerns...

[00:04:36]**Yennie Sayle:** No, definitely. I mean, you know developing these killer robots can destabilize international security and obviously as well, society's humanity. And as you said before, it can raise a lot of legal, moral, ethical, and security concerns to say the least. So, I mean, we can also say that maybe in certain complex and unpredictable conflict situations, I mean it's rest assured that these weapons will lack the ethical and legal [00:05:00] judgments crucial to protect civilians, I can say.

How do you feel about research contributing to killer robots?

[00:05:04] Stuart, could you just tell us a bit more about, um, studying helicopters and autonomous helicopters; so how would you feel if you did research with your uni into obviously autonomous helicopters and then found out maybe parts of that research was used to advanced developments of lethal autonomous combat helicopters for the Australian defence?

[00:05:25]**Stuart:** Um, I would probably feel pretty bad about that, to be honest. Especially if I wasn't told anything about what the research is being used for and then I found out that it was being used to like go into warzones and shoot people and stuff -that would be pretty bad.

Is there a need for tech-ethics classes?

[00:05:40] **Yennie Sayle:** Yeah, obviously I can imagine. And I mean, when studying this topic, or like when going into this topic, I guess, being somewhat aware of the major risks, have you ever thought about whether maybe there needs to be a tech ethics class as part of a degree that offers AI, IT or robotics, or maybe whether an ethicist should be a part of a research project?

[00:06:03]**Stuart:** I would think that as part of a research project, it's probably a really good idea. Because obviously the people that develop the back end and stuff, really are only looking at numbers and codes and don't think about the rest ot it. Like when we are designing helicopters and looking at systems, that sort of thing, we really don't get taught very much about like what's actually happening with the helicopters. They're really just telling us about the systems. So , it would be very easy for you to develop an entire system and then just that could be completely detached to what it's actually being used for.

Possibility of your research contributing to killer robots…

[00:06:33]**Yennie Sayle:** Absolutely. within my degree, I've obviously never come across this topic specifically, but I would always think that, I mean, if you don't have a class or course educating you on why you should stop developing something that could potentially maybe be something dangerous, how can you trust that your research isn't being used for that same purpose by either programs or schemes or grants or whatever, with the Australian defence force.

[00:06:57] **Stuart:** Mmm also because, generally the university owns [00:07:00] all the work that you do while you're actually at the uni. So you don't really have any say in what your stuff does afterwards 'cause it's all based on what the university's decided.

[00:07:08]**Yennie Sayle:** Yeah. And how crazy is that though? Because wouldn't, you want to know, at least as a student or someone that is doing that research where your research is going and how it's going to potentially be used in the future.

[00:07:18] **Stuart:** Yeah, definitely.

On university research project funding;

[00:07:20] **Yennie Sayle:** Mmm. So obviously being university students, have you guys ever thought about who is funding these projects concerning AI robotics, et cetera, or you know, where your research or that research is going specifically in a general sense?

[00:07:38] **Stuart:** [00:07:38] I hadn't really given much thought into that at all, to be honest, where the money is actually coming from.

[00:07:42] **Lynn:** [00:07:42] No, I haven't either, but, um, now that this has been brought up, I definitely think it is an area of like weaponry that needs to be prioritized. Because in the chance that this is used for war, you are dealing with the risk of, um, of people's lives and like civilians. So [00:08:00] they definitely need to include some kind of ethics, um, guideline, outline some kind of official assessment of the ethics that would come into play when dealing with killer robots.

[00:08:15] **Yennie Sayle:** [00:08:15] Yeah, I mean, you're right. I never really took into consideration these factors at all. I only did while I was mapping up the links and connections between universities and defense research programs, while I was doing the webpage for the Campaign to Stop Killer Robots. So it was actually insane how many connections universities do have. And I know that there's one, for example, with Melbourne uni; I think it's with Lockheed Martin, the new STELaRlab, which is their Science Technology Engineers Leadership and Research laboratory. So the Defence Science Institute actually coordinated the collaboration with Lockheed and Melbourne uni and their research focus is specifically on robotics, AI, sensors, and communications and all that. So it's actually crazy to think about the [00:09:00] possibility of certain research being used for developing these weapons, but it's actually even more crazy to realize how little students know or are aware of this issue.

Concerns- arms race/proliferation/misuse/accountability;

[00:09:11] So, um, I guess with saying that, as we know, fully autonomous weapons are quite abhorent weapons and in comparison to nuclear weapons, these machines are not costly at all and would be easy to mass produce significantly. So I know a few of us do like philosophy and international studies and with engineering as well, what would your thoughts be on this? I guess in other words, with technology advancing at such a rapid pace, what are your opinions on these weapons being available, proliferated and maybe the potential for an arms race?

