##### [00:00:00.] - Peter Förster

On behalf of the initiators, I would like to welcome everyone to the event "Preventing combat drones in Germany - a chance for their international outlawing and stopping FCAS (Future Combat Air System?". This is the third and last event of our series "Germany and Europe at the Crossroads: Armed Drones and Digital Weapon Systems.".

<*längere Passage mit technischen Hinweisen an die Zuhörer>*

This meeting has been organized by the Drone Campaign and the Allois-Stoff educational section of the Deutsche Friedensgesellschaft. I would like to thank in advance all the other organizations which made this event possible by their political and financial support: the Deutsche Friedensgesellschaft, Brot für die Welt, the Catholic fund, the Berta von Suttner foundation, Attac, the Fellowship of Reconciliation, and the Friedenskooperative.

This event is happening after peace activists here and throughout the world succeeded last December in stopping the ready-for-adoption plans to arm drones for the Bundeswehr. This provisional halt to arming of drones in Germany also puts in question the largest European arms project of these days: a fighter aircraft model that is intended to be accompanied by swarms of drones, and whose costs are estimated at an unbelievable 500 billion euros. The decision on further financing is supposed to be made by the Bundestag in the coming months – with this Webinar series, we also want to lay a foundation for preventing this project, the "Future Combat Air System”, (FCAS). Just imagine how many people would still be alive if this money had been spent on worldwide health care in recent months.

Welcome news about this reached us today. Further financing of the Eurodrone was supposed to be voted on next week, which Germany does not wish to arm for the time being, but which is designed to be weaponizable, and which the other European countries intend to arm. But today we hear that there is still no proposal for the Appropriations Committee. That is welcome news; perhaps someone can say something more about this later.

In the two previous events of this series, witnesses to the bestial drone wars, whistleblowers and anti-drone activists have made clear how urgent it was to stop the arming of drones in Germany. "Iron rained from the skies”, one participant wrote about the drone attack on Nagorno Karabach. The attack on Nagorno Karabach was preceded by massive arming with combat drones by Azerbaijan. This makes it clear that these weapons lower the threshold for wars of aggression; in order to prevent further Nagorno Karabachs, the spread of these attack weapons must be hindered now.

In the second meeting, the journalist Emran Feroz and US whistle-blowers have emphasized that drone warfare itself means terror for the civilian population, and gives birth to terrorism. With their courageous and encouraging NO to this war, they show that these wars which are made by people can and must also be ended by people.

At this point, I would like to thank all the speakers of the previous events, which are now available as videos on the Web sites of the Drone Campaign and the DFG. Do distribute these videos.

The intent of today's meeting, to monitor, disarm, and finally to ban combat drones internationally, may seem utopian or naive in view of the arms race and the expansion of drone wars.

*< deleted passage about Washington Post article, because he realized he had misinterpreted it.>*

Let me remind you that military sabre-rattling and military aggressions are in blatant contradiction to the standards of the international community today. The political, social, and cultural rights of all people in a world of peace and solidarity have essentially been adopted by the United Nations as a consequence of the Second World War. So it is all the more urgent for us to strengthen the principles of cooperation and a rational approach to the challenges of our times. Jean Ziegler, the UN special rapporteur on food, and constant fighter against hunger, said "The United Nations embody the gentle force of reason." So let us trust to reason.

So I am looking forward to today's discussion with our speakers from the United Nations, on international law, and on artificial intelligence: Carolyn Horn is a legal advisor to the UN special rapporteur on extrajudicial, summary, or arbitrary executions, Jakob Förster is an artificial-intelligence researcher, and former Google employee, and Norman Paech is an expert on international law and peace researcher -- Carolyn, Norman, and Jakob, please add any information about yourselves you want. We will talk about the dangers, and the possibilities of monitoring, disarming, and banning combat drones.

.

Regarding the course of our discussion: we will begin with two question to the speakers from me, and then open the discussion for everybody. You have both the option of posing questions via the Question and Answer function – as I said, you will find this function at the bottom of your screen -- or of using the "hand raising" function -- we will then bring you into the audio channel. Here I want to remind you that this event is public, and is being streamed.

So, those were my introductory remarks. Carolyn, my first question is to you. You work for Agnes Callamard, Special Rapporteur on extrajudicial, summary or arbitrary executions. Why are you addressing this issue? How does the United Nations assess the use of combat drones?

##### [00:05:11.300] - Carolyn Horn

Nice to talk to you. Well, Dr. Calamard wrote a report on drones, which she submitted to the UN Human Rights Council this past summer, addressing what she saw as the increasingly unlawful use of drones and the targeting of General Soleimani. So much of what I will say comes from that report, but also contains my thoughts and goes beyond that in some cases. The reason why she's focusing on drones at this moment. and why increasingly others at the UN are, is because of the proliferation of drones, with wealthy countries currently distant from the effects of the drones, and the ongoing and continuous destruction of international norms by the use of drones. And she sees that we're now in what she calls and others call the second age of drones and it is characterized by a number of things. First is proliferation. And I'll read some figures here: As of 2020, at least 102 countries have acquired active military drones and about 40 possess or are in the process of possessing armed drones. 35 states are thought to believe to possess the largest and most deadliest of these drones. And it's estimated in the next 10 years, unless efforts like this can prevent it, almost 40 percent of drones will be armed, with about 90 percent of those falling in the largest and most deadliest class of drones. The second concern is democratization of drones, which means that it's not just states or even wealthy states that have drones, but non-state actors increasingly have access to drones and can manufacture them in their garages with commercial technology, and they're even being given drones by state actors. A third danger, which is characteristic of this second age of drones is the more advanced technology, which I'm sure Jakob will talk about. Drones are faster, more lethal and capable of travelling greater distances and increasingly, states see drones as essential to the next armament system. And the reason is because they're cheap, they're efficient, they can go to all sorts of terrain, they provide deniability to states and to non-state actors. It's increasingly difficult to tell who sent the drone. And they provide an asymmetrical advantage. They allow countries that are smaller to fight larger countries. And they are perceived – incorrectly, as these meetings have shown – to be more targeted and less destructive. So drones are now at the center of a new armament race, and it's why there's increasing international concern about them from international lawyers. And this doesn't even deal with the issue of automation. This is just simply drones. You put on top of that the issue that humans are less and less involved in the targeting decisions. With the wealthy states in particular, drones are currently supported because it provides protection to the country’s soldiers. Soldiers can be far from the targets and war can be waged without political cost. And there's this myth that you've been trying to deal with in these sessions about the clean war, which is why it's incredibly important that this mythalways be presented with the facts that drones are dependent on intelligence, which may or may not be accurate. And there's very little oversight to determine, when there has been targeting, whether or not those who were targeted were, in fact, combatants. And how that should proceed. In terms of international law, what all of this has led to is an increasing undermining of international norms. You have talked and others have talked about how this is reducing barriers to war, and I think it's important to understand in what way the norms are being undermined. First is that the United States and others are acting as if they're using drones in armed conflicts, and that therefore, because there's a war on terror, essentially a non-international armed conflict against terrorists, this is part of a war and therefore the laws of war apply. I would argue that international human rights law applies even in armed conflicts. However, drones are being used now in areas that are outside of traditional battlegrounds. This is in Yemen and Pakistan and other areas where supposed terrorists are being targeted. This is outside of the traditional battlefield and therefore international human rights law should apply, which requires that there be an imminent threat to life for it to be not an arbitrary killing. And so therefore, by moving the war on terror to non-traditional battlefields, they're moving the law of war to areas for which it's not designed. So that's a significant change in international law. The second issue with drones is that it's essentially eliminating this concept of ‟imminence”. Both in traditional police actions and going after terrorists who are allegedly planning attacks, but also the imminence required to wage war. Under the UN, traditionally, states are supposed to resort to force only in very limited circumstances, and one of these circumstances is self-defence. Under Article 50, United Nations charter, states can use armed force in self-defence against an imminent attack, historically meaning something that's just about to happen. But the notion of imminence with drones has been transformed. So now states justify using drones to target those who are planning attacks, regardless of whether the attacks are imminent, and claim that the prevention is necessary. But there's no oversight of this, either within the UN or within the states themselves. So there's no analysis of whether, in fact, an attack was in fact imminent, what the role of the individuals who were targeted was in that alleged attack, and whether it could have been prevented by any other means. Another effect that drones are having is it's undermining the very notion of sovereignty under international law. Currently, states such as the United States are using a doctrine saying that states such as Pakistan or Iraq are unwilling or unable to prevent attacks against them. And they use this doctrine to justify invading the sovereignty of these states, and attacking people within those states without their consent. Historically, you required the consent of those countries, or the state had to have been an active player in the planned attack. States such as the United States are undermining that doctrine and again, making it very easy to start attacks and have what is increasingly becoming a low-grade, ongoing, ever-present situation of war. And the final problem with drones is that it makes accountability tremendously difficult. This is in part because it's hard to attribute who has launched the attacks with drones. Unless it is one of the large drones like the Reapers or something like that, it can be very difficult to actually identify who did it. As automation becomes more prevalent, even if you can identify the country, it becomes difficult to identify the individual responsible for such an attack and ... because there's no oversight, there's not even an attempt [I think we just lost Norman]... there's not even an attempt to determine whether or not the hundreds of attacks that are taking place are in compliance with international law. And that's one of the big contributions that Germany can make. Because it can start to demand, before it would authorize the use of armed drones, that this type of oversight and clarification as to what law applies to drone strikes; what you know, if you strike outside of a battlefield, what you have to have to be able to justify such an attack. To require that those types of standards have to be decided on before armed drones are used would, at a minimum, force other countries to deal with these issues rather than what they're doing right now, which is essentially ignoring them or imposing their reframed view of international law. So that's kind of the overview of why she dealt with this area.

