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Should Weaponised Moral Enhancement Replace Lethal Aggression in War?

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Abstract

Some have proposed the development of technologies that improve our moral behaviour – moral enhancement – in order to address global risks such as pandemics, global warming and nuclear war. I will argue that this technology could be weaponised to manipulate the moral dispositions of enemy combatants. Despite being morally controversial, weaponised moral enhancement would be neither clearly prohibited nor easily prohibitable by international war law. Unlike previous psychochemical weapons, it would be relatively physically harmless. I argue that when combatants are liable to lethal aggression to achieve an aim of war, they are also liable to weaponised moral enhancement to achieve that same aim. Weaponised moral enhancement will loosen just war requirements in both traditional and revisionist normative just war theories. It will particularly affect revisionist theories' *jus ad bellum* requirements for humanitarian and preventive wars. For instance, weaponised moral enhancement could be more proportional and efficacious than lethal aggression to effect institutional changes in preventive and humanitarian wars. I will conclude that, despite evading international war laws and loosening normative just war requirements, the intuition that weaponised moral enhancement would gravely harm combatants can be defended by arguing that it would severely disturb personal identity, which could potentially ground future prohibitions.

Keywords: moral enhancement; technology in war; psychochemical warfare; preventive war

1. Introduction

During an ongoing war, villagers are being subjected to coercion, torture and violence by enemy extremists imposing a radical ideology. Attempting to take

control of this village will result in most of the innocent population being killed. The extremists are willing to harm and sacrifice others and themselves in order to enforce perceived social norms. It is plausible that we will be able to dissuade them from this behaviour without bloodshed in the future. Increasing serotonin levels with the drug citalopram leads to increased harm avoidance when enforcing social norms.¹ Healthy study participants were less likely to harm others and themselves in order to punish norm violators.² Neuroscientific advancements might eventually lead to powerful interventions that are effective in real-world situations.³ They could be used as weapons in this hypothetical scenario. These extremists could be targeted with technological interventions to dissuade them from risking lives to impose a radical ideology violently. Taking control of this village would no longer result in the killing of most of its innocent civilians.

In a future war zone, minorities protesting for human rights are about to be attacked by anti-protestors who support a majoritarian dictatorship. Stationed NATO military forces are about to intervene. They can feed their weapons with one of three types of round that would target the exact same anti-protestors: large-calibre bullets, tear gas rounds, and immediate-release rounds that temporarily increase empathy for out-groups. Additionally, NATO soldiers have taken this empathy enhancer themselves in an effort to reduce unnecessary killings.

Although there can be objections to the use of any of these three rounds, only the first two clearly violate international war law. Likewise, an attack on an enemy-controlled village that foreseeably causes the killing of most innocent villagers would be considered a war crime, but using a harmless targeted intervention to dissuade the enemy from fighting would not. These unconventional weapons would leave the international community with serious questions, but they would not clearly violate any weapons prohibition.

Nevertheless, if weapons that manipulate moral dispositions such as empathy and norm enforcement were ever to be developed, some might prefer to die rather than be targeted by them. Suppose the Axis had developed psychochemical weapons which vastly increased ethnocentric prejudices, thus making the Nazi ideology appealing. It would not be surprising if many Allied soldiers would rather be lethally shot or suffer the horrors of chemical warfare than to let their deep moral beliefs be determined by Nazi ideology.

Although we do not currently possess the technologies mentioned above to manipulate empathy and norm enforcement, future advances in moral psychology and neuroscience could enable the development of new forms of psychochemical weapon. Unlike past attempts, they would be efficacious, physically harmless and evade current international war law. These weapons would be

¹ Molly J Crockett and others, 'Serotonin Selectively Influences Moral Judgment and Behavior through Effects on Harm Aversion' (2010) 107 *Proceedings of the National Academy of Sciences* 17433.

² Decreasing serotonin had the opposite effect in another study: Molly J Crockett and others, 'Serotonin Modulates Behavioral Reactions to Unfairness' (2008) 320 *Science* 1739.

³ Molly J Crockett, 'Moral Bioenhancement: A Neuroscientific Perspective' (2014) 40 *Journal of Medical Ethics* 370.

developed out of technologies already being proposed for voluntary civilian use, making their prohibition difficult. They would not be considered chemical toxins or biological agents.