[00:09:41]**Stuart:** [00:09:41] Um, one of the things that we've always seen through history is that a lot of times stuff that is developed for military use becomes available to general public in one way or another. And kind of a scary thought is that potentially, these unmanned drones that can fly around and shoot people could just be available to like, I don't know, some [00:10:00] random guy in his shed could like make one and fly it around and, you know, shoot people. Um, and that's kinda the scary thing of all this technology becoming so

much more wide spread and available and cheap. Cause like no one can in their backyard, you know, make a nuclear bomb, but it's a different story.

[00:10:17]**Yennie Sayle:** [00:10:17] Yeah, well, a hundred percent even like the moral implications that come with that, right? So we have like these weapons that could potentially have obviously the power to kill people, so you know, they can take lives. Wars can happen so much more often because obviously there will no longer be any more human soldiers. You know, there would be the blur of accountability if something goes wrong. What if civilians get killed? Or if the machine glitches or get spoofed, like who is responsible for that, or who has that accountability? What if, you know, civilians could just be collateral damage because robots don't have obviously the fundamental principles of humanity or respect for human life to make a judgment call that could potentially save lives rather than take it. So, yeah, I do believe that youth engagement right now is super important for that, because it really is time for students to become more informed about the situation that is happening right now.

[00:11:10]**Alex:** Um, yeah, it's also, I guess, in terms of like a kind of new generation of weapons technology, the ability for it to be, um, hacked and, um, brought again onto the person who actually owning it and/or allegedly has control of it becomes a lot less certain or assured in comparison to other kinds of weapons like nuclear or, you know basic guns. So even if like the general population may not have direct access to it, um, there is a much larger risk of the safety of the people who do have it, which provides an even further danger.

[00:11:47]**Yennie Sayle:** Well, yeah, a hundred percent. I mean, there's also the risk of going to war and in those wars if, you know, a computer or a robot is programmed by their algorithms to, you know, shoot someone or kill someone or target someone that, you know, has a gun or whatever, say a child picks up that gun, during war, will that child be collateral damage What happens to that? So that is also like a big issue with programming killer robots to do certain things like that.

Should young people/uni students care? University responsibility and transparency

[00:12:16] Now, going back to our discussion as a student, do you think that young people should really start taking this seriously and should uni students really start caring about a topic like this?

[00:12:28] **Stuart:** I would say that definitely uni students in relevant fields should be informed about it, that people on the cybersecurity side of things, or like, um, programming AIs or developing the mechanical side of things should definitely be made aware of what's going on. And, you know, the potential that what they're doing could go to these things. I think there's a chance that, you know, the average students, it might not affect them very much. It's quite difficult for them to do very much about it. But, um, I mean, obviously any awareness is still very good. [00:13:00]

[00:13:00] **Alex:** Um, I also think to assume that the onus of the awareness of this weaponry is on the student, I think is a little bit misguiding, because it should really more be about, uh, the transparency that the uni has towards, um, the students and the people that are sponsoring and funding the university. The transparency behind the funding, transparency behind their, um, research. So as everybody is more in the loop, rather than the question of whether students should be trying to seek it out, it shouldn't be a question of students having to go in and do their own work and seek everything out. It should be readily available information.

[00:13:38]**Yennie Sayle:** [00:13:38] Oh a hundred percent. I definitely agree with that as well. Like universities should establish clear policies and clear regulations that do state, you know, that they will not allow its research by staff or students to aid the development of killer robots. And it would be great to see universities publicly commit to that as well. But I also do believe that, you know, [00:14:00] some students aren't aware of this, so although it's great to have transparency with the university, I still do believe that there are actions students can take to help that, if that makes sense.

Student taking action;

[00:14:11] **Lynn:** [00:14:11] Yeah. And at university, you are in that space of education that, um, we definitely have the opportunity to access resources that can inform us on what's going on, in regards to fully autonmous weapons, but I do agree that there needs to be more transparency by universities because I wasn't aware before this, that, um, my university would be involved or even thought of it as a idea. So, um, yeah, there definitely, there needs to be more indications that that's, that's a, that's a, that's a thing. That's an area that the uni is involved in.

[00:14:48]**Yennie Sayle:** [00:14:48] Yeah, absolutely. I mean, the implications of such research, obviously to build lethal weapons will have grave effects to our future. And we will be the ones dealing with the detrimental effects of an unstable global state, obviously, if this plays out. And given the link between this topic and universities, I do believe students do have as well, a big role to play in educating ourselves and also being aware of this issue.

What can students do at uni to raise awareness?

[00:15:13] To wrap things up a bit. What do you think you can do? Or what do you think your universities should do? And as a uni student what do you think you should do to take action regarding this topic and how it can help to raise awareness and all that?

