

MEANS OF WARFARE

Interview with Terence Taylor*

Mr Terence Taylor is a member of the Directing Staff of the International Institute for Strategic Studies (IISS) and President and Executive Director of IISS-US. His main area of work is at the intersection of science technology and international security policy. He is co-director of a project to develop a charter for a code of conduct for life scientists in academic circles and private industry on safe, secure and ethical behaviour. In addition, he is leading a project for the development of concepts and methodologies on risk assessment for high-level policymakers faced with complex emergencies. He is also a member of the Board of Editors of the International Review of the Red Cross.



How do you see the role of technology and weapons in times of war?

As a general proposition, the science and technology associated with the production of weapons, munitions and various forms of delivery means do not provoke armed conflicts. Political, historical, economic and many other reasons lead to armed conflicts, but not weapons and technology as such. However, technology and arms can influence or even determine the course of an armed conflict, affect combatants and civilians, have an impact on the environment and even determine the outcome of the war. They therefore have a huge influence.

However, with regard to the latest war in Iraq, was not the question of arms said to be the origin of a military campaign?

There was a potential capability, particularly in relation to weapons of mass destruction, which was a pivotal factor in the decisions made by those countries that decided to go to war against Iraq in 2003. This was not a new issue; it had arisen at the end of the 1991 Gulf War and the questions surrounding Iraqi weapons of mass destruction had not been resolved. However, that Iraq might

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have been able to develop weapons of mass destruction in order to promote the objectives of the then regime of Saddam Hussein was a major factor. In that sense, the type of weapon and the scale of its impact linked to a particular situation were decisive factors.

Has the global threat scenario in relation to arms altered in recent years?

The issue of weapons of mass destruction is more prominent; in particular, the new developments in relation to them are a major factor of the global threat scenario. If you go back to the Cold War, some would argue that nuclear weapons and particularly strategic ones were a major factor in preventing a military confrontation between the great powers of that period and nuclear deterrence was working on both sides.

In the present situation, the new development is the potential for weapons of this kind, be they nuclear, biological or chemical, getting into the hands of non-State groups. Science and technology have moved to a stage where small groups can avail themselves of technologies that can kill very large numbers of people, potentially tens of thousands of people. I am talking about a potential rather than an actual capability. This is a new feature of the international security landscape, starting from the mid-1990s onwards. It naturally produces a great deal of uncertainty in how to respond to this phenomenon, and in particular to transnational terrorism.

Therefore, it is not so much the weapons as such, but their potential use by different players that has changed. In other words, did the development of these weapons make them more dangerous or more difficult to control?

What is worrying many governments around the world, in particular governments like those of the United States and European powers, was what one leading political scientist, Joseph Nye from Harvard University, called the “democratization of violence.” The advances in science and technology, without being specifically related to weapons development as such, gives potential to individuals and groups to make dangerous weapons, for example a biological weapon which could potentially kill many thousands of people. That is the big change. The possible war or war-like situation is different from the classic State-to-State type of armed conflict and the response to the new threat needs to be different.

Is technical progress really making it much easier to get to such materials in order to launch attacks?

As a general proposition that is correct. However, I do not want to give the impression that it is presently easy for a small State or a non-State group to, for example, build a nuclear weapon — one that actually involves a nuclear explosion, not a radiological weapon. It is certainly easier to do so, but still involves quite high-level capabilities and the acquisition, in particular, of weapons-grade fissile material, which is very difficult to get. In the large-scale

dismantling process that is going on in the countries of the former Soviet Union, an illegal transfer or a theft is conceivable. However, it is in the biological and chemical areas that the developments are very worrying and where it is possible for small groups to build a weapon that can be delivered. Even though it is still quite difficult, it has become a lot easier than it used to be.

According to the Lugar Report on weapons of mass destruction, the main threat assessment of many of the experts in the field has been the potential use of radiological weapons, and you have alluded to it. Is there a military use for these weapons?

This is a weapon with high explosive content, RDX or some other similar explosive, packed around with radioactive material. There is no nuclear explosion, but the conventional explosion spreads radioactive material over a wide area. Through a car bomb, the centre of a city could be contaminated. It would be hugely difficult or, depending on the radioactive material, even impossible to clean up and re-occupy the terrain again. You can imagine the effects of such an attack in a major financial centre like New York City, London or Zurich, or in any urban conglomeration whatsoever. This scenario would not kill many thousands of people, even though some persons could die because of the high explosive content and some could be contaminated if a lot of radioactive material falls on them. It is more a weapon of mass *disruption* rather than a weapon of mass *destruction*. Nonetheless, it could be very, very disruptive and that is something that one has to really worry about.