##### [00:17:07.130] - Peter Förster

Yes, thank you, Carolyn. Jakob, I put the next question to you. Last December, you wrote an open letter to the SPD parliamentary caucus against the weaponization of drones. Later, you wrote an article about. the Future Combat Air System, warning of the danger of this project. As an AI researcher, why did you feel called to intervene in this debate?

##### [00:17:47.970] - Jakob Förster

Thank you for having me on the panel, thank you everyone for listening. As a scientist in AI research, I'm extremely concerned about the long term risks of armed drones when combined with the recent advances in the field of AI research. So I think in the previous two events on this series there has been a focus on the already horrible consequences of drones being deployed internationally against human rights in situations that violate human rights. However, my main point of concern is about the long-term risks associated with armed drones, given that we are experiencing a revolution in the field of research. And this is where I personally come in; I work on multi-agent reinforcement learning. This is a technology, a field of science, that allows agents to learn to act together and solve tasks cooperatively. And while there are a large number of very positive and good applications of this science, which is what motivated me to work in this field; it has increasingly become clear that this could also lead to potential applications and automation of armed drones and drones, drone swarms. And something that triggered my intervention in this debate is the fact that I started receiving interest from the military sector. To start applying and investigating multi-agent learning. And I think that --once we have – given that you have armed drones, the idea that we can prevent automation, if drones exist, I believe it's not going to be viable in the long run, and that's simply because there is no line between an automated drone and an unautomated drone. Automation is a gradual process that, given that the hardware exists in the sky, would be extremely difficult to regulate or stop. And this is where Germany comes in. Germany's at a very special point in time because it has not started arming drones. And I believe that we need countries like Germany, that have not started automating drones – arming drones – to start an active dialog about how we can stop the process and reverse the process of armed war robots. And in particular, the decision last December, I think was important to have the perspective of somebody who comes in from the background of AI research. And the second letter that you referred to, the FCAS system, that was a crucial point to get involved in because while in Germany, there had not been … there's no agreement to have armed drones, and the German populace doesn't want to have armed drones. The Future Combat Air System, at least in my opinion, seems like a way of trying to get around the popular desires of the country and push towards armed drones without the population being aware of this. Just to provide some background on this: the Future Combat Air System is the biggest European arms project. And while on the surface, it's not presented as automated warfare, it includes a huge number of different applications of artificial intelligence in its future planning. In particular, the idea is that you have an armed swarm of drones that is accompanying the fighter jet, and even this fighter jet that has plans to be nuclear armed, based on the plans of France, is planned to be autonomous in the future. And this shows to what extent there have been made long term plans already to automate weapons, including from the European Union. And I think as scientists, it's absolutely vital that we think about -- that we get involved in the dialog about what can our technology and science unlock in terms of positive potential in the long run, but also what are the risks of our science, because many of the things that were impossible or sci-fi about ten, twenty years ago, when it gets to controlling drones autonomously, they have now become entirely feasible. So the barrier to automate drones, given that we have armed drones in the sky, is becoming lower as we speak, and this relates directly to a point that Carolyn made earlier, which is the democratization of armed drones. And I would go further, the democratization of autonomous drones, whereby if we extrapolate that five or ten years, the technological barrier to building not just remote-controlled weapons, but to building autonomous weapons. is getting lower every single year. It's entirely conceivable that within five to ten years, training autonomous drones swarms will be possible using published research, off the shelf technology within a few days for individual grad students. We already in simulation have these results where we can train agents that learn to solve tasks as a group and can learn to solve complex tasks. And the state of the art, the state of research right now in artificial intelligence, is developing drastically. So my main concern is that once we have the hardware, automation is going to be very, very difficult to stop and the process is accelerating due to the rate of progress in artificial intelligence. And I think it requires the concerted effort that involves peace activists, that involves politicians, and that involves people in artificial intelligence, to very, very seriously think about the long-term consequence of their work. Because ultimately, the responsibility cannot simply be put on the policymakers; it requires involvement, dialog across the different sectors. Across people who understand artificial intelligence, and people understand international norms and long term implications. It goes without saying that if we already have a new arms race around robotic warfare or drone warfare, this arms race will only accelerate once we add automation to the mix. We are suddenly not simply about who has got the the most drones, but who has got the best A.I. that can outcompete the other AT in the drone swarm . And what this means is pressure to take out the human element from the decision making. Because simply put, you can control one or two drones; controlling entire drone swarm, every single action of every single drone, for a human is going to be impossible and it's going to add time delays. So simply by the logic of competing warfare, unless we put an end to this, it's very likely that we will see an escalation of automation and a new arms race, not just for drone warfare, but for automated drone warfare. Happening, taking place in the future, and that is that horror scenario that Peter described in the beginning of this session, which is a world in which highly automated armies are confronting each other. And we are then the dynamics of reaction and response can lead to wars in which every single person is a loser.

##### [00:25:49.110] - Peter Förster

Thank you, Jakob. Norman, the next question is to you. We learned that the drone wars that are actually taking place violate human rights and international law, but combat drones as such have not yet been banned internationally. What is your position on this as a specialist in international law and peace researcher?