[00:15:28] **Lynn:** Definitely, yeah. Education. We should inquire about ethicists being included in that kind of research or in that field, that area, whether it be like computing, IT, AI, we should advocate to have more moral guidance put in regards to that study. And perhaps like, yeah, creating clubs at our university or talking about relevant issues occurring in the defense force relating to autonomous weapons.

[00:15:58] **Yennie Sayle:** [00:15:58] Absolutely. Or even just joining clubs. Like that would be great just for yourself as well, to be aware of what's going on in the issue, but also to, um,

create dialogue between, universities and students and staff and all of that. Just get it out there in the open.

[00:16:13] **Lynn:** We were talking about this, definitely international relations should have more focus on where the future of our weaponry is going, because it hasn't been something that has been discussed in detailed, but definitely is necessary as we're talking about global politics to include where our security is heading potentially.

[00:16:34] **Alex:** I think also I guess slightly more immediate group awareness; one of the best ways to do it through uni is through, um, like the student union that's in place. So approaching and trying to, um, open up some sort of dialogue for the student union to raise that awareness, to send out, I don't know, informative emails or, start up like a webinar or something like that, about these things, um, is a very good way to go about raising awareness [00:17:00] within the university itself .

[00:17:01] **Stuart:** Yeah, I would say also alot of the time the student unions will actually go into lectures and stuff inside the front and talk to the students. So it's quite a good way to like even target specific courses and specific subjects and things and go to them and open the dialogue with them and make them aware of sort of what's going on. Obviously it's not really possible right now, but you know when everything goes back.

[00:17:21] **Yennie Sayle:** Yeah. Yeah, totally. I mean, even if you want to put pen to paper as well, just like write to your program coordinator about whatever's lacking in your courses and make sure that, you know, it does become a prerequisite or an elective or something that you find important.

[00:17:39] So I'll just wrap it up here. Thank you guys for participating in this podcast and thank you all for listening.

[00:17:45] If you want to know more, look for us on Facebook, Twitter, and Instagram on Australia Campaign to Stop Killer Robots or use the hashtag ausbankillerrobots. Become part of the movement. So we stay in command.

[00:17:57] Please make sure to share with your friends. And to [00:18:00] access this and other episodes along with the full transcription and relevant links and information, head to safeground.org.au/podcasts

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 sway 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

Who Is In Command?

John Rodsted: [00:00:00]

Today we speak with Paul Barratt AO, Australians For War Powers Reform [00:00:19]

Welcome to SafeGround, the small organization with big ideas. I'm John Rodsted. Today. We're speaking with Paul Barrett. Paul has had a long career in Australia's public service since 1966, but what distinguishes him from many others within government and the public sector is his strong conscience.

He's held many senior roles within government, notably within the department of trade, primary industries in energy and the business council of Australia and Secretary of the Department of Defense from 1998 to 1999. It was his senior role in the Department of Defense that put him at odds with the government positions and policy.

This led him to leaving the public service. Since then, he's had a very strong voice on how and why Australia goes to war and the powers that a few have to commit us to war. He's also one of the founders and current president of Australians for War Power Reform. Welcome Paul.

Paul Barratt: [00:01:12] Morning John

John Rodsted: [00:01:13] Originally you studied physics and graduated with honours from the University of New England. How did you go from serious science to Australia's public service and Department of Defense?

Paul Barratt: [00:01:23] Well, John, throughout my, undergraduate career, I was intending to do a PhD in physics and become an academic physicist. And towards the end of my honors year, I read this interesting little advertisement in the Sydney Morning Herald, I had sort of had a rough rush of blood to the head and joined the public service.

And that interesting little advertisement said the department of defense was looking for people to monitor scientific developments of defense interest in the Asia Pacific region. So I thought that sounds interesting. And I applied for it months later and security clearances later, and what have you? I turned up for work and discovered that the scientific developments of defense interests were China's nuclear program. And so that, that launched me on a very interesting, couple of years in the intelligence community. And it was a time when China's, program really was nice and they just had their third test when I started and the cultural revolution was just beginning. So it was a very interesting time in Chinese history and in the history of our region.

John Rodsted: [00:02:31] When you entered the department of defense in 66, it was right in the early days of Australia entering the Vietnam war. You were in the department of defense during the war. How were Australia's policies and actions shaped, and then by who?

Paul Barratt: [00:02:44] The policy to go into Vietnam was shaped very much by the prime minister Menzies himself. And, I was in the fortunate position of being just one year too old to be called up in the first draft for Vietnam. but some of my university friends were conscripted and set off the fight in a war that we should never have been in.

An Insider To Policy and Decision Making [00:03:04]

John Rodsted: [00:03:04] As a public service insider, you became privy to how policy and decisions were made. And this is, was not always a fair and honourable process. What kind of things and opinions did they drive Australia towards?