Weaponised moral enhancement is a technological intervention that is expected to improve moral dispositions used against an enemy combatant. I will argue that proposed moral enhancement technologies could be weaponised and that such weaponised moral enhancement is neither clearly prohibited by current international war law nor easily capable of being prohibited by its principles. I will then argue that weaponised moral enhancement would loosen normative just war requirements, especially in humanitarian and preventive wars. I will conclude that, despite evading international war laws and resulting in laxer normative just war requirements, the intuition that many would rather die than be targeted by weaponised moral enhancement can be defended by considering its harm to personal identity.

In this article I refer to the laws of war as 'international war law'. Under this umbrella term I discuss both specific current weapons conventions and general principles applied to a new weapon; thus, the term will cover from the Chemical Weapons Convention⁴ to the Martens Clause.⁵ I reserve the term '*normative just war theory*' to the philosophical analysis of the morality of war. Here, *normative* refers to normative ethics, what is right and wrong, not legal norms.

2. Moral enhancement, technology and war

Consideration of the history of technology reveals past cases where most people would agree that we failed to use advances correctly and ethically, such as nuclear and chemical weapons. Even harmless transportation technologies can increase the odds of a pandemic which we are unprepared to address morally, as evidenced by the historically small COVID-19 pandemic. Scientists promptly developed an extremely effective vaccine, but the social coordination of its distribution lagged greatly behind. Some have argued that many of these ethical mistakes arose in part because of flaws in our moral character.⁶ They have examined the possibility of improving us morally as a response to our moral unfitnes to resolve cooperation problems arising from the development of powerful technologies. We may be able to survive the introduction of even more powerful and complex technologies only if we perform moral enhancement – that is, we improve our moral behaviour or motives with technological interventions.⁷

It seems clear that we often do not behave in the way we think we should. A technological intervention that would enable us to bridge this gap

⁴ Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (entered into force 29 April 1997) 1974 UNTS 45.

⁵ Hague Convention (IV) respecting the Laws and Customs of War on Land and its Annex: Regulations concerning the Laws and Customs of War on Land (entered into force 26 January 1910) *Martens Nouveau Recueil* (ser 3) 461, preamble.

⁶ Ingmar Persson and Julian Savulescu, *Unfit for the Future: The Need for Moral Enhancement* (Oxford University Press 2012).

⁷ Thomas Douglas, 'Moral Enhancement' (2008) 25 *Journal of Applied Philosophy* 228.

substantially would be highly desirable. These interventions could range from decreasing implicit racial biases to reducing overharvesting from a common resource pool. Several scientific studies have been able to reliably manipulate dispositions such as cooperativeness, trust, empathy, punishment, parochialism and commons allocation.⁸ Therapeutic drugs already in widespread use, such as anti-depressants and ADHD medication, have effects on our moral behaviour.⁹ Human morality could soon be enhanced with the use of technology. These technologies could improve moral reasoning, increase cooperation, refine our empathy, and enhance other traits implied in human morality. Many have raised concerns that moral enhancement itself would present risks if altogether possible, including those arising from technical and social implementation.¹⁰ I have argued before that moral enhancement would be prone to unexpected effects, such as self-reinforcement, the undermining of personal identity, and group-level paradoxical effects.¹¹

Moral enhancement has been advocated and criticised under the assumption of civilian use. However, there is the potential for military use. Nuclear power, the internet, space rockets, satellites and numerous other technologies were developed for military use before they found widespread application in society. Military application currently drives a significant portion of current research on artificial intelligence (AI) and robotics. *Prima facie*, it is not