<*kurze Zwischenbemerkungen über technisches Problem weil Paech sich ausgeschaltet hatte>*

##### [00:26:37.280] - Norman Paech

Peter, thank you very much for inviting me to take part in this. You and Carolyn and Jakob said that this is a development which will dramatically change warfare in the future. These are dangers which we're all vaguely aware of, but they are now increasing drastically; so now international law in particular, the only standard that is recognized internationally and also could be enforced, [should apply]. But international law has a general problem. It's very slow, because it is not a law that is not imposed from above by some particular parliament, but has to be established by lengthy process of discussion among the various peoples and resulting in treaties. As Carolyn pointed out, we have the situation that this traditional, classical international law that has existed say since nineteen forty five, the charter of the UN, and then the many human-rights conventions, is being greatly eroded; and not just since the development of drones, but also before this. We already have extrajudicial and extralegal killing is done, and we have pre-emptive attacks outside actual self-defense; we have numerous crimes against human rights and war crimes during warfare. Let me just mention one case that you mentioned, Carolyn, namely the execution of Soleimani two years ago. That is an absolutely clear crime against international law. And the people who ordered it should really be in the dock of the International Criminal Court. But that sort of people will never appear there, because they are still in control of the institutions, and namely the International Criminal Court and so on. But that was already the case before this; the established practice of extralegal executions has existed for a long time. But the drones, do not ‟democratize” this further, but as it were expand the possibilities for this, that suddenly include all states. Taking a look at the moment, we still have a highly technological form of drones, limited to twenty-five states. But as Yakob said, this will very rapidly spread and the technology can be acquired on the market. Every little country and every private terror group can buy this stuff and employ it. Let's assume that what the Bundeswehr is training in Israel, urban combat. Well, the drones will make urban warfare much more brutal and more efficient than it has been until now. In other words, the increase in the intensity of warfare is gigantic. That is the problem. And the problem with international law is not only that it is slow, but it also always lags behind technological development. It is never happened that the peoples have adopted a convention that acted preventively to prevent some technological development. We still have the problem that the nuclear-arms ban treaty, after 50 years still has not reached its goal. And there are lots of other cases where international law is lagging behind. But there are some cases where we succeeded in a few cases where certain types of weapons have been banned or somehow controlled. But I'd like to point out another aspect: humanitarian international law tries to control all warfare. That's the international law of the Hague and Geneva Conventions. Not under the supervision, but where this was usually developed is the Red Cross. They developed certain fundamental positions and criteria to judge warfare and weapons. I would like to mention briefy three, since this is not supposed to become a seminar. Essentially, these are that weapons must distinguish between combatants and the civilian population. That's one. The second is they must be proportional in the means with regard to the purpose that they want to achieve. So they shouldn't blaze away indiscriminately. That also applies in international law, in international humanitarian law. And finally, they must be necessary; in other words, it must be necessary to employ certain weapons in war. How difficult it is to try to determine this in individual cases, I’d like to illustrate by the case, with which you are probably all familiar, of the massacre in Kunduz, Afghanistan, in September 2009, which the European Court of Justice has just ruled to be proper. This was a massacre that, in my opinion, neither took into account the distinction between combatants and civilians, nor was proportionate, nor was it necessary. However, the German government always claimed that this was an act of self-defence; and the USA did exactly the same thing regarding the execution of Soleimani. They also claimed it was an act in a defensive war. Thus international law is indeed being eroded. International law, let me emphasize, continues to be very strong and very clear. But states are attempting to undermine that with their interpretations. And you can find lots of international law experts who can be paid to claim for them that it was self-defence, it was debatable, we cannot condemn it. That's the situation, the problems of international law, but I would like to differ, as an independent specialist in international law, from Carolyn’s conclusion about the situation at the UN. I don't think that this weapon can be controlled. I believe it must be banned. It is so dangerous that you can't assume that it can be controlled, by establishing certain limits in advance that w ill be observed. Let me point out something that I noted down; why I think the only way that we can overcome these dangers by a ban. What is usually said about the use of drones in Afghanistan and also in Yemen, is that circling of the drones in the skies alone, is so terrifying for the civilian population that they flee. This is, in fact, an attack on the civilian population that we can call disproportionate. I think the second thing is what you all said about lowering the threshold of war: a man (or a woman) is sitting in Langley with a joystick; in Somalia, Yemen or Afghanistan, the drone is activated and fires a missile. In other words: who can defend themselves against this? Thes states are not even able to shoot down drones; nor do they have the ability to combat the crew sitting in Langley in any way. And that lowers the threshold of waging war, and makes wars easier. Let's not take the example of the USA in Afghanistan, but let's take some country in Africa that wants to destroy its neighbor, or make problems for it. These are situations that one can damage and injure other people without the slightest danger for your own people. This is a dangerous innovation in warfare. As I said, the German government fell back on a claim of self-defense in Kunduz. The USA also claimed defense when executing Soleimani. Thus every attack and every intervention can be redefined as defense. And that's the danger in courts, as well. That is the danger internationally, that people will say everything that we're doing is just defense, because it's very difficult term. And as Carolyn pointed out, ‟pre-emption” means that defense is claimed to be happening far in advance of any actual attack – now already – into the sphere of some possible attack . I mean, this is a violation of international law, but it threatens to become established as customary law by constant use here. With the use of drones, this threat becomes much, much greater. And what I'm most worried about, is what Jakob pointed out. This is just the preliminary stage of completely automated weaponry. The high-tech countries are working on this, and it will happen. There will be high-tech warfare where human control will simply be entirely eliminated, beforehand or afterwards. And this is something that we will no longer be able to control. That must be stopped. Therefore, my vote is we must advocate banning it, stop it before it becomes an immense threat to mankind. Thank you.

##### [00:39:17.320] - Peter Förster

Thank you, Norman, for this urgent appeal. Jakob, you wrote what affected your decision at the end of last year to intervene in this dispute? And what's your impression concerning your colleagues? Is there a tendency in artificial-intelligence research to become aware of this problem? And what possibilities do you see in science to stop this? To what extent do such project depend on civilian researchers to be realized?

##### [00:40:09.920] - Jakob Foerster

Thank you, Peter, that’s a good question. I think there is a growing awareness – I can’t speak for everyone, because it's a big field, but at least from what I observe among collaborators and people I work with and in the general chatter in the field, I think there's a growing awareness that AI applications have been the cause of problems. Doesn't matter whether you think about bias in decision-making, or undesired consequences of recommender systems in social networks. And there was a large debate against the killer robots in the field. However, the other line was drawn between autonomous weapons and non-autonomous weapons. That debate was basically saying as long as the the robotic weapons are controlled by a human, that is fine. And I think what I believe the debate needs to be at this point is to recognize that that line can't be held. If we don't want autonomous weapons, if we want weapons that are under human control, we have to stop robotic weapons altogether. Because the force of automation, once we have robotic weapons, is too strong and it's too much of a slippery slope between human control and autonomous control. I think this debate will take place. I think events like this that bring together people from AI research and social sciences and peace activists are a crucial forum for this. And I think that scientists can have a huge amount of impact in shaping what happens to the technology. Because ultimately, the vast majority of academic potential and of science potential lives in the civil sector. This is across universities, across companies, and specifically in AI, all the major breakthroughs around deep learning, reinforcement learning, and therefore, obviously computer vision and the control of swarms of drones, all those breakthroughs come out of universities and companies in civil research. And that means that if the scientists manage to form a strong opinion on these topics. and stop working on things unless these questions are being addressed, this could be a very, very impactful and powerful movement. Because the scientists are a crucial ingredient. The trajectory I'm outlining, whereby ever greater automation leads to escalating risk of war and another arms race ... in the backbone of this, there are scientists that are doing the fundamental science that can be utilized to automate these weapon systems. And I think it's crucial that those scientists are part of the dialog and realize what the potential and what the risks are for the things they’re developing. So I believe that there needs to be more dialog. I also believe that banning robotic weapons systems is the only way to prevent autonomous weapons systems. And I believe that if the scientists working in the field of artificial intelligence research realize some of these points, they can have a huge amount of impact on the future development of the planet. This in the long run, is about whether or not we can establish a system of cooperation and peace, rather than going into yet another arms race. And there were some questions about this, as someone said on the Q&A, we must stop robotic weapons as we did with atomic weapons. Absolutely. I think that's something where I strongly believe, given where technology is headed, we cannot control ,we cannot prevent the automation once you have the robots, because automation is slippery slope and the technological barrier to entry is getting lower every single year because a fundamental breakthrough is being made in deep learning, computer vision, reinforcement learning and multi-agent learning – my area of expertise. Thank you.

##### [00:44:40.820] - Peter Förster

Carolyn, you wanted to add something?