Paul Barratt: [00:03:17] Well, if we stick to the defense domain, quite often the real consultative process wasn't around whether or not we should get involved in a war, but how we would get involved. So the prime minister would make a decision that we should go off to fight alongside our American ally. And then first thing that would come to cabinet would be, what form will this assistance take? There's too much power and too few hands at the beginning.

John Rodsted: [00:03:44] So It would sort of come down to the US would effectively insist that we entered a war, supporting them. And as long as the prime minister agreed to that, then, we were committed.

Paul Barratt: [00:03:56] Actually, it's worse than that, John. More often we would insist on participating in a war to which the US hadn't invited us. And that was very much the case with Vietnam. We, our government persuaded them that they should have us along. The US military was not particularly enthusiastic because they find it easier to fight alone and feel that they've got the capability to do so. That turned out to be wrongly in most cases, but they feel they can do it. But the American political system likes to have some extra flags on the poles show that they're involved in a major coalition. The same thing happened with Iraq and Afghanistan. John Howard volunteered us into those wars. The Americans didn't ask us.

What Role Does Opposition In Parliament Play? [00:04:36]

John Rodsted: [00:04:36] With any dissent that may be either within government or within parliament, how are those voices then heard?

Paul Barratt: [00:04:43] Well, with great difficulty. There's unlikely to be dissent within government when the threshold decision's already been made, backbenchers will feel that if we're off the war, their job is to support the government and support the troops in the field. And when first, contingents went off to Iraq, Simon Crean, the then opposition leader leading a party that was opposed to the war, took very great care to distinguish between being opposed to the war. But on the other hand, wishing the troops all the best. We support our troops in harm's way, but we don't think we ought to be there. But that's a pretty difficult thing to navigate.

And as for parliament that depends on whether the government permits the matter to be debated at all. We committed ourselves to Afghanistan in 2001, and the very first parliamentary debate on Afghanistan was in Julia Gillard's time.

The Australians For War Powers Reform [00:05:38]

John Rodsted: [00:05:38] You're a strong advocate for changes on how we go to war. You helped form and chair the Australians for War Powers Reform. What's the organization? And what do you want to see change?

Paul Barratt: [00:05:49] The organization had its origins in something that, in 2012, we call the campaigns for Iraq war inquiry. Our first objective was to get something like the Chilcot inquiry that was going on in the UK to find out how the decisions were made and what could be learned from that process. But the real aim was to use this as a case study in why, the power to deploy the ADF into international armed conflict or to be relocated in the parliament. We expected and we knew a lot

about how the decisions had been made or able to infer a lot by research. And putting various bits and pieces together, but we wanted an open public inquiry, which would demonstrate that our decision-making processes were flawed. And that it was too dangerous to leave it in the hands of a very small number of people. And so now what we want is to relocate the power to send the defense force in any kind of armed conflict, to be relocated to the parliament. A decision only taken when the parliament, and in our view, both houses have accented to that.

Is The Response Time An Issue? [00:06:56]

John Rodsted: [00:06:56] If you take the decision away from the prime minister, removed the so-called captain's call, wouldn't it take too long to respond to any threats in a real timeframe?

Paul Barratt: [00:07:06] No, that's a great, great misapprehension. Most of the Australian defense force quite rightly is held in a pretty low state of readiness. So it's training and doing practice manoeuvres and what have you, but to get your equipment into a fighting state, it requires a lot of preparation. For example, when we went to Timor, Admiral Barry and I advised the national security of committee of cabinet in February 1999, that we ought to get ready have the option to deploy, to Timor as that plebiscite was looming, because we could see that there might be a, breakdown of the situation there. They were finally ready to deploy in September. So it took us seven months and the expenditure of almost $300 million to get everything really up to scratch and to get commanders at various levels used to commanding operations in the field at that kind of level. So we have a ready reaction force in Townsville, which is basically a battalion, and uh, associated elements. And I would be quite happy to say, to have a framework in which anything that the ready reaction force could handle could be done on the decision of the government, because that would be an emergency type situation. But anything that required a larger deployment, ought to be debated and authorized in parliament.

Will Politics Get In The Way? [00:08:25]

John Rodsted: [00:08:25] if the decision had to go through parliament, couldn't it get held up by minor parties or in the Senate or whatever, just people being divisive because they can playing politics with the decision?

Paul Barratt: [00:08:36] That's an argument we often hear. If there was any genuine threat that any major political party would be opposed to the deployment and of course, any situation in which the ALP agreed with the government or the coalition, agreed with the ALP, depending on who's in government. If the major opposition party agrees with government, the minor parties have no role at all. So that concern sounds to me like a concern that it might be difficult for the government to engage in wars of choice. And of course, that's the whole point.

