

Dear Sir,

In 2013 the Organisation for the Prohibition of Chemical Weapons was awarded the Nobel Peace Prize for its work in safely ridding the world of much of the chemical weapons stocks that had accumulated during the last century. Since then there has been an alarming re-emergence of the use of chemical weapons: Chlorine, Sulfur Mustard and Sarin in Syria; VX in Malaysia; and Novichok in the UK. Chlorine and Sulfur Mustard were first used in the First World War, Sarin and VX nerve agents were developed just before and after the Second World War, and Novichoks came to public notice in the 1990s. That history, given the current rapid advances in science and technology, raises the critical question of what other agents might be developed and used if the re-emergence of chemical weapons cannot be contained.

*Preventing Chemical Weapons: Arms Control and Disarmament as the Sciences Converge* recently published by UK Royal Society of Chemistry identifies issues that States Parties to the Chemical Weapons Convention (CWC) should address at the 4<sup>th</sup> Five Year Review Conference this November. One such issue – CNS-acting Chemicals – has been raised in official papers since 2014. The question is whether Article II.9(d) of the CWC, which states as a peaceful purpose “Law enforcement including domestic riot control,” allows the development and use of agents, such as CNS-acting chemicals, as well as standard riot control agents? The available evidence demonstrates that there is little chance of CNS-acting chemicals being safe in an operational environment, and that the search for such agents could lead to the erosion of the prohibition of chemical weapons. The scientific community should pay careful attention to this issue because if the meaning of Article II.9(d) remains unclear dreadful new chemical agents based on our increasing understanding of the brain could potentially emerge.

Lijun Shang, Michael Crowley and Malcolm Dando, University of Bradford, UK