Is there a real distinction to be made between weapons of mass destruction and other weapons, between conventional and non-conventional weapons?

There are two levels to this question: one has to distinguish between the political and the technical level. At the political level, the term “weapon of mass destruction” was coined in the 1940s and is a product of the political exchanges between the major powers of that period. It became customary to use that term, and it found its way into the formal legal negotiations in the late 1940s. It encapsulated specifically nuclear, biological and chemical weapons. At that time, chemical and biological weapons were already subject to the 1925 Geneva Protocol and only nuclear weapons were not subject to any international regulation. In the political sense, the term was used to describe weapons, which ought to be specifically regulated by international law.

However, from a technical viewpoint, the term does not describe the scale of the number of victims or of the catastrophic damage that these types of weapons could inflict, because those three weapons can deliver very different scales of casualties or destruction. Nuclear weapons are the ones that usually fit the term of weapons of mass destruction without any disagreement. Biological weapons do not cause massive material destruction, but could kill potentially many thousands, maybe hundreds of thousands or even millions of people. Biological weapons would thus fulfil the description because of the massive

casualties involved. But chemical weapons might not fulfil the description as they have a more local effect, and can cause hundreds of victims only if very large quantities of chemicals are used.

Could conventional weapons be as destructive as weapons of mass destruction?

In terms of their effects, chemical weapons, in particular, may not be very different from many large-scale conventional weapons. But for political and legal reasons, they have been placed under the category of weapons of mass destruction. The trend in conventional weapons is towards more precise targeting with high explosive warheads of more lethality at the point of impact. Generally speaking, collateral casualties and damage may be less – but only of course if the intended military target is struck.

Should conventional weapons be individually regulated, or do you think that it is more important to reinforce the general principles governing the conduct of hostilities?

Maybe here I could be accused of being too traditional, but I believe there's still enormous work to be done in promoting the existing laws of armed conflict, whether in relation to means of warfare, to conduct on the battlefield or maybe more obviously to the treatment of prisoners. Dissemination of the existing law is of overall importance.

When is there a need for specific regulations?

When one looks back over history, the norms that are the most successful are the ones that have arisen from the bottom up. An obvious historical example is the public revulsion against the use of chemical weapons in the First World War, resulting in the 1925 Geneva Protocol. I think that it is the people on the battlefield, with a vested interest in having some form of regulation, who are best placed to judge which norms offer effective regulation. This is still true, but requires progressive action as new technologies and new capabilities come into play, such as anti-personnel lasers and fuel-air explosives.

Should mainly military people therefore be involved in the process?

We need to engage military people, people at the sharp end of the process, in order to try and develop effective and new regulation. A good example of this is anti-personnel landmines. There was a critical mass of military people around the world who realized that these kinds of weapons were unacceptable and expressed the opinion that they ought to be banned. Through “networks of networks” involving the whole of civil society, we eventually arrived at the Ottawa Convention banning anti-personnel landmines altogether. Not all States are parties to the treaty, certain important ones have yet to join, but it is a model for the future showing how one can proceed on arms issues relatively quickly and effectively.

It may be argued that humanitarian agencies and civil society do not have the expertise in the military field, and even less so where weapons are concerned, to take part in the debate. Do you think that weapons are a “domaine réservé” of States and military establishments?

Different scenarios apply according to the type of weapons involved. In the case of weapons of mass destruction, there is a natural conjunction between civil society, the military and political players. As in the case of misuse of life sciences, the question of weapons of mass destruction requires an overall response, which can only be successful with the full engagement of civil society. In fact, their role may be even more important in relation to the misuse of life sciences as a weapon by a State or by a non-State group.

Similarly, in the case of chemical weapons, the risks lie within a multibillion-dollar industry and the industry has to be involved. There has to be interaction between the governments and their militaries as well as civil society in order to have even a remote chance of being able to prevent these weapons from being used and then being able to respond, should they be used.

The challenge is rather different with a kind of weapon that is more easily identifiable, like nuclear weapons. To a large extent, the dual-use aspect of these weapons is confined to the use of nuclear energy. But even there, with the pressure from global warming and the search for alternative sources, nuclear energy is almost certainly going to become more widespread. There will be more nuclear power stations around the world, and preventing nuclear materials from getting into the wrong hands will become more difficult.

With regard to conventional weapons, there are clearly issues that are primarily of humanitarian concern. An example would be the remnants of war – that is to say unexploded munitions and mines left on the battlefield that can cause death and injury to civilian inhabitants and prevent them from having access to land for agricultural purposes, inhibiting free movement and commerce.