John Rodsted: [00:09:11] And I suppose that separates it perfectly between threat and adventure. One, you're actually going to respond for a real threat, that's threatening Australia and Australia's interests. And the other is getting involved in an adventure that's got nothing to do with us, and that would be the separation

Paul Barratt: [00:09:27] To put it brutally, I would say to government of either's side, if you can't persuade the opposition, that our national security, isn't just a really engaged here. We ought not to go.

How to Keep Intelligence Secret? [00:09:39]

John Rodsted: [00:09:39] So if the party that was in power that had government, at the time had access to secret intelligence that they can't talk about, how would they with this?

Paul Barratt: [00:09:46] There is a couple of ways you could deal with that. That's an argument we often hear and it's sometimes it's a bit hard to keep a straight face. When people talk about that when we reflect back to the WMD in Iraq that turned out not to exist and everybody knew they didn't exist. Hans Blix United nations weapons inspector certainly knew they didn't exist.

But let's take your question at face value. There's a couple of things you could do. What we do right now is, in any national security situation, the government iwill brief the leader of the opposition, in private and in secret. That happened in relation to operations in Syria. you could have a proper national security intelligence kind of committee in the parliament, in which those members of the committee were security cleared to receive all the information that's available so that you would have all parties involved in looking at the available evidence. And they could go into the parliament and say, well, we've seen the intelligence and we are convinced.

It's rare that secret intelligence is the only thing you've got. Very often there is information in the public domain as well. In fact, I think most intelligence agencies should devote more effort to analysis of what's in the public domain because you can learn a lot from that. An option would always be available to government would be to say; Here what you're seeing in the public domain, and a simply without elaboration, say our secret intelligence bears out what we've concluded from the open-source material. So if there's a will to do it this way, you can certainly find a way to navigate your way through that real difficulty of, how you handle secret intelligence.

John Rodsted: [00:11:31] The secret intelligence effectively just becomes a confirmation of what is a greater information stream.

Who Supports War Powers Reforms? [00:11:37]

Yeah. What kind of support have you had for your organizations aims and ideals and where should it go from here?

Paul Barratt: [00:11:44] We've had support from various members of various parties and a lot of public support and I'll come back to the public support. The most tangible support we've had from a political party is a resolution that was passed on the floor of the ALPs national Congress in 2018 in Adelaide when there was a vote on the floor that an incoming Labor government would establish an open public parliamentary inquiry into how we go to war. And I think that was a very, positive step. I think that's a very good way for a political party to get into it because in not pre-committing themselves to change the way we go to war, but they're committing themselves to establish the facts. It would give those who are seeking a change, the opportunity to put their case. And it would put the people who dismiss it in through the various arguments that we've just discussed. They would have to defend it in that kind of forum. So we would end up with a more honest debate.

Another element that these people will tend to use to argue against us is that it's really wouldn't make any difference because everyone had just vote on party lines. What I would say, in such a parliamentary inquiry, I think you would find that being asked to take responsibility for, something that would involve death and destruction

on both sides; I'm putting the young men and women of the ADF in harm's way and do inevitably involving civilian casualties. You would end up with something that looks very much like a conscience vote. I don't think you can assume that everybody would vote on party lines. If we have a parliamentary inquiry, we can flush all these arguments out.

I'd like to see that commitment find its way into the ALP platform, but I very much hoped that, an incoming Labor government, such time as that happens, would proceed along that those lines. Our movement would like to persuade all major political parties that, this is a desirable change. That once one's on board, I think it will be easier to get the others on board.

You've had some pretty good support from some fairly major players within the Australian government and former Australian defense. Can you talk a little about the opinions of some of the others who are involved in your organization and why they think it's a good idea to change the threshold for going to war and the captain's call?

Well, I think were unanimous in feeling that, the responsibility for this order rest with the federal parliament and it ought to be debated and, fully thought through. One of the things that don't happen when it's just decided by cabinet or by the prime minister is a proper analysis of the legality of going to war. And what we would all like to see, is before parliament takes a decision that the Attorney General or Solicitor General tables, a formal written opinion about the legality of this war. Because the best legal opinion about the Iraq war is that was illegal. And no one takes very seriously the reliance that we had, on very old UN security council resolutions that were passed for another purpose.

So, apart from in our movement, we've had people like former Chief of Army, saying that this move ought to take place.

An Artificial Intelligence Arms Race? [00:14:56]

John Rodsted: [00:14:56] Can we shift the discussion a little towards the current arms race that's starting to get going, which is the development of killer robots? Just the talk of killer robots sounds like a bad dream, but they're real and governments worldwide are developing and investing in them. What do you understand these to be and how would they be deployed in the battlefield, for that matter into urban environments?

Paul Barratt: [00:15:19] I think the word robots conjures up in the public mind, things that might move along the ground and have maybe have arms and legs. But what we're really talking about is any kind of lethal autonomous weapon. And that very often would be a more advanced form of armed drone that would have its own decision making capability. And, that would take human agency out of the decision to launch a lethal strike.