##### [00:44:43.320] - Carolyn Horn

Yeah, what I wanted to say and … what Jakob was saying about unless these issues can be addressed. In some sense, I almost think that what we're talking about is tactics rather than ultimate goal. I agree with a tremendous amount of what both of them are saying, although I will note that Dr. Callamard has not called for a ban on these weapons. But what I see this is as an opportunity for Germany to force a debate, and whether that debate is phrased as we want to end them, or before we proceed, there has to be strong and clear standards, which will be very hard to do. I mean, once people actually legitimately look at these issues, it is very hard to institute standards that will be workable in the real world, which may result in the decision that they have to be banned. But the starting point may be to use this opportunity in Germany to force the discussion about aggression, because this is a particular issue with Germany and they are particularly well situated to show how drones are being used for aggression. … But the other thing I wanted to mention in terms of the automation is that we act like it's something that's coming. We already have automated weapons systems. We have automated defense weapon systems. And there's again, a myth that we have human controls because the humans are on the loop and therefore have an opportunity to abort or push a button because they agree that this is a target, whereas there's no meaningful discussion – again, that Germany could force – as to what human control really means, because most of these weapon operators don't have the situational awareness either of the situation on the ground or what's happening, or how these machines are constructed to know whether or not they actually should be allowing this targeting. And that's going to be incorporated into drones without any real discussion unless countries like Germany force it.

##### [00:47:30.590] - Peter Förster

Jakob?

##### [00:47:32.630] - Jakob Foerster

So I just wanted to make a reply to Carolyn, because the risk that I see is if we push for better regulation, the definition of human control, we could spend years having that very difficult dialog where we try and agree on what it means to be ‛autonomous’ and ‛non-autonomous’ and ‛semi-autonomous’ and ‛quarter-autonomous’. But in the meantime, the escalation of automation, and of drone warfare, continues. And I'm concerned that we might be missing the opportunity to push for a ban if drones in the meantime, while we're having that debate, that ultimately I think all of us agree that it's going to be extraordinarily difficult actually to reach to reach a workable, effective definition of human control. So far, everything I've seen is that it's extremely difficult to come up with a definition of human control that cannot be circumvented by the countries that want to circumvent it. And this is the crucial aspect. As long as – if we are going to have any regulation that's effective, it has to be clear for all parties that no party can circumvent them because otherwise there's pressure on all parties and all countries to try and be the one that circumvented the most. And if I remember correctly, even the German government, in their documents, is describing an extremely loose concept of what it means to be human controlled, to have an element of human control. So that's my biggest concern with … While I agree with you, that this could be something that we do, we push for better regulation and a clear definition of human control, I am concerned that we might be ending up losing time and we don't – one thing we don't have, is time, because technology moves fast. We've all seen the videos from Nagorno Karabach, how drones have already changed warfare. Everyone has talked about the reduced barrier to starting a war, and drones are extraordinarily difficult to defend against, even more so if they come in swarms. I don't believe that there's any current air-defense system that can be effective against a swarm of a thousand or ten thousand drones. And if we want to prevent these kind of horror scenarios, we have to start acting now. And hopefully it's not too late.

##### [00:50:02.920] - Peter Förster

I’d like to take up the one point mentioned of nuclear weapons, and ask Norman about that. We had the nuclear weapons ban treaty, which is a very encouraging peace breakthrough, fought for by the peace movement. Norman, you wanted to speak; what can we learn from the struggles for banning nuclear weapons and other weapons, what we can learn from that for the struggle against combat drones.

###

##### [00:50:44.190] - Norman Paech

First, I'd like to agree with both of you again. On the one hand with Carolyn, who said that although the U.N. is talking more about control than about banning drones, that it's necessary for a state that is also becoming militarily dominant, such as Germany, to discuss this and take the lead in that. And with Jakob, of course. I would like to add that in the German parliamentary, in the Bundestag, there are currently only two parties which have clearly opposed it in some fashion. For one, the Left Party, of course, but also among the Social Democrats, there's a strong movement that's demanding a ban on these things. Yesterday I read in the paper that the Social Democrats have managed within the government coalition to postpone the decision; and that they have set up a working party on the drones, 10, 12 people to discuss that. Of course, the left wing and the right wing of the party are equally represented in this working party, but this is at least a signal that the Social Democrats are very aware of the dangers of this type of weapon. And I agree with Jakob, we don't have any time. We have to really get going very quickly on this. As far as I can tell, at the moment, there are only 28 states and the EU which have clearly opposed fully automated weapons. But the USA, Russia, South Korea, and Israel, for one thing, have said, no, no, those could be useful weapons. In other words, we have a lot of work to do to achieve an international convention, with the discussion and debate. Let me take one example from history. In the negotiations at The Hague in 1899, weapons were banned that cause unnecessary suffering. But then it took almost 100 years, until nineteen eighty seven, that a treaty actually made those weapons illegal, and a few years later for there really to be a total ban on such weapons. It says that such weapons that use radium and poison, and so on, that they're absolutely prohibited. In other words, it took almost a century from the first awareness that these are very serious and terrible weapons until complete criminalization of these weapons. We have other examples, such as landmines, which were also prohibited. But the scope of weapons that are terrible is still huge. The ones that are banned by international treaties is still a very small group. You mentioned the treaty banning nuclear weapons. That is currently binding for the states which have signed it and ratified it. But that's a minority, no more than 51 at the moment in the UN. All the others have refrained. And one thing is clear that those states which have nuclear weapons will not participate in that. It is symptomatic that at the same time this treaty was being negotiated in New York, all the nuclear weapons states were in Hamburg for the G-20 meeting. All of them. None of them cared what was happening in New York. So it will be along time before not only the five permanent representatives on the Security Council, but also India and Pakistan, perhaps South Korea and certainly Israel, agree to this. But this doesn’t mean we should give up. We have to really have an international campaign that's at least as broad as the one against as nuclear weapons, against these other weapons, which seem so harmless that children even play with them .

##### [00:56:35.060] - Peter Förster

I have a last question to Carolyn and then a general question for all of the panel, and then we'll open the discussion and then the function to raise your hand will be activated. My specific question to Carolyn is what significance a definite NO by Germany to combat drones might have for the possibilities of taking the initiative at the United Nations for controlling, disarming, and banning combat drones. And my question for all of you to consider the point that these wars are always justified as being for defense, in the final analysis for self-defense, and it is claimed that drones are not weapons of aggression, but weapons of defense. And based on this, my question is: Are we not in an historical epoch when the system of self-defense must and can be replaced by a system of collective development and security? Because global problems have become so urgent, such as health, climate change, overcoming social inequality, have we reached a point where we must re-think how our life together globally can be organized? That is something for all of you to consider, but first the question to Carolyn how a NO from Germany might improve the conditions in the United Nations.

00:58:55.370] - Carolyn Horn

OK, I got the first part of your question about what..... OK, so I'll answer your first question and I, I think Germany has a very powerful voice here. And what... It has already in other areas, for example, used [*and, could the translator not type because when he types all I hear is the typing*]. When Germany, for example, imposed sanctions on Saudi Arabia relating to the killing of Jamal Khashoggi, it had a big impact on the rest of Europe because it impacted what Europe could do as a whole. And the same dynamic works here;, if Germany takes a stance, and, even if it stopped short of saying they will never use armed drones, if it just insists on a debate now, it could be tremendously powerful. And it would add force to – right now there's an effort driven by Mexico to have a greater openness about these claims of self-defense that could be supported; with more and more of these smaller countries that are subjected to the drones being given a voice and an ability to stand up against it, as well. And the one thing I would add is, again, I think we're talking more about tactics, because when I look at the situation, you see countries like the United States stepping farther and farther away from international regulation, such as with exempting drones from the missile-technology control regime because they want to compete with China in selling drones. What you're doing with increasing public debate as to what this means, what is it going to mean to have lots of little drones that can come in to New York and do ... have automated killing? The more it gets into the public domain and people recognize what countries are doing in their name, the more success you’ll have in being able to ban this. And Germany saying no would be one means of getting that out more to the public.

##### [01:02:05.310] - Peter Förster

Yeah, thank you very much. Norman or Jakob, did you do you want to add anything to that?