In the field of conventional weapons, new kinds of weapons are appearing which are designed to be non-lethal, in other words to incapacitate rather than to kill. According to the former Vice-Chairman of the American Joint Chiefs of Staff, electromagnetic and pulse-power, lasers, chemical systems, ultrasound and infrasound will be used in future wars to stop enemies.

It is probably better and less euphemistic to describe “non-lethal weapons” as “low lethality weapons.” The drive behind those weapons is to deal with what is generally described as counter-insurgency operations, such as the range of operations going on in Iraq now. They look very much like conventional armed conflicts, with sometimes large-scale action involving combat aircraft. At the same time, they include operations dealing with insurgents and terrorists, and even hostage situations. Such operations often take place in the middle of built-up areas with large civilian populations. There is a desire to develop and use a

less than lethal kind of weaponry to minimize collateral casualties. On the one hand, anti-personnel laser-blinding weapons, for example, illustrate the kind of advances meant to limit casualties. On the other hand, the same weapon can be used to blind soldiers and civilians deliberately. In the end, it was declared unacceptable and was banned through the efforts of the ICRC, which I think was a good thing. These new developments of so-called non-lethal weapons do need attention from those of us who are concerned about the laws of armed conflict.

During the Cold War, the arms race between the US and Russia determined arms control measures. Do you believe the new political setting can explain the current deadlock in the disarmament negotiations held in Geneva?

It probably has more to do with the technological advances. In the classic Cold War period, we were looking at large weapons like intermediate-range or intercontinental ballistic missiles, which are recognizable and accountable. The Chemical Weapons Convention, which was finally negotiated by 1993 and came into force in 1997, represents a new advance in terms of arms control. There were no specific military organizations in the lead, but many players, including a multibillion-dollar global industry, became involved in a verification system. This opens a new chapter in the development of arms control treaties and, in particular, verification. Shortly after the collapse of the Soviet Union and the Warsaw Pact, it was possible to put through a very detailed and far-reaching verification regime for the Chemical Weapons Convention. It would not be possible to do that now. The Verification Protocol for the Biological Weapons Convention that was under negotiation for more than a decade did not come to fruition.

What could the options be to stop the proliferation of weapons of mass destruction aside from arms control measures?

I think the Nuclear Non-Proliferation Treaty remains immensely important; it has more members than any security treaty ever and is still generally supported. The Chemical Weapons Convention likewise is global in its scope, reinforces a global norm already in place, together with the 1925 Geneva Protocol, as does the Biological Weapons Convention. Though these treaties are tremendously important, we do have to be creative and innovative in ways of underpinning them in order to make sure that they are enforced.

Even in the absence of stringent verification mechanisms?

Scholars like Anne-Marie Slaughter and international civil servants such as Jean-François Rischard are two proponents of the idea, already mentioned, of “networks of networks” to underpin and build norms. This is a bottom-up effort in that it engages the community, which has a vested interest in responsible behaviour and developing a culture of responsibility. If you were to take the Biological Weapons Convention, what is required now is a real effort to engage private industry, the academic community in the life sciences and government research institutes in an effort of awareness and norm building to

help prevent the life sciences from being misused. This effort should be aimed at enhancing public safety and security by helping to prevent the misuse of biotechnology by government and non-governmental groups and the potential use of weapons that could kill many thousands of people. One important way to minimize the risks is to promote awareness of the dangers through a code of conduct and associated training and education activities.

Will industry cooperate?

Industry should have a genuine interest in the success of this endeavour. Its business is damaged if somebody misuses science. Its members will be subject to rigorous legislation, which may be perhaps a rather blunt instrument and not something they would engage in voluntarily. Measures and restrictions may be imposed on them, which will inhibit scientific advances. In the life sciences area, this can be hugely damaging, because the best defence is found in the advances of science itself. Those advances have to be safeguarded, but at the same time the risks must be understood and explicit steps taken to manage them. This can be done through commitment to a charter or a code of conduct, and by building norms rather like the Hippocratic Oath: it is not a legally binding thing in itself, but it can build norms that eventually find their way into national and international legislation.

Private efforts like those of the ICRC and its call on scientists and industry to assume their responsibilities in preventing the hostile use of biological agents are fine examples of how one should progress. There are other ideas in this respect, for example in my own case through the promotion of an International Council for the Life Sciences with a charter. The project is focused on engaging private industry and other critical stakeholders in addressing the opportunities and risks emerging from advances in the life sciences, especially with regard to the threat of biological weapons and bioterrorism. All these awareness and norm-building efforts are much more important and effective now than they might have been ten or fifteen years ago.

