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**Michael Crowley, (2015): Chemical Control – Regulation of Incapacitating Chemical Agent Weapons, Riot Control Agents and Their Means of Delivery, Palgrave- Macmillan, pp 378**

Dr Michael Crowley is project co-ordinator of Bradford Peace Studies Non-Lethal Weapons Research project, as well as a Research Associate of the Omega Research Foundation and one of a tiny number of researchers able to speak authoritatively on both incapacitating chemical weapons and riot control agents -the core topics of his meticulously researched new book.

Given the welcome advent of the Chemical Weapons Convention (CWC) of 1997, people could be forgiven for thinking that all weapons employing toxic chemicals, were now all outlawed. Alas not so. The CWC is policed by a formidable bureaucracy, staffed by 500 officers working out of its HQ in The Hague, which Crowley informs us, has State parties representing 98% of the global population and landmass, as well as 98% of the worldwide chemical industry. And yet there is a loophole in the treaty which allows states to use chemical agents for “law enforcement.” This term has never been adequately defined and now there is a burgeoning weapons industry for internal state control.

Certain States have sought to develop and deploy secret weapons employing “knockout” or incapacitating chemical agents. The most notorious being the use by Russian security forces of an incapacitating agent to free over 900 hostages seized by Chechnyan terrorists during the Moscow theatre siege of 2002. Although the hostages were freed, 128 died when the authorities deployed the paralysing incapacitating agents without advising the medical agencies what they were treating, for security reasons.

However, the most commonly used and misused weapons employing toxic chemicals are riot control agents or tear gases. In 2015, from the refugee camps of Calais to the border-scapes of Serbia, many folk fleeing conflict have been faced down with chemical riot control agents. Perhaps most stark of all was the tear gassing of mourners of the bomb attack on a Turkish peace rally, in Ankara, during October 2015.

Indeed the very name teargasing is a misnomer for forms of chemical irritant which in larger concentration induce vomiting, followed by death. And the very nature of the chemical agents are changing, as are their means of distribution.

This book on ‘Chemical Control’ is timely and published as part of a series of works looking at governance and regulation issues. It provides an unusual case study in what is deemed “holistic arms control”: a three stage process which is systematically explained here.

It is an exceedingly innovative approach which examines the nature of the weapon; current and potential scenarios for use and attendant human security concerns – together with any related implications of advances in associated science & technology; this is coupled with an exploration of the full range of potentially applicable control regimes, together with a comprehensive strategy to improve and evolve existing control mechanisms to better regulate or ban.

The book exhaustively applies this model in the two areas of major concern, incapacitating chemicals and riot control agents and related means of delivery. Chapters 2, 3 & 4 examine stage 1 of this process, looking at key chemical agents and their effects in great detail, together with proposed deployment scenarios. Since the eighties, the boundaries between chemical and biological agents has become increasingly blurred. His key focus is on what he calls mid-spectrum agents which includes pharmaceutical chemicals, bio-regulators and toxins. The chapters helpfully identify both key manufactures and countries engaged in research of concern.

Chapters 3 & 4 are scary in their documentation of inappropriate use of riot control agents – tear gassing as coercive street or prison punishment, in 93 countries. He also explores development of ever more powerful delivery mechanisms: what are the likely consequences of deploying weapons capable of firing 200 tear gas grenades a minute? How discriminate can wide area tear gassing systems be to those who are merely bystanders?

Chapters 5-12 cover Stage 2 of the holistic assessment process: the full range of regulatory processes which could be applied to RCAs and incapacitants, including not just the CWC but also various other arms control agreements as well as, international humanitarian law; human rights law and international criminal law. These approaches are novel in their potential such as using the UN Convention on Psychotropic drugs to regulate incapacitant weapons, many of which like fentanyl, are crude anaesthetics. Chapters 11 examines potential powerful export control or prohibition mechanisms, e.g those covering dual use goods, or the use of UN and regional embargos. The detail presented, adds to the authority of the work which provides key examples of not just new weapons but specific case examples of misuse and abuse.

Chapter 12, which explores the potential regulatory roles of civil society in all its forms, is especially impressive, thoughtfully detailing new mechanisms for societal monitoring and highlighting specific detailed cases where, for example, human rights groups have identified and successfully halted doggy transfers of tear gas to abusive States.

As Amnesty International has shown again and again, these bottom up approaches can be far more powerful in limiting state excesses than relying on official procedures of redress. This work he suggests, includes academics and NGO's using open source documentation; field missions and witness testimony, utilizing the courts to press civil law in cases of alleged misuse; regulating dual – use research itself, education and awareness raising amongst the life science community and whistle blowing.

The power of this essential book is in the detail and such painstaking work will be necessary in the months and years which lie ahead, where such sub-lethal chemical weapons are increasingly used to contain inequality and injustice. We are already witnessing such weapons being deployed against migrants and as the numbers swell, more painful approaches towards policies of denial and exclusion are enacted. Crowley accurately identifies this as “creeping legitimization.” Now all of us have access to detailed knowledge on what these weapons represent.

**Michael Crowley, (2015): Tear Gassing By Remote Control, Remote Control Project Oxford Research Group,**

<http://www.oxfordresearchgroup.org.uk/sites/default/files/Tear%20Gassing%20By%20Remote%20Control%20Report.pdf>

## **TEARS FOR FEARS**

This formidable work, available online, complements the technical and explanatory regulatory frameworks articulated in the ‘Chemical Control’ book discussed above. Whilst ‘Chemical Control’

provides an expert perspective on international regulatory instruments, this punchy guide, 'TGRC', details the world's arsenal of chemical control manufacturers and their wares.

It details the ongoing development, testing and production of new technologies for facilitating remote and wide area tear gas attacks; and whistle-blows on the highly probable acquisition of these weapons by non-state actors in the future. TGRC pulls no punches in explaining how such weapons will be used in the future for wide scale punishment and disablement of large numbers of protestors, providing an incisive guide to how specific weapons will facilitate mass human rights abuse.

The advent of unmanned aerial vehicles (UAVs) and the beginnings of autonomous robotic mechanisms, mean that such facilities could be deployed by future remote control weapons. Indeed the front page illustration is of an Israeli Cyclone riot control drone system. The mass of photographs are shocking in their ability to make the word flesh. Who would build "indoor" riot control dispersion weapons systems when any fool knows that in enclosed spaces such chemicals, in sufficient amounts, can potentially kill and kill quickly? But here we have illustrated descriptions of dispersion systems from US companies using tear gas or pepper spray for employment in prisons. We also have Chinese "non-lethal" tear gas mines from the No9604 factory. Given China's increasing links with African nations, will we see 9604's products blowing up around protests in Africa in the near future? If so, this wonderfully illustrated report would rapidly enable development workers and local NGO's to "parent" the supplier.

The detail and illustrations here are forbidding and incredibly useful for researchers and NGO's to gauge what sort of weapons will be emerging on their event horizons soon. These include automatic or multi-barrel teargas munition launchers from China, France, Israel, South Korea and the US; unmanned ground vehicles with tear gas launchers from Abu Dhabi; Riotbot from Spain; the MAARs remote operated ground vehicle with tear gas grenade launcher from the US; the Skunk UAV from South Africa, capable of firing 80 pepper-balls per second.

Both of these publications by Michael Crowley significantly add to our understanding of the present and future roles of new chemical agents. Now we have the data to create collaborative research circles. These must ensure that no company or state feels safe if it deploys weapons technology, which goes beyond the limits of domestic, human rights and international humanitarian law. There has been precious little published about weapons for pacification and their legal and human security costs. Crowley has pulled off a double whammy and hats off to him.