##### [01:02:16.860] - Jakob Foerster

I have something I'd like to add to this, which is: I think in multi-agent learning, there are always different equilibria. And what that means is, if you have different parties that have different intentions, there can be different joint policies or joint actions reached, different strategies reached, depending on the assumptions I make about the other party. So, for example, there can be a self-fulfilling prophecy of ‟arms race”. If everyone thinks that everybody else thinks that we need to have autonomous weapons, then there will be autonomous weapons and escalation of warfare. So what's important is to create common knowledge around bans and movements towards bans and Germany stepping out and saying we have to push towards the direction, can start the dialog, and that dialog that creates transparency around why different parties are doing what they're doing and creating communication between escalating parties can completely and rightly change the equilibrium. And as an international society, we have to address global challenges. Addressing climate change, addressing the next pandemics, addressing resource scarcity, addressing global poverty, all of these things require us to coordinate with each other, rather than to fight each other. And I think given that we need to address those global topics *<??>* like climate change, we may as well stop escalating, getting into bad equilibria. And right now, we're doing the opposite. Right now – I think there was a period where the international community was starting to work together better and we've stopped and we’re headed towards a new arms race. And I think whatever can be done to reverse that trend will be absolutely crucial. And a lot of it is about communication, about common knowledge of what other people think, others think, which is fundamentally a multi-agent problem. So we have to start the debate and that's what I want to say to Carolyn’s point. Thank you.

##### - Peter Förster

Norman, did you want to say something?

##### [01:04:39.160] - Norman Paech

I like to add one thing if Germany would decide not to use armed drones , then the whole arms project in Europe would fail. For Germany is very important financially, as well as technically and scientifically, for the Eurodrone. It would be a failure, it would no longer be possible; Spain alone could not manage, nor France. And Britain would want to do something with the US and it would be a blockade of a arms development which is threatening at the moment. And that's the situation; and how difficult it is can be seen by the as-it-were neigboring question. What is Germany's position on ‟nuclear participation”, another very threatening aspect of arms policy and German foreign policy? In other words, what about the nuclear weapons? Germany could drop out of that, too, and if it did , all the US nuclear weapons would have to be withdrawn from Germany. That wouldn’t be the big step that would cancel NATO nuclear strategy, but it would be a very significant point, as a symbolic act intermationally, towards criminalizing a particular type of weaponry. How difficult that would be is shown by the current debates. The German government is not in favor, and the Social Democrats are probably not, either. So we are faced by very great difficulties. We shouldn't, however, be put off by that, we should confront them. We should simply name them and constantly put them on the agenda.

##### 

##### [01:07:49.930] - Peter Förster

OK, thank you, Norman. To take up what Jakob said, and what was now repeated, that we need a different logic of development, a different, positive goal. I’ld like to mention also the debate about the Human Development Goals and the Sustainable Development Goals, and that the goals and tasks of the world community are actually different, and becoming increasingly clear and recognizable. And I found what you have emphasized again in the last round, the importance of this initiative that must be taken, to give a positive turn to these global dynamics of development. I have not seen anyone asking to speak who wants to take part in the debate directly. Let me remind you again that everybody is invited to ask to speak via the ‟hand raising” function, and participate. Then we will call on you hear. I suggest that we now take a look at the Chat; there are several questions there. One question was about the attitude of the Green Party with regard to combat drones and autonomous drones. And then there is a question from Lisa. Some of you will know Lisa from the last session: a US whistle-blower: ‟Do other countries already have the hardware that just requires an upgrade to host these emerging autonomous technologies?”. Thanks for that question. Another question Lisa had: ‟Once AI is being used on these devices, how can they be governed at all considering much is done in secret? Should there be specific, transparent stipulations on any global governance?” – I guess.

Another question was, in Germany there's a Christian campaign group, Rethinking Security, that have concrete plans for abolishing the military by 2040; I hope they will succeed with this. Someone points out: The people who are really active in this encounter hardly any opposition, and do not fear any sanctions. Is there any sort of counterweight to them? Does anyone want to respond to any of those questions?

###

##### [01:10:10.510] - Jakob Foerster

I was going to address Lisa’s questions, if that’s OK. So the first question about, do countries really have the hardware and just require an update for making autonomous weapon systems? So if you have robotic weapons, what's the threshold, from a hardware perspective, towards building autonomous weapons? And my point of view is there is no threshold. Because technically speaking, once you have robotic weapons, that means you have a device that can sense information locally, transmit that information to a control center, and then receive via communications back the commands. Now, in the current implementation, there are humans that are taking part in that decision making in the control center. But nothing prevents a software update from simply changing the control loop, and having the human element replaced by an algorithm. So by definition, every single robotic weapon can be, through software updates on the control side, not through hardware changes on the actual robot, be transformed into an autonomous weapon. So from my point of view, the answer is absolutely yes, the hardware exists that allows autonomous weapon systems, and is already in the skies everywhere, because the only question is if there's a joystick in the control center, that might as well just be a computer program. And that's where we're headed, given the rapid development of AI technology that can be utilized to replace the human decision-making, and will be utilized as long as we allow for the robotic weapons systems to be in the sky. While I'm at it. I want to quickly address the other question. So should there be global transparency around this question of using AI for weapons? My belief is, yes, we need as much transparency as possible, but I don't believe that software can be controlled effectively. It's extremely difficult to tell what exact algorithm is running on a control center somewhere, and is that algorithm running on the computer that we're trying to regulate? Instead, I'm arguing for the ban on the robots themselves, the actual hardware. I believe we can create transparency around what weapons are being put on drones but it's much, much harder to regulate software running on a specific device somewhere in the world. Great question. Thank you.

##### [01:12:52.370] - Peter Förster

Carolyn or Norman, would you like to add anything to that?

##### [01:12:58.040] - Carolyn Horn

Yeah, I would like to add two points: One, in addition to what Jacob said about not being able to monitor the algorithms, we're not currently able to monitor the human decisions to target. There's absolutely no oversight, even within a national government. So the notion that we'd be able to monitor anything beyond that seems far-fetched. The other point I wanted to make about Germany was that there's another avenue, an additional avenue of pressure in this area, in that Germany is – many of the signals are transmitted through Germany for the drones that are operating in places such as Yemen. And there has been a case that recently went against the Yemeni individuals who were targeted. But the point is that Germany has control over that signal, and Germany could require that it ... any signals to drones made through its national territory have to comply with international law. So there are multiple areas where Germany could force a rethinking of the use of drones.

##### [01:14:37.930] - Norman Paech

Let me discuss that last case, there was a court decision on that; a victim from Yemen sued Germany, but was not successful, and did not get anything. They said it may be, but Germany doesn’t share responsibility for such damages or for this victim. That's the problem with courts. This is an old line from Bismarck ‟On the high seas and before the courts, you're in God's hand”. You don’t know what will happen. I think this decision was wrong. For without Ramstein, this weapon could not be employed. Another state would have to be involved in the attacks. According to very clear legal categories, that is part of the offense, which could not be eliminated because if it was not part of it, it didn't occur. The deed would not be done. That's also something where we need internal transparency and clarification, by saying ‟What’s actually going on here?” I remember an interview with Gabriel, who is foreign minister at the time, who, like an unborn child, claimed that he didn't know anything about Ramstein and the activities there – as the foreign minister. A really depressing interview. But that is the situation in Germany, too: There is an awful lot of information work that we have to do.

##### Peter Förster

I see that some people have asked to speak. Is there someone? Yes, there are two people, Michael Köllisch and Helmut Kaess. So we would ... and Hanna Adam. I propose that those three be allowed to speak up one after the other, so that as many people as possible can speak, and then allow all the panelists to respond. Marius, can you allow those three people, one after the other, to speak? The first person will be Michael Köllisch.

##### [01:17:30.350] - Michael Köllisch

Hello, can you hear me?

**- Peter Förster**

Yes, we can hear you.

##### - Michael Köllisch

I'm very flattered you think so highly about our German government, but I think you're wrong with it. From my point of view, our government is a quite warmongering institution, not unlike this of the US. And you see it because it's not closing down Ramstein. It’s fond of Ramstein. And it’s doing every bid of the NATO ally. So I’m afraid I don't see the very good impulses you hope might come from our country. And the second point I want to make is I'm not sure, but humans in the command loop are so good. At least if you have algorithms, they are not bad, they are not sadistic. But as we alas knew from our history and in war, there are very bad actions from single persons made in concentration camps and in the war. And I'm not sure whether the humans are always working for the good. OK, thank you.