What about non-State players in armed conflicts? How can you possibly bind them in?

A welcome side effect of these initiatives is to isolate people who are not sticking to these ethical principles. You do not expect terrorists to obey the law: their whole purpose is to do the opposite, to overturn the law, so you would not expect members of al Qaida, for example, to follow the kinds of norms that we have been discussing. I think the purpose of codes, charters and ultimately international law is precisely to single out and make clear what constitutes unacceptable behaviour and illegal acts. The players define themselves by their behaviour. Responsible persons would want to be on the inside of such a charter or code, not on the outside, in order to show they are behaving responsibly and believe in managing the risks, notably through cooperation between themselves and with governments.

Are private initiatives replacing international regulations?

I do think that these initiatives lead to better regulation by States. To take the life sciences as an example, I think so because biosafety and biosecurity overlap. For instance, there is no global standard for the containment of laboratories.

The World Health Organization (WHO) has elaborated guidelines. But there are limits to what the WHO can do. It is an intergovernmental public health organization, not a security organization. That is why States need help from the outside by private efforts and organizations, by the ICRC and others.

These initiatives are building up cooperation. Another way to create treaty-like international legal obligations, linked to the powers held by the Security Council under the UN Charter, is to have an Article 25 decision of the Council ordering States to amend their domestic legislation to prevent threats to international peace and security from surfacing. The two resolutions 1373 (2001) and 1540 (2004) seem to rely on the stick rather than the carrot.

I think the Security Council resolutions are neither a stick nor a carrot. They are vitally important elements in encouraging UN Member States to strengthen their national legislation in order to help prevent the proliferation of technologies, as well as to help prevent more accurately the misuse of technologies that could be used to produce weapons of mass destruction. This is the top-down effort. However, this will not work on its own. It requires a multinational and multi-level effort in order to make the world safe and secure against the increasing risks that we are being faced with. There is a safety and security argument, which overlaps here. I think it is useful to combine carrots and sticks.

Enforcement measures are therefore also necessary?

Yes, and there is a question which certainly exercises my mind, but which has more to do with *jus ad bellum* than with *jus in bello*. It will not be something the ICRC will be engaging in. It is the decision whether and when to carry out military attacks related to arms possession or developments. What's more challenging with the developments in sciences and technologies, very challenging for governments now, is the possibility that States may feel compelled to carry out some form of anticipatory self-defence against perhaps either a State or a non-State armed group that has a weapons' potential to kill many thousands, if there is knowledge of those groups. The intelligence has to be good and this will always be a matter of debate. But in the light of the current scientific and technical developments, thinking is required about the rules of anticipatory self-defence. It is a very sensitive issue to talk about the rules of *jus ad bellum*, and many would be reluctant to disturb them and would be inclined to keep them as rigorous as they are now. Nevertheless, it is something that has to be thought about.

Even for a very developed country, it is very difficult to contain and to confront huge natural catastrophes and to bring relief to people in need. However, this is probably easier especially when compared with scenarios of the use of weapons of mass destruction.

In the United States and to a lesser extent in Europe, and even less elsewhere in the world, efforts are under way to plan for response should the worst case happen and one of these weapons be used. There certainly needs to be planning for this. I have my doubts about how realistic and complete it is. Countries that have suffered major catastrophic attacks have taken vigorous action in the hope of preventing further ones – but elsewhere vulnerabilities remain.

What is urgently needed is some kind of risk analysis and risk assessment. Concerning the possible use of a biological weapon, for example, there are widely varying views as to what the real risks are. There are many countries faced with disease arising from natural causes that they live with every day and that kill many people. To talk to them about biological weapons is somewhat challenging. One might get a better resonance in a developed country where infectious diseases are less of a concern. There are thus differing views of the risks involved. I think it is presently easier to engage civil society in the United States against hurricanes or against the tsunami in the Pacific Basin, or to motivate people against the possibility of the avian flu transforming into a human pandemic. These kinds of events are rooted in natural causes, which motivate a response more easily.

Is that because nobody wants to know about such a scenario, because they are too afraid of it?

I can only guess that they think, “Well, it’s not us.” People do not see themselves as being a target of a nuclear, biological or chemical weapon in this way. They may fear that it is their countries or their infrastructures that may be used by terrorist groups in order to develop or acquire the materials necessary. But again, there are differing perceptions of the risks as far as each individual country is concerned and this is the most challenging part of trying to develop an effective response to the use of these kinds of weapons.