⁸ Amy C Bilderbeck and others, 'Serotonin and Social Norms: Tryptophan Depletion Impairs Social Comparison and Leads to Resource Depletion in a Multiplayer Harvesting Game' (2014) 25 *Psychological Science* 1303; Carsten KW De Dreu and Mariska E Kret, 'Oxytocin Conditions Intergroup Relations through Upregulated In-Group Empathy, Cooperation, Conformity, and Defense' (2016) 79 *Biological Psychiatry* 165; Frank Krueger and others, 'Oxytocin Selectively Increases Perceptions of Harm for Victims but not the Desire to Punish Offenders of Criminal Offenses' (2013) 8 *Social Cognitive and Affective Neuroscience* 494; Wai S Tse and Alyson J Bond, 'Serotonergic Intervention Affects Both Social Dominance and Affiliative Behaviour' (2002) 161 *Psychopharmacology* 324; Richard M Wood and others, 'Effects of Tryptophan Depletion on the Performance of an Iterated Prisoner's Dilemma Game in Healthy Adults' (2006) 31 *Neuropsychopharmacology* 1075; Carsten KW De Dreu, 'Oxytocin Modulates Cooperation within and Competition between Groups: An Integrative Review and Research Agenda' (2012) 61 *Hormones and Behavior* 419; Michael Kosfeld and others, 'Oxytocin Increases Trust in Humans' (2005) 435 *Nature* 673; Meytal Fischer-Shofty and others, 'Improving Social Perception in Schizophrenia: The Role of Oxytocin' (2013) 146 *Schizophrenia Research* 357; Crockett and others (n 1); Crockett and others (n 2). For an overview of how social behaviour can be manipulated by pharmacology see Molly J Crockett and Ernst Fehr, 'Pharmacology of Economic and Social Decision Making' in Paul W Glimcher and Ernst Fehr (eds), *Neuroeconomics* (2nd edn, Elsevier 2014) 259.

⁹ Neil Levy and others, 'Are You Morally Modified? The Moral Effects of Widely Used Pharmaceuticals' (2014) 21 *Philosophy, Psychiatry, and Psychology* 111.

¹⁰ Nicholas Agar, 'Moral Bioenhancement Is Dangerous' (2015) 41 *Journal of Medical Ethics* 343; John Harris, "'Ethics Is for Bad Guys!'" Putting the "Moral" into Moral Enhancement' (2013) 27 *Bioethics* 169. These authors are also sceptical of the near future feasibility of moral enhancement, an issue I will not address here. A reasonable chance that we will attempt to develop these technologies is sufficient motivation for my considerations. The many studies cited at n 8 support that modest claim. Moreover, moral enhancement would not violate any known natural law; hence, it is at least physically possible.

¹¹ Joao Fabiano, 'The Fragility of Moral Traits to Technological Interventions' (2021) 14 *Neuroethics* 269.

unreasonable to suppose that a possible future technology will first be developed as a military technology. Furthermore, moral enhancement could have an impact on how and why we engage in war. Past technologies have had a significant impact on the nature of war, from black powder to nuclear weapons to precise drone strikes. Recent developments in automated drones and AI have already changed how countries engage in war. Extremely precise non-explosive missiles dramatically reduce the cost of foreign interventions by allowing the remote killing of key targets without any additional foreseeable deaths.¹²

Nonetheless, conventional weapons are notoriously ineffective in deterring enemy attacks in contemporary asymmetrical warfare. For instance, the United States' nuclear arsenal and vast technologically advanced military alone did not deter significant terrorist attacks. Alternative means for effecting broad psychological deterrence are required.¹³ Using neuroscience to effect psychological deterrence is already being considered.¹⁴ The desired effects of commonly proposed moral enhancements include reduction of out-group aggression and unquestioned obedience. Both effects could be used to hinder an army painlessly but significantly in traditional warfare as a form of weaponised moral enhancement. Moreover, weaponised moral enhancement could dramatically reduce the costs and harm of preventive and humanitarian wars. Historically, the costs of such wars have been high. The recent preventive war in Iraq has cost the United States 5.8 trillion dollars and hundreds of thousands of human lives.¹⁵ The deadliest war for the US by far was the American Civil War, which led to the deaths of over 2.4 per cent of its population and had

¹² John Pike, 'AGM-114 R9X Hellfire Blade Bomb', *Global Security*, 17 May 2019, <https://www.globalsecurity.org/military/systems/munitions/agm-114r9x.htm>.

¹³ The needed broad psychological deterrence has been defined as 'preventing action by either direct or indirect influence on psychology ... which consists in considering all those states of the mind/brain information processing system that influence action, be they conscious or not, be they rational or not, be they distributed across an organization or not': Troy S Thomas and William D Casebeer, 'Violent Systems: Defeating Terrorists, Insurgents, and Other Non-State Adversaries', Institute for National Security Studies Occasional Paper 52, March 2004, 54–55. Weaponised moral enhancement would clearly fall into this category.