##### [01:19:00.430] - Peter Förster

OK, then we have Helmut Kaess.

##### [01:19:19.750] - Helmut Kaess

Good, I wanted to point out again, which of course is clear to everyone. In the momentary situation of the world. It's absolutely necessary to promote the line of disarmament instead of an arms race. We have to cut back on the military, because the costs of the military are enormous. And that is all sick. We have to cooper – it once worked with Willy Brandt the OSCE, the Organization for Security and Cooperation in Europe, was created and it was a good thing. It brought peace to the northern part of the planet, but this has been largely abandoned. We have to return to that way. We need an organization for security and cooperation throughout the world, in all regions; it is necessary for all sorts of reasons, for the climate and all kinds of things that were mentioned. We have all sorts of crises and we can only overcome them if we do without this really sick military system. That’s all

##### [01:20:39.730] - Peter Förster

Thank you. And then we will take Hannah Adams and then return to the panel.

##### [01:20:50.930] - Hanna Adams

My question is to Norman Paech. I already put in in the Question and Answer section. The parliamentary Green Party was surprisingly against the arming of the drones when the vote was taken in December. I managed to find that out by questioning them. How stable is that opposition?

##### [01:21:28.970] - Norman Paech

Should I answer you right away? Hanna, we'll see, depends on what the next government coalition looks like. If they form a coalition with the Christian Democrats, then I have my doubts about how stable that position is. For since Joschka Fischer that is the case. They've given up their position, their former not entirely pacifistic, but still, as it were, civilian course. They gave it up and they agreed to the first intervention by the Bundeswehr in a foreign country since 1945. And since then, the Greens have always approved of any foreign intervention by the Bundeswehr. I am pleased that in this case, they are aligning with the skeptics and the opposition. They apparently also see the great danger of a new model of war. I don't know how how I should respond. I don’t want to claim that they are going to give in immediately, but I'm afraid that if they're in a government coalition. the major partner will be the one that chooses the tune and they'll just be playing a minor accompaniment.

##### [01:23:02.720] - Peter Förster

Those were a few comments also from the participants. Jakob and Carolyn. Would you like to add anything?

###

##### [01:23:16.980] - Carolyn Horn

I just … I wanted to respond quickly to the person who said that humans are not always good and they're the ones who create, have committed great atrocities, which is absolutely true. The difference is, with humans, you can have accountability. And so, even though in theory one might be able to program machines to only target particular types of people, there is no way really to have accountability and to monitor what the actual guidelines are, particularly once you get farther along with the AI. So that's the difference: humans will commit atrocities, but then you can actually try to hold those humans accountable for what they did.

##### [01:24:11.770] - Jakob Foerster

I was going to refer to that as well, I think. Yes, humans have committed atrocities, but humans have also prevented some of the biggest disasters that have threatened humanity. So everyone knows the episode of the submarine commander who was told to launch nuclear weapons and refused. Right, so it's that situation where humans have commonly decided, no, we will not launch this attack on the other party or we will not do this thing that we're told to do. Because ultimately, there's a human in the loop and humans commonly have an element of empathy and have the ability to decide base d on the moral judgment, should I do this or should I not do this? And what technology gives you is to take those humans out of the loop. And in particular, it allows us to amplify the decision making of someone who is very far removed from the actual brutality of war. And I think that the human element has commonly been something that has helped the peace movement, that has helped create political will towards ending wars. And taking this out, I think, is a huge risk. This naturally leads me to address one more question that was posed earlier about the killer robots; this is something I referred to in my statement. There has been involvement from the AI community about – so I'm now referring to the question from Charles Burnham, about the movement against killer robots. As I said before, there's a lot more consensus that we don't want autonomous weapons. However, what I think the AI community has not yet engaged in is the debate of whether or not having a ban on autonomous weapons is enough. My point of view is that the only way to effectively work against autonomous weapons is by preventing robotic weapons altogether. And that voice, that opinion has not been promoted, or has not been advocated for by the AI community. And I think that's the crucial difference. That's why I'm trying to get the debate. And that's why I think it's an aspect that has been too long ignored, that the pressure of automation, if robotic weapons exist, is simply too high, and that trying to regulate automation without banning robotic weapons altogether is going to be an unsuccessful and ultimately fatal effort. So that's the major difference I'm trying to highlight here between trying to make a statement against autonomous weapons and making a statement against robotic weapons because we're aware that automation is going to be a driving force of robotic weapons. Thank you.

##### [01:27:00.280] - Peter Förster

If I see correctly, there's no participants – Oh, Carolyn, you wanted to add something?

##### [01:27:08.260] – Carolyn Horn

I wanted to respond to Elsa, who asked a question in the Chat about the German government that seems to be afraid to confront the US. Do you really think the German government, parliament or people will dare to stand up to the US in order to ban armed drones? If not, why not? And I suspect this is a better question for Norman and Jakob. But the one point I wanted to make is that what really is necessary is not Germany standing alone, but Germany with, for example, the countries that are being treated as if their sovereignty doesn't matter, that countries can drop, you know, send drones into their sovereign territory to … this idea that they're unwilling to control people within their borders. It's collecting more countries to stand up to this system. The problem you're going to have, though, is that drones also give these countries power that they might not otherwise have. So there's a countervailing force that they could develop drones and therefore be able to stand up to the powerful countries. So but ....

##### [01:28:40.390] - Peter Förster

Um, yes, I see no one who raised his hand. I think we should have a look at the oh, excuse me, we can look in the Q&A section.

##### [01:29:02.600] - Jakob Foerster

Very quickly: can I make one quick statement to Carolyn.

OK, so I think the the point of creating an international alliance against robotic weapons, I think that's crucial. I think the German NO is is an important first step because it's very difficult to argue against something that you are doing yourself. So I think that's sort of the very, very first step is to get a German No. But the German No becomes unsustainable unless there is an international alliance that pushes for an international ban, and they are – the European Union could be the crucial next step. If we manage to push back on the Eurodrone and push back on FACS, and then get the European Union as a global player that sets global political norms in many areas of life already, through its international nature. If we get the European Union to commit to no robotic weapons, and push for a ban, I think that could be a crucial next step, and I think it is really important that we have a realistic road-map for how we can get towards a ban of autonomous weapons – of robotic weapons, not because it's going to be easy, but if we don't have a path, it will be impossible. So I think that's something that we collectively as a group need to think about very carefully. How can we outline a realistic path to accomplish a goal that seems very hard at the moment, given everything we know. But we also know there's no other option. The other option is an arms race, an escalation of warfare. So it's not like we have a choice; we have to come up with this path, not because it's easy, but because there's no other option.

##### [01:32:36.330] - Peter Förster

I suggest that we then look again at what questions remain unanswered from the Q & A section. I’ll read out the next ones, to Norman.

How do you see the future development of law with regard to drones, seen realistically: Can current European or German law already make a contribution for future laws? Would these actually do any good?

Let me read out two more:

Cooperation was created by means of the OSCE, and is absolutely necessary, in view of the many crises. That is an absolutely correct comment.

Then we have another comment: the German government does what it pleases, disregarding the opinion of the majority of the population. The worldwide peace movement must exert much more pressure, including apart from elections.

##### [01:34:31.720] - Norman Paech

That’s right, too.

##### [01:34:32.590] - Peter Förster

That’s right. And I will read on until we come to another question. ‟First of all: thank you for this important lecture and for your support. I hope that in future, nobody, especially no child, will feel and experience ‛iron rain’. And after all, we can defend our planet and humanity by peace. In my opinion, we should not fight for weapons.”

And then … on the concept of Rethinking Security, there is a link here, everybody's invited to copy that hyperlink.

- Outlaw the players and all wars of aggression. And then we have ‟What if there is a circuit, and not necessarily a device; complicity still exists. Regardless if the weapons are banned, a link still also means complicity. Should these issues also be clarified?”

