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**A legacy of responding to new means and
methods of warfare: the regulation of new
weapons under international law**

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It is often said that the legal regulation of weapons is lagging behind technological developments. In this presentation, I challenge this proposition by advancing three reasons why we should exercise cautions against exaggerating regulatory problems in relation to new weapons.

In a nutshell, these three reasons are: (1) the legacy of weapons law principles; (2) the importance of adequately understanding the characteristics, potential and limitation of new technologies; and (3) the power of non-legal forms of regulation.

First of all, weapons law 101. There are two general principles under customary international law prohibiting, first, the employment of arms, projectiles or material ‘calculated to or of a nature to cause superfluous injury or unnecessary suffering’, and second, the use of weapons that indiscriminately affect both lawful targets and civilians. These two principles address two different humanitarian concerns. The first principle – superfluous injury or unnecessary suffering – aims to limit the degree of injury or suffering inflicted upon lawful targets, relative to the military necessity underlying the choice of particular weapon. The second principle – indiscriminate weapons – is, on the other hand, designed to protect civilians from the effects of the weapon.

Various weapons treaties address these two humanitarian concerns with reference to specific types of weapon. For example, the ban on certain types of explosive projectiles, expanding bullets, and non-detectable fragments are specific manifestations of superfluous injury or unnecessary suffering as agreed by states, whereas the ban on anti-personnel mines and cluster munitions was driven more by concerns about their indiscriminate effect on civilians. The legal regulation of these weapons is not necessarily considered as failure to keep up with technological developments. Indeed, 1868 St Petersburg Declaration and 1899 Hague Declaration III were both adopted to prohibit certain types of explosive projectiles and expanding bullets respectively, as these new weapons emerged for use in the battlefield. Non-detectable fragments and blinding lasers were both banned before these technologies became operationalised in combat.

The absence of specific treaty prohibition does not mean that new weapons are unregulated under international law. Their lawfulness must still be assessed in light of the general principles explained earlier and the new weapon may well be considered to cause superfluous injury or unnecessary suffering, or indiscriminate in nature. Difficulties, however, arise from the application of these principles. The intended injury or suffering is considered superfluous or unnecessary only against the underlying military value attached to the new weapon. Whether the new weapon is indiscriminate in nature or not may well be situation-dependent. These general principles are, in essence, flexible but elusive in application.

The legality of any new weapon can be a subject of debate, but even in such situations the general principles can provide normative guidance for the debate. As explained earlier, the two general principles articulate two different humanitarian concerns – one regarding the degree of injury or suffering inflicted upon lawful targets, and the other regarding indiscriminate effect upon civilians. The regulatory debate about any new weapon should, at least, proceed with clarification of which one of these humanitarian concerns is raised and is to be addressed. For example, there is no point of reassuring that lethal autonomous weapons are capable of discriminating lawful targets from civilians for people who are concerned about the idea of machines killing a person. Likewise, emphasising or requiring human control in the use of lethal autonomous weapons does not necessarily help address the indiscriminate effect of the weapon system.

The second reason why we should not overstate regulatory problems with new weapons is that our understanding of emerging technologies tends to be limited. This is because the development of a new technology is not a sequential process, but rather involves a complex web of scientific findings

and technological breakthroughs. Once developed, the technology is further refined for improvement and sophistication often with various tailored applications. Consider, for example, how the technology evolved for vehicles, aircraft, and smartphones, just to name a few.

A poor understanding of the characteristics of any new technology, its potential applications and limitations often results in fearmongering campaigns, with exaggeration of the risks and dangers the technology might pose. The 'fear' factor is an inevitable human condition as the instinctive and primitive response to unknowns. However, any regulatory attempt driven by fear is destined to be short-lived, as has been proved by the failure to restrict aerial warfare with the use of balloons for discharging projectiles and explosives. The Declaration was adopted in 1899 to set a moratorium on the use of balloons for launching attacks, but soon later, major military powers realised the strategic advantage that aerial warfare would bring to the battlefield and refused to agree with the renewal of the restriction.

It is always advised that experts, including lawyers, exercise their due diligence by developing adequate understanding of the subject matter before drawing any conclusions, and do not make any assumption about technological capabilities and functional parameters. This means that it necessarily takes time to develop sufficient understanding of the characteristics of a new technology as the basis for adequate assessment regarding the need for new regulation and the ways in which its applications should or can be regulated.

The third reason is the power of non-legal forms of regulation. It is not legal considerations that direct weapons development programmes. Rather, constraints on weapons development are derived from other factors, such as strategic and political considerations, technological feasibility, financial costs, and existing military infrastructures. Legal regulation is only one form of controlling the means and method of warfare, and quite often, not a decisive one. Legal regulation is not necessarily lagging behind when other forms of regulation are available to regulate the development and use of new weapons.

Consider, for example, the constraint on the use of depleted uranium (DU) weapons. While DU munitions are not prohibited, there was strong public reaction against the use of DU munitions in the aftermath of the two Gulf Wars and military operations in Bosnia, Kosovo and Afghanistan. Despite disputed scientific evidence regarding its health and environmental effects, there has since then been a significant reduction in the stockpiling and use of DU munitions in many countries. Nuclear weapon is another example. There has been no single instance of nuclear launch in combat since Hiroshima and

Nagasaki, despite the fact that nuclear weapon states have been persistent in denying illegality of nuclear weapons.

For effective regulation of new weapons, the mere adoption of a specific treaty is not as important as the process leading up to it and the building public pressure to raise political costs associated with the development and use of the weapon. In this respect, we should acknowledge the significant power of public campaign as a non-legal form of regulation constraining the development and use of a new weapon. Because of this power, public campaigns should be employed wisely, not blindly or driven by fear, in light of realistic assessment of technological capabilities and their potential role in military affairs.

The oft-quoted observation that the legal regulation of weapons is lagging behind technological developments appears to be based on a myopic view, focusing solely on the specific treaty prohibiting or restricting the use of a particular weapon. It is my submission that we should adopt a broader perspective to the regulation of new weapons, with careful and evidence-based assessment of technological characteristics, while seeking guidance from the general principles of international humanitarian law.