¹⁴ A white paper from the US Army states: 'It is vital to develop an understanding of ... how existing or new neuroscientific techniques and neurotechnologies could be used and developed to facilitate improved evaluative and interventional capability': William D Casebeer and others, 'Neurobiological, Cognitive and Social Science Insights on Radicalization and Mobilization to Violence' in M Hardenberg (ed), *National Security Challenges: Insights from Social, Neurobiological, and Complexity Sciences* (SMA and US Army ERDC White Papers 2012) 198. An academic article on neuroweapons considers: 'A considerably more imposing possibility is to "change minds and hearts" by altering the will or capacity to fight through the use of neuropharmacologic, neuro-microbiological and/or neurotoxic agents that 1) mitigate aggression and foster cognitions and emotions of affiliation or passivity': James Giordano and Rachel Wurzman, 'Neurotechnologies as Weapons in National Intelligence and Defense – An Overview' (2011) 2 *Synesis: A Journal of Science, Technology, Ethics, and Policy* 55, 59.

¹⁵ Neta C Crawford, 'The U.S. Budgetary Costs of the Post-9/11 Wars', Watson Institute for International and Public Affairs and Brown University, 1 September 2021, https://watson.brown.edu/costsofwar/files/cow/imce/papers/2021/Costs%20of%20War_U.S.%20Budgetary%20Costs%20of%20Post-9%2011%20Wars_9.1.21.pdf; Amy Hagopian and others, 'Mortality in Iraq Associated

a humanitarian motivation;¹⁶ by comparison, the Second World War killed under 0.3 per cent of the US population.¹⁷ Lowering such immense financial and human costs could motivate the development of weaponised moral enhancement, which could target moral dispositions central to a credible future threat or present humanitarian violation without any killing and maiming. It could, for instance, improve moral dispositions involved in ascribing moral status to people from other religions and ethnicities.¹⁸ It could enhance the ability to entertain opposing ideologies via civic debate. As in my introductory cases, it could reduce the violent enforcement of norms and increase empathy for out-groups. Some of these enhancements could be so morally desirable and safe that a country could make their use against enemies conditional on previous voluntary use by their own combatants and citizens.

The potential for using future neuroscientific advancements in moral psychology and its ethical consequences have been largely unexplored.¹⁹ Directly manipulating moral decision making would be likely to have a wide variety of applications and raise a plethora of ethical concerns. Advanced psychologically incapacitating agents would look more pragmatically tempting than previous crude forms of psychochemical warfare, but many would cause clear suffering and physical harm and would be likely to be banned as chemical weapons.²⁰ Morally enhancing one's own combatants can reshape the war field, but many ethical concerns would fall in the category of occupational enhancement. Here, I will restrict myself to interventions that are moral

with the 2003–2011 War and Occupation: Findings from a National Cluster Sample Survey by the University Collaborative Iraq Mortality Study' (2013) 10 *PLOS Medicine*, article e1001533.

¹⁶ See n 17 for death tolls. For other motivations see n 67. For the humanitarian motivations see James M McPherson, *Battle Cry of Freedom: The Civil War Era* (Oxford University Press 2003) vii–viii, 490–510, 546–67 (McPherson (2003)); James M McPherson, 'The War Will Never End Until We End Slavery' in James M McPherson, *What They Fought For, 1861–1865* (Louisiana State University Press 1994) 47, 47–48; Edward B Rugemer, 'Emancipation Day Traditions in the Anglo-Atlantic World' in Gad Heuman and Trevor Burnard (eds), *The Routledge History of Slavery* (Routledge 2010) 314, 324–25; Jason H Silverman, 'Civil War, United States' in Junius P Rodriguez (ed), *The Historical Encyclopedia of World Slavery* (ABC-CLIO 1997) 157; Paul Finkelman, 'United States, Antislavery In' in Peter Hinks, John McKivigan and R Owen Williams (eds), *Encyclopedia of Antislavery and Abolition* (Greenwood Press 2007) 704, 713–15; Seymour Drescher, *Abolition: A History of Slavery and Antislavery* (Cambridge University Press 2009) 322–32; David Brion Davis, *Inhuman Bondage: The Rise and Fall of Slavery in the New World* (Oxford University Press 2006) Ch 15, 297; Robert William Fogel, *Without Consent or Contract: The Rise and Fall of American Slavery* (Norton 1994) 411–17; John Stauffer, 'Abolition and Antislavery' in Mark M Smith and Robert L Paquette (eds), *Oxford Handbook of Slavery in the Americas* (Oxford University Press 2012) 556, 571–75.