- And another comment: ‟I am afraid there won’t be a German NO, at least not with Angela Merkel. Her party, the CDU, and the Greens – actually the camouflage-green Party dream of having armed drones. Sorry about that!”

And let me read the last question: ‟Where could complicity, responsibility realistically begin and end under an international control regime?”

Does any one of you want to respond to these comments and questions .

##### [01:34:23.670] - Norman Paech

Yes, I would like to return to the first question, if I could remind you of that, how do you see the future development of law realistically about drones and can the current European or German law make any contribution to future laws? And would this be any use? It is indeed a problem. Whenever you talk to the German government and say ‟take the lead”, they say, no, we can only do it with all the other EU members or internationally, in the framework of the UN, otherwise it wouldn’t do any good. In the economic or military field that's true, that a single nation that pushes forward will be left alone if it is left alone, but as Carolyn pointed out, it has enormous effect from a country with the economic and military stature of Germany. That would give a very clear signal. So one shouldn't be bothered by what the government always says, ‟Oh, there is no point in that if we do it alone: the international community has to do it.” But the international community will not do anything unless there is pressure from some side. And the pressure can be exerted by our own national legislation. If Germany decided not to develop such drones and not employ armed drones in its foreign interventions, but only for reconnaissance, that would have a very considerable significance. I want to be brief, but a second question that you omitted, that was also put by Klaus Grönjes, even if, as Norman says, those weapons are prohibited, that cause unnecessary suffering. Then what about the depleted uranium munitions that were used in Yugoslavia and Iraq? And that will cause terrible deformations among infants for decades. And unfortunately, you're quite right. There was a movement to ban depleted uranium munitions, because of their terrible effects, but without much success. That is the problem of all these cheap weapons, this applies to depleted uranium, which is basically a waste product and therefore can be employed by small countries as a cheap weapon, just like drones, which can be bought everywhere and are also relatively cheap, compared to big armored personnel carriers or the like. And that's something we always have to take into account, that people will firstly not obey the established rules of humanitarian international law, and secondly are not willing to agree to additional disarmament or prohibition measure. But I have to say again that's something we have to deal with, against which we have to struggle. That's what the peace movement is for, and it must not give up. And I'm sure that it won't give up. But our topics constantly increase. We had a year that when uranium and nuclear weapons were the focus of attention and now drones are added. But that's the fate of a movement that it cannot withdraw, but has to keep on struggling. Thank you!

##### [01:39:04.310] - Peter Förster

Does one of you, Carolyn or Jakob, want to add anything to that?

###

##### [01:39:10.170] - Jakob Foerster

I have a practical question: Carolyn, what would it take, do you think, to try and get the UN or someone like Agnes to start making a statement against drones and move the line from no autonomous weapons to no robotic weapons? What can we do to get the international – the United Nations on board here? What do you think would be something that would convince someone like her in an argument?

##### [01:39:46.240] - Carolyn Horn

I'm not sure it's a matter of convincing people; the UN is a very.... and increasingly, in many respects, a very risk-adverse place and the Security Council is not able to do much, and the Human Rights Council is unlikely to do this. Whether – I mean, from her perspective, I suspect it's more of an issue of, as I've been saying, strategy and whether or not she feels that armed drones are inherently violating international human rights law, and that regulation would make – would not be sufficient, because to prevent the future automation and all of the horribles that we've been discussing here. Because just armed drones alone without automation, if regulated, one could argue that they're not necessarily that worse than many of the other armaments that are out there in the world. It’s the trajectory that's the issue, and where this is all leading. So. I think what you're doing is exactly what needs to be done, it just needs to have more and more communication about how this is unlikely to be stopped unless you stop the armed drones themselves. And then you have to convince those who believe that this is better than other armaments, which may be more indiscriminate in how they operate. I mean, to give you an example, and I'm not saying I agreed with this, but I imagined when I listened to the speakers on the war in, between A—Azerbaijan and Nagorno … the first panel that you had, people saying that the experience of those people being chased by drones is not necessarily worse than the experience of people being bombarded by armaments – you know, planes flying overhead. So – and they would argue that this was more targeted. So I think what you have to do is convince each individual country – and it is going to come from the countries – that it doesn't end here and there's no way to control it going forward. With respect to Agnes specifically, she just hasn't analysed that point yet. So that's just more of a conversation. It's not that she's not open to that.

##### [01:43:03.090] - Norman Paech

I'd like to add something to that, Peter. Carolyn, you addressed a major problem, a problem of international law that is always presented to legitimize combat drones, that basically they are no different than artillery. Artillery also shoots up to 40 kilometers, and also causes collateral damage to the civilian population. So you could say that drones are an instrument of combat, like all the rest. In this area, you cannot refute that argument. But the problem is that that is only one of the functions of drones. It’s all the other functions that we've indicated, which really go beyond that of artillery, that are the problem. I'd like to address a question that you skipped, Peter, from Gerd Pflaumer, a peace-activist and old friend of mine from days together in the government, which I would like to take up here, because it is relevant. He asks: how can we refute the argument that armed drones serve to protect soldiers? Because that is the main argument for legitimizing drones in such wars. My first answer to that question is that the best way to protect soldiers is not to send them to those wars at all. That’s utopian, too, but it's very clear – what business does the German army have in Afghanistan or Mali or Yemen or anywhere else? None! That is the basic point. And secondly, how should a drone that's hovering over the field protect the soldiers? This hasn't been proven yet; it is a pure assertion. Rather, the threat from such a drone to those who are attacked is much greater than the protection for the soldiers. It is a completely arbitrary assertion, with no proof presented to date.

##### [01:45:45.390] - Peter Förster

And of course, sometimes I miss a question for technical reasons. I apologize for that. I think Gerd Pflaume had asked for the floor. I don’t know if the question has been asked. Marius, could you switch him in?

##### [01:46:14.710] - Gerd Pflaume

Can you hear me now? Norman, my dear old friend, I remember the old days and I’m glad you do, too. I put that question because I see that parts of the Social Democrats, such as the MP who is responsible for the troops, or Fritz Felgentreu, who resigned, don't want to be on bad terms with the Bundeswehr. There are quite critical voices in the Bundeswehr who are claiming that the Social Democrats are abandoning our soldiers. And the few Social Democrats who are still in the Bundeswehr also have their difficulties with that.

And that's why this question about protecting the soldiers is so important. I accept your argumentation, Norman, it’s quite clear. I wrote a letter to the editor of the Süddeutsche Zeitung, which was published. The best thing to do would be to bring the soldiers home from Afghanistan or Mali or wherever they are. Then, the question wouldn’t arise in the first place. But they are there now, and unfortunately probably will be for a long time. So how should we deal with that? Because in some individual cases, it might, in fact, be the case that German soldiers are caught up in a situation where drones may actually prevent German soldiers from being killed. You can’t preclude that absolutely. That's an argument that the Social Democrats really have a problem with. And I see the danger that it will result in them changing their position and agreeing.

##### [01:50:28.360] - Norman Paech

There was discussion how the massacre in Kunduz could have been avoided. They said if it there had been drones, then they might have done things quite differently. They are referring to the idea that then they might have seen with cameras that there were lots of civilians at the two tank trucks and not many combatants. But that is very questionable, because we know that the American pilots who fired the missiles warned Colonel Klein, saying: We saw that there are lots of civilians there. But despite this, Colonel Klein said, No! Destroy the fuel tank trucks, and that's what resulted in the massacre. So the change from a fighter jet to a drone cannot be justified on the basis that the one gives better protection than the other. In my view, that's simply a completely unproven assertion. And where nothing is proven, it's hard to argue against or for it.

##### [01:49:24.430] - Peter Förster

Let me give personal comment at this point. In the previous events, it became clear that violence evokes counterviolence, that's the logic of war and mutual destruction, that it evokes counterforce; there have been impressive examples of civilian aid that were able overcome this and protect everybody, including the soldiers. I had a comment that combat drones differ from aircraft, the difference being that their presence alone means terror for the civilian population: and that this is a fundamental difference. I'd like to suggest, if you all agree, since there are still a few questions, that we continue until quarter past. If nobody has any urgent deadline, that we continue for another quarter of an hour. And we have a question from the Q&A section to Jakob. This is a question that includes a comment that Stephen Hawking initiated shortly before his death a movement among scientists --

##### [01:51:10.370] - Jakob Foerster

– We already covered this. I did want to say something on the protection of soldiers through drones.