Now it gets to a little bit fuzzy because I was reading this morning, someone from the US army talking about the progress they're making with them. And they're saying that they'll never take human agency out of making the decision, but they're saying the way these drones, the way these weapons work, you have a collection of sensors that will bring a lot of data together and then make a recommendation. And that recommendation would include which weapon located where would be the best to use for this purpose. Now this US army spokesman was talking about reducing the decision making time from the censors to someone pressing some button from 20 minutes to 20 seconds. 20 seconds, doesn't sound to me like a lot of time for

someone to make a considered decision to launch a lethal attack on someone. So the word meaningful comes into it. You've got to have meaningful human intervention, not just the fact that a human being is somewhere in this highly automated chain and the importance of human beings being in it is that, got to make some very important, decisions about, who's to be attacked, is this attack militarily necessary? And is it proportionate to what has happened or what you think is about to happen? I would have no faith at all in the ability of people to program an autonomous weapon to make those decisions without the potential for great risk and tragedy.

Legal Framework In Decision Making [00:17:14]

John Rodsted: [00:17:14] I think you hit on something very poignant there, which is reducing the response time from 20 minutes to 20 seconds, which would bring the decision down to an operator who would take it away from a commander. It would take it away from someone who was in charge of a force and bring it down to someone who is the button pusher, sitting behind a console somewhere. It would also reduce the legal framework in the decision-making process. Would that be correct?

Paul Barratt: [00:17:40] It gets harder and harder to say who is responsible under international law for the fact that these innocent people got killed. I think, illustrate the difficulty, both with the delegation of authority, and also with the discrimination.

Bias & Lack of Cultural Knowledge and Sensitivity

[00:17:55]

I remember a case it was probably 10 years ago in Afghanistan where a group of Afghan villages from a remote village were killed by someone, operating a joystick in Tampa, Florida at an area under surveillance with an armed drone. There was a group of Afghan villagers coming down from a remote village to the nearest, sort of a local town. And they left before dawn for what was a long journey. And there were four or five guys in the back of a, of a utility and someone driving. And, halfway through the journey, a young man in Tampa blew them all away. With an armed drone. Turned out that just completely innocent bunch of visitors. One was going to visit the local doctor and one was going to get a prescription, filled at the pharmacy and this sort. And he was asked why did you press a button? Because I could tell they were terrorists. How did you know they were terrorists? Because when the sun came up, they all got their prayer mats out of the back of the utility and facing Mecca and prayed. So therefore I knew they were terrorists. There's two things about that. Even with the considered human intervention, the human being, made a catastrophic error of judgment because he didn't know enough about the local culture. And secondly, how would you program an autonomous weapon not to make that mistake? And I just don't believe that it can be done. And we've seen lots of tragedies in place like Iraq and Afghanistan, where a wedding party got blown away because people started firing their rifles in the air. When, once the couple was united in holy matrimony, it will be, lets all fire our rifles in the air and someone blows them away because they're firing rifles. The old saying in the IT industry about garbage in, garbage out. What these drones do, autonomously will very much depend on the knowledge and skill of the people that are programming them.

John Rodsted: [00:19:47] I think that hits on a point of how do they identify who is the so-called enemy on a battlefield? Because yes I can see, they cannot identify who the friendlies are. It's pretty easy to put a marker on your own troops. So whether, you know, whatever that may be infrared or whatever, you can have some form of markers. So you'd see your own layout of the battlefield. But then all that does is say that everything else down there living is the enemy. Civilians, combatants, lock, stock, And I can't see how they would be able they segregate the two.
Paul Barratt: [00:20:16] Neither can I. And what we all await the Brereton report on Afghanistan. But I think what you're seeing in Afghanistan, my guess is that you've seen people who are weary after almost 20 years of fighting of not they're very clearly in situation where you don't really know who the enemy is.
A farmer standing in his field may be a, a genuine farmer standing in his field. He may also have a rifle by his feet - about to get you, but he may be a very innocent person, just, going about his normal business. And you have to decide whether to kill him or leave him alone. And, I just, cannot see that autonomous weapons are going to be an advance.

