

Emerging Military and Security Technologies – A&D away day presentation and discussion - 7 February 2019 - van der Nootska

Reflecting on the work that has been done so far in SIPRI on Emerging Military and Security Technologies, it is clear there is a lot of interest in-house on this topic with no one project monopoly and a lot of potential for further development and collaboration.

The work that Vincent has been doing so far is technology driven. The research questions are guided by the technology themselves. He took some emerging technology areas like AI, robotics and autonomous systems and tried to understand how their development is or could be impacting the nature of armed conflict, strategic stability or human security? It also looked at how the risks they pose could be addressed via existing governance frameworks – arms control and export control.

For Vincent the issue of autonomous weapons was his entry point to the larger conversation on emerging technology and international security, a topic that has grown in recent years from being a niche issue to being a very topical area. Many institutes are trying to cover this topic and the fact that the German Foreign Office is organising a conference related to emerging technologies in March 2019 is a good indicator of the level of interest and it's important for our work that SIPRI remains part of the continuing conversation.

The type of role that SIPRI could play is to do what SIPRI does best, which is, provide unbiased verifiable information to allow stakeholders to have a good and sound discussion. In the case of LAWS, the idea was that SIPRI would be an educational resource. Its research would demystify current technological developments so that policy makers and NGOs realise and understand what is going on and understand the opportunities as well as the limitations.

In terms of topics, SIPRI should expand its expertise beyond the areas of AI, Robotics, Cyber and AM. Convergence (i.e. a number of developments in various areas of technologies connecting and reinforcing each other) is one topical niche topic that SIPRI should continue to explore. It was the key theme of the SSC, and SIPRI has on going projects that precisely looks at this. One is the BIO Plus X activity being worked on by Kolja, Vincent and Sibylle involving the preparation of a detailed report and the other on the convergence between AI and nuclear weapons involving Petr and Lora. These activities and projects showcase the type of work SIPRI can do but nevertheless it is suggested there is a need to diversify the expertise in-house about specific types of technologies.

In terms of personal priorities, Vincent would like to continue the work he has been doing on autonomous weapons. For him, SIPRI should remain an actor that is doing cutting edge work in this area. In this context, Vincent has been exploring the possibility of doing a project with ICRC on the issue of meaningful human control. It is hoped this new project support the discussion to the UN level on this topic.

With regard to providing greater conceptual coherence to SIPRI's work on emerging technology, one concept that can be deemed useful: fourth industrial revolution. Not a perfect concept but it's a concept picked up by a number of actors to talk about under one umbrella of developments in multiple technological areas: cyber, AI, robotics, computing and technology, manufacturing with 3-D printing, etc. While we have some expertise in-house in the aforementioned areas and associated it would be valuable in the long-term to have real cyber expertise and nanotechnology expertise in-house.

In the short-term, it would be useful to have an institute wide conversation and brain storming process on the issue of emerging technologies. It would be interesting to map areas of interest, expertise, resources and what a potential future role for SIPRI could be? Could we come up with more innovative project ideas? Could we agree on research ideas and long-term goals for SIPRI's research on emerging technology? Could we partner up with other organisations such ICRC, UNODA for example?

The outcome of such a process could increase coherence and help mainstream the topic within the institute. Beyond cluster 1, if we take a technology analytical lens, we see in cluster 2&3 potential questions to be addressed.

There are plans to engage further with Luc and the Conflict & Peace cluster, who are planning the Stockholm Security Conference 2019 with the (tentative) title this year of '*The Future of Armed Conflict - Who? Where? Why?*' The idea is to go beyond looking at the weapons and governance instruments and also look at their use. This is something done by cluster 2.

Looking at the development issue in cluster 3, we could also examine the positive role of technologies for enhancing human security and development. One proposal prepared for submission to the Norwegian MFA by Vincent was based on the idea of examining the impact of cyber-security on development and human security. When we think of cyber security, we should not think just in terms of it being a national security issue but how we can ensure that we don't undermine human security by restricting human rights online, undermining privacy and freedom of expression, how to find that balance? These are questions and a conversation it is suggested SIPRI can be involved in.

In summary, there are many interesting discussions to take forward, not least the industrial dimension.

Point that were discussed with the group.

- *Possible issue of interest for AMEX:* How do we conceptualize the arms industry given all these technology trends? Do we need to redefine what an arm means? How do we do the TIV? What are the technological trends in the industry? Is there going to be a big shift because technology is shifting? How does it impact military spending? How does it impact arms control and export control?

The SIPRI arms industry work and dealing with emerging technologies has been a perennial problem but it has become increasingly challenging and these developments

more important. We know there things that are intangible and we do not see like certain types of software. Trying to keep track in a quantitative way of these technologies is difficult. Who is doing what? Getting what? What is the impact? We don't really know and this leaves a gap. However, right now when you look at conflicts, how many of the weapons used are not emerging technologies? We should not forget about non-emerging technologies and how they are evolving and developing and the impact they have. What does this weapon development mean? What can it do or not do? These are questions we get asked and we need to maintain our knowledge of technological developments of existing weapons. It makes sense that we are able to brief policy makers, media, academia, and the interested public and keep SIPRI as a go to place for education and such questions.

- *Terminology:* It would be useful to have clarity on what is meant by emerging technologies. When is a technology no longer emerging? Perhaps a list of what is included in this term would be useful.
- *Possible issue of interest for nuclear team:* Technology as enabler of weapons that already exist. For instance not just AI or autonomy but also new materials have enabled conventional weapons such as submarines and delivery systems to play a strategic role which in turn changed everything, even the balance of power and the role of nuclear weapons. New technologies broadly defined have enabled conventional non-nuclear systems and in the future it will have an impact on military relations, the role of nuclear weapons, military plans and doctrines. Another aspect mentioned: how may emerging or existing technologies be used in the verification process going forward in what hitherto has been a very conservative area.
- *Engaging in the debate on emerging technology.* More broadly, examining the issue of securitising emerging technologies is raised as an interesting aspect to explore further. How/Why are they seen as possible or real security problems?