I think the argument is very short sighted, so if I'm in a multi-agent setting and I have two players, then clearly I can think that if I take this step and the other side doesn't adapt, then that's a great idea. And indeed, I can imagine that there are settings, if nobody else was to also have drones, it is probably advantageous to have drones. But the obvious truth is, as we've said five times over in this conversation, that the proliferation, if drones aren't banned, cannot be stopped and there's no scenario in which any soldier is going to be better off, more protected, or any civilian be more protected, if everyone has drones. And I think that's the short-sighted nature of the argument. Maybe there settings whereby, if you're the only one who has drones, this can help protect soldiers, maybe. I cannot rule that out categorically, but I can rule out is that that's a relevant question. Because in reality, drones will proliferate unless we ban them, and in that case, nobody is helped and everybody is worse off.

##### [01:52:28.680] - Peter Förster

Another question, if there any indications whether this series is has been perceived by politicians. I can say about that certain people I know had registered in advance. And of course, the videos of all the three events will be sent to all the participants and everybody, everybody's invited to use them, for example, both within the peace movement with the Easter marches and also by pointing them out to politicians. So the question is, are there any other requests to speak? I don't see I hope I haven't missed any in the Question and Answer section. There are contributions, but I don't see any new questions there. Give me a second. I found one more question. There is a question here. There are two things we experienced recently that show that peace activism works: The provisional No by the Social Democrats in December to the drones, and the ratification of the UN nuclear weapons ban treaty would have been inconceivable without the commitment of peace activists. . Can’t the peace movement and international peace activists be more self-confident? That was a question, and I think it is the only question still open.

##### [01:54:56.900] - Jakob Foerster

I was going to say I will have to run off because we are out of time. Yeah, I didn't want to end the conversation, so I just want to thank everyone for listening so far

##### [01:55:15.920] - Peter Förster

Jakob, do you want to have some final remarks or have you finished everything?

##### [01:55:23.270] - Jakob Foerster

I think I have made my points a few times now in this conversation. But I do think that this is going to be a difficult process. But I also believe there is no alternative if we think ahead, and I think the difference between … you know, a lot of human development happens when we manage to think ahead. We manage to not just reason of our own actions and interests, but think ahead how others will respond and react, and what the equilibrium is we're headed towards. And the more we understand the process we're in, the better we can change course and change trajectories. I think right now we're headed to a disaster of a new arms race and wars of a scale that we have not seen before. But I don't think it's too late. And I think that there's a chance for us to work together and hopefully get the international community more involved. And I think that the scientists and the AI scientists can play a role in this.

##### [01:56:17.090] - Peter Förster

Jakob, thank you very much.

##### - Jakob Foerster

Thank you for having me.

##### - Peter Förster

Carolyn or Norman, do you want to respond to the question that was a question from Senta

##### [01:57:23.640] - Norman Paech

That was the call on the peace movement to be more self-confident?

##### - Peter Förster

In the view of the positive achievements. As you said there are more topics because we as a peace movement address more topics. In view of these positive breakthroughs, the temporary halt to armed drones in Germany, and the nuclear weapons ban treaty that ICANN fought for, the peace movement could be more self-confident.

##### - Norman Paech

I think the peace movement itself does not lack self-confidence. Every year in Kassel, we have these big peace conferences with three to four hundred people. This time, it had to be held via video, and there were 400 to 500 participants this year from all over Germany and Switzerland and Austria. There are the May Day demonstrations, and lots of demonstrations, especially related to war and peace. But the problem is that the public and the mass media, usually aligned with the politicians and the government, ignore this. And we're very aware of this problem. 10, 15 years ago, the television stations came to Kassel to our peace conference, and then there was just the newspapers, and now nobody comes from the press. So we're faced with a wall or rather a sort of blob that we have to penetrate that to get the media to report it. And now we have the advantage that we have videos and streaming services and bypassing the mass media we reach lots of people, not just peace activists, but also the normal population. So we have a medium at the moment that makes us partially independent of the classical mass media, which usually stick in the mainstream of government policy. That's another major task, breaking through this consensus between the government and the main newspapers. They all support government policy. They all support the Munich Security Conference. There is no criticism of that. And now the debate about confrontation policy against Russia and China, all the mass media support that. We have to stand up against this. So it's not just drones and nuclear threats, but the whole question of security policy. Who threatens us? Is it Russia or China or isn't it rather NATO, which is waging wars in North Africa, in the Near East and the Middle East? Neither Russia or China is waging war there, but they're the ones who are criticized, the ones we have to arm against. So that we have this vast task. In the publications that I look at there is no lack of self-confidence and really good articles which discuss this. But I think these three video events are, in my opinion, but also in their international nature, an excellent example of a bit of self-confidence at this moment. We have to keep up with this notion that we always have to lower our horns and in order to attack the domestic enemy,

**[02:03:30.000] - Peter Förster**

That sounded almost like concluding remarks from you, Norman.

##### - Norman Paech

That’ what it was meant to be.

**- Peter Förster**

Carolyn, do you want to add anything to this debate?

##### [02:01:10.860] - Norman Paech

One thing I'd like to say I'd like to thank the interpreter, I really understood well. So thank you, Sophie,

##### [02:01:26.020] - Carolyn Horn

I'd also like to thank the interpreters, I've understood everything. I don't have much to add. I think we covered everything very well. I think it's exactly this type of event and really forcing governments, including Germany, including the United States, to be more transparent, to answer the questions about the lawfulness of what they're currently doing, and where things are heading and their answers to how they're going to be held accountable for the steps that they take. So I think it's exactly what you're doing that is going to lead to progress.

##### [02:02:18.050] - Peter Förster

Maybe there's one or two questions that remained open. But I think that our discussion was very good and very comprehensive about the subject. I would like to use the opportunity, particularly – Jakob is gone – but to thank Carolyn and Norman and thank the people who made it possible, Elsa Rassbach put a few questions today as well, Joachim Schramm, Marius Pletsch, Matthias Monroy are just some of many who made this possible. And all the people who interpreted here, as Norman said; on the three events; Sophie, Eva and Tim, thank you, and Mert and Marius, the technical equipment there, this is not a matter of course. I'd like to point out the Easter Marches, which will start soon and encourage everybody to take part of those and to mobilize widely for them. For I think what became clear is that the question of war and peace is a question of the survival of humanity which must be answered positively. We as scientists, as the United Nations, as citizens, as the peace movement, as workers, have to take it in our hands. It depends on us. So we have to put the focus on these major questions of our times and address them. This is decisive, and we can give orientation. And I think we succeeded with this positive breakthrough that we had in December and also with the nuclear weapons ban treaty. And we'll also post further information about combat drones on the website of the Drone Campaign and of the DFG, the organizers. And in conclusion, I'd like to quote from *The Life of Galileo,* by Bertolt Brecht. ‟Yes, I believe in reason's gentle tyranny over people. In the long run no one can resist it. Nobody can watch me drop a pebble and say: It doesn’t fall. Nobody can do that. The seduction of proof is too strong. Most people will succumb to it, and in time they all will.”

In this sense, I thank you for the very rational remarks today, and I am sure that they will to some extent overcome the dominant unreason.

So those are my thanks to all, and information. Are there any other urgent points, or does somebody have something to add?

##### [02:08:31.880] - Norman Paech

Goodbye. Thank you. And Carolyn, all the best to you. It was nice to meet you.

##### [02:05:54.800] - Carolyn Horn

Thank you. Thank you so much.

##### [02:06:01.970] - Peter Förster

Thanks, everybody. Thank all the participants. Thank everyone who listened to us. And I hope to see you at the Easter Marches, hopefully in actual person.

##### [02:06:07.790] – Norman Paech

Bye bye.