An Algorithm Mess [00:20:58]

John Rodsted: [00:20:58] There was an interview recently with Dr Lizzy Silver who's an AI developer. And the one thing that she really pointed out was how messy and how incapable AI is, It's when AI starts competing against other AI, artificial intelligence. It just turns into an algorithm mess that comes up with no real functional solutions to it. And her point was that, by the very nature, unless you got a human to pull it and go, hang on, this is going turning into nonsense, that the AI will actually go down a path where it's always trying to achieve its goal, but its goal might not be achievable. So it just turns into an absolute Yeah.
Then I suppose it brings us to the point of, whether these things are hackable or not. And, and what would be the look, if somebody then manages to hack into your system?
Paul Barratt: [00:21:45] Well, it would be a brave person who would insist on anything that's not hackable. Recent history is full of people, full of things that have, either information that's been released via hacks. And we know that all of the world's leading powers are looking at how to hack each other's IT-driven system, you know, their electric power system and, all sorts of other things. All you can ever do is say that we can't think of any way to hack it typically, or very often you employ former hackers to try to hack your systems, just to see if there's a way around it. But it would be very complacent to say I've produced something that's not hackable.
It seems that they're starting to invest in the development of this kind of technology and what it's really going to start is a new arms race. That would be expensive. And I could imagine a situation where almost annually you're shovelling a lot of your GDP into buying upgrades, buying new weaponry to counter the redundant weaponry that you had a year earlier. This would put, on a country like Australia, it would put a lot of stress on the Australian purse and to what we've got to spend on what should be the expenditure of government; education, health, whatever. have you got some comments about how Australia has got involved in arms races at our level? Not on the US level, but on an Australian level.
I don't think we've had a lot of experience of it. Because for most of the postwar period, our defense force operated at a higher technical level than our neighbours. I

don't think that's the case anymore. But, whenever we've put an emphasis on, self-reliant defense capability, we've just defined what we think we need to be able to do, which basically boils down to control the air and sea approaches to Australia. That puts you into an implicit arms rights in that as, as people's capability to come to our way increases. We might have to do more to be able to be in control. I think we're now in a situation where, um, we're probably in a, certainly in an air combat arms race. We committed ourselves 20 years ago or almost 20 years ago to the joint strike fighter, the F 35. And I've had people tell me that the Russian sourced equipment that neighbouring countries are using is more capable on that. So we might be in an arms race anyway.

Responsibility For Picking Up The Tab? [00:24:03]

John Rodsted: [00:24:03] With the prime minister, having the sole responsibility at present to commit us to war, does that also put the sole responsibility on the cost of going to war in the hands of the prime minister? It's that person who decides that we're going to spend a lot of our national treasure on going to a war? or does that get checked by house of reps?

Paul Barratt: [00:24:24] In practice it puts it in the hands of the prime minister, because whilst the constitution provides that you can't spend any, federal government, can't spend any money that hasn't been appropriated by the parliament. You can never envisage a situation in which the prime minister would commit us to combat and the parliament would refuse to vote the money. Because that would leave the troops high and dry. So once we're at war, the parliament basically has to get dragged along, funding whatever executive government says it needs to sustain that combat.

Will Killer Robots Be Used If We Get Them? [00:24:56]

John Rodsted: [00:24:56] The military by its very nature is always in the business of, I suppose, force multiplication acquiring weapons that are gonna give it, sort of more bang for its buck, If we went down the path of building an arsenal of lethal autonomous weapons, do you think the very fact that we had them that would create our threshold to be combative would be less, and I'm not talking from a prime minister's perspective. If you're a commander in the field and you've got stockpiles of, say, artificial intelligence, drones at your disposal, would that make your decision making to engage - a lower threshold or a higher threshold?

Paul Barratt: [00:25:30] I think it would be a lower threshold. Once we've got them in our, inventory, they would come to be used and it would be very hard for, anyone in the civilian space, you know, like our political leaders or anyone else to tell the chief of the defense force, not to use weapons that in his military judgment, the troops needed to get themselves out of a hole or to achieve what they've been sent to achieve.

Weapons and Proportionality [00:25:53]

John Rodsted: [00:25:53] And I guess it brings us into the discussion about proportionality and there's a number of benchmarks with proportionality in weapons. A couple off the top of my head would be the, poison gas after world war one, where we saw what a nightmare that created to people who were gassed. The convention was created and I think 1925. then the other one would be, blinding laser weapons from I think 1992, which, had the ability to blind anybody on a

battlefield and that technology was beaten before it was ever deployed in war. And the two pragmatic ones would be the landmines treaty of 1997 and the cluster bombs treaty of 2008. We, do have a history of looking back or even looking forward in the case of the blinding laser weapons and choosing to either eliminate a functional weapon system or stop one that got started before it was deployed.
I guess it comes down to the thing of having a prime minister or ministers or decision-makers who don't just get seduced by the latest, greatest technology that's being offered up on a plate. And this would probably be autonomous weaponry.

Campaign Vigorously to Outlaw Fully Lethal Autnomous Weapons [00:26:55]

Paul Barratt: [00:26:56] What you say is true, but the dilemma that would face a government is that if these are not outlawed and other people are getting them; are we forced to respond? And, of course, the nuclear non-proliferation treaty was, drawn up, to avoid that kind of situation. that That as these things spread, other people feel obliged to equip themselves with those as a deterrent. So by far, the best option that I can see for an Australian government is to campaign very vigorously for these things to be outlawed. That would, no doubt cause some friction with our allies in the United States, who by the way are not parties to the cluster munitions treaty. The United States refuses to have anything outlawed as it applies to the United States. But nevertheless, I think we should be campaigning to have those things outlawed. And hence not equipping ourselves with them.
John Rodsted: [00:27:46] So in the case of the use of lethal autonomous weapons, what would you imagine some of the scenarios of a failed strike could look like if someone deployed these and where could that go wrong?
Paul Barratt: [00:28:00] Well it could go wrong in almost any conceivable way. But typically, the algorithm goes wrong and you attack people who ought not to be attacked, including perhaps friendly forces. And also of course, what if the weapon was hacked and turned back on us? Or if you just fail to complete the task? You go into this business assuming that this very, very complex and sophisticated piece of equipment will work perfectly. Imperfection could lead to all sorts of failures, including damaged your own side.
John Rodsted: [00:28:32] That brings us to a lot of arms manufacturers who would love to have manufacturing of lethal autonomous weapons because it's going to provide them a continual stream of investment that every year someone has to go and buy the upgrade or get the replacement technology. And from a Sharemarket perspective and from a corporate perspective, that would be quite attractive. Although it wouldn't be terribly attractive on the ground. I suppose that's another risk that we'd be stepping into.
Paul Barratt: [00:28:58] No and I don't think either our national or the international approach to weapon systems ought to be driven by the interest of the arms manufacturers. I think we come to national and public interest first. And see the interest of arms manufacturers are subordinate to that.

The Role of Universities [00:29:14]

John Rodsted: [00:29:15] You know, your origins came from the study of physics and a university and universities are always looking to solve technological problems. And, that's part of the greatness of universities, is these brilliant young minds have got

problems and they, they take them on and they create function out of the ether really extraordinary stuff. Should the universities be looking at limiting what they do with lethal autonomous weapons or at least with the various platforms that would be employed in this technology ?

Paul Barratt: [00:29:43] I think so. We don't expect our universities to be doing research on biological weapons or chemical weapons except possibly for strictly defensive purposes. I can see a role for universities to examine how you might defend yourself against these things. And certainly, for, people in the sort of arms control kind of space in universities to be thinking about how you establish an effective regime that, that outlaw such weapons. But, to have our universities go into developing these things or some aspect of them with their ears pinned back, I think can be a very bad idea.

John Rodsted: [00:30:22] It sort of separates it into two spaces. One would be about technological development, you know, getting out and doing the software and then working out what the platforms are and the other would be the ethical sides. The ethical investment would be overriding the technological investment.

Paul Barratt: [00:30:39] Yeah our efforts should be directed to the ethical side of this issue, not the technical side of it, except to the extent that we need to understand the technology in order to defend ourselves from it.

John Rodsted: [00:30:51] Do you think these are a step too far or there is a space somewhere within the defense landscape for them?

Paul Barratt: [00:30:57] I think they're a step too far. When it comes to killing people, you've got to have people not only in theoretical control, but ineffective control and accountable for the decisions they make.

Trusting The Prime Minister? [00:31:07]

ohn-rodsted: [00:31:08] Trusting the prime minister in the past or the present or the future to make the right call going to war. Do you think they have in the past or they would in the future, is that a decision making perspective that is trustworthy or should there something else?

Paul Barratt: [00:31:22] Well, we've, seen in, Vietnam, Afghanistan and Iraq, we've seen the the prime minister of the day make the wrong decision. We also saw Tony Abbott make a decision to extend our operations in Northern Iraq, against ISIL, to extend those operations into Syria. And we saw him talking about, putting a battalion into Ukraine for God's sake, to secure the site of the crashed aircraft. I don't think you can rely on prime ministerial decision making at all. And, I should mention that Malcolm Fraser was, while he was alive, was the patron of our organization. And he, he argues that, a, prime minister always going to get his way in cabinet if there is something he really wants. And it's too easy for a small group like that to get involved in group think and not think at right through just, You know, we've had a busy morning, and it's lunchtime, you know, let's, let's make this decision and get out of here or just simply listen to what the prime minister have to say and say, yes, prime minister, that's fine. And not really unpick it. uh, no I would not trust any prime minister to make the right call.

John Rodsted: [00:32:27] So it really sounds like we're getting to a step too far and at the moment there is work on the development, hopefully of a treaty and things might come to a head next year. Let's hope so, Paul, thanks so much for your time

and thanks for joining us with SafeGround and good luck with getting some changes to the way Australia gets committed to go to war.

Paul Barratt: [00:32:45] My pleasure, John. Thank you very much

John Rodsted: [00:32:48] If you'd like to know more about Paul Barrett's work with Australians for War Powers Reform, please visit their website. www. warpowersreform.org.au