¹⁷ J David Hacker and James M McPherson, 'A Census-Based Count of the Civil War Dead: With Introductory Remarks by James M. McPherson' (2011) 57 *Civil War History* 307; James T Patterson, *Grand Expectations: The United States, 1945–1974* Vol 4 (Oxford University Press 1998) 10.

¹⁸ De Dreu (n 8); Sylvia Terbeck and others, 'Propranolol Reduces Implicit Negative Racial Bias' (2012) 222 *Psychopharmacology* 419.

¹⁹ Turhan Canli and others, 'Neuroethics and National Security' (2007) 7 *The American Journal of Bioethics* 3; William Casebeer, 'Ethics and the Biologized Battlefield: Moral Issues in 21st-Century Conflict' in Robert E Armstrong and others (eds), *Bio-inspired Innovation and National Security* (National Defense University Press 2010) 293, 299–302.

²⁰ See end of Section 5.1 for additional discussion on advanced incapacitating agents.

enhancements and applied to enemies. They present an unusual conceptual challenge.

3. Weaponised moral enhancement

I define 'weaponised moral enhancement' as technological interventions expected to improve moral dispositions independently of war aims targeted at an enemy in order to achieve war aims.²¹ There must be independent peacetime reasons for expecting the intervention to improve moral dispositions – that is, for considering it a moral enhancement. Technologies that target moral dispositions to cause the enemy to surrender in a just war are not necessarily a case of weaponised moral enhancement. In a just war against an unjust enemy, psychologically compelling the enemy through any means to stop their fighting could be seen as improving their moral disposition to fight an unjust war, but it will not necessarily constitute weaponised moral enhancement. All else being equal, save for the decision to wage war, weaponised moral enhancement would be expected to lead to better moral dispositions in the enemy. Removing the enemy's disposition to fight is unlikely to be an improvement outside a just war. Decreasing aggression against out-groups is already considered an expected improvement of most people's moral dispositions; therefore, such reduction in war would be likely to be a case of weaponised moral enhancement. A fine-tuned incapacitating agent would not be considered a weaponised moral enhancement. Physical incapacitation is not expected to improve human morality in a civilian setting.

The independency of the requirement of war aims does not imply that only moral enhancements permissible in peacetime are also permissible as weaponised moral enhancement, although adopting such an implication might be a welcome restriction. Nor does it imply that weaponised moral enhancement applied to any population would lead to improved moral dispositions. For instance, it might be that decreasing in-group loyalty would lead to improved moral dispositions in one group but not in another, such that both implications would be false. The requirement merely means that the reasons for considering the anticipated effect of weaponised moral enhancement on moral dispositions to be an improvement cannot be related to a war aim. I will argue later that adding the restriction that a country using weaponised moral enhancement must have permissibly used the exact same intervention on its own population will not prevent war usage from being riskier in war than in peacetime. However, under my definition there is no requirement or expectation for weaponised moral enhancement to be used first on civilians.

Weaponised moral enhancement targets moral dispositions such as empathy and cooperativeness. These dispositions are moral because they

²¹ My definition of weaponised moral enhancement applies the seminal definition of moral enhancement by Tom Douglas to the case of using it as a war weapon. Although Douglas' definition is often used in the literature, moral enhancement has been defined in many other ways. That is not in itself a problem if each definition is made explicit. For the many definitions of moral enhancement see Kasper Raus and others, 'On Defining Moral Enhancement: A Clarificatory Taxonomy' (2014) 7 *Neuroethics* 263. For the seminal definition see Douglas (n 7).

involve human morality in a descriptive sense; they are not necessarily moral in the normative sense. In other words, they refer to the moral dispositions we happen to have, not the moral dispositions we ought to have. For example, in-group favouritism is a moral disposition, but it is not necessarily morally right or desirable. Likewise, weaponised moral enhancement is not necessarily normatively moral.²²

4. Principles

I will refer to the following simplified principles governing the decision to go to war and the conduct during war.²³ A war is considered just when it is just to (initiate such) war (*jus ad bellum*). For this, seven requirements must be met:

- (1) *just cause*: the purpose is the preservation of the good;
- (2) *right authority*: the declarant is legitimate;
- (3) *right intention*: intent is the just cause;
- (4) *proportionality of ends*: the ends outweigh the expected harm;
- (5) *necessity*: the ends are not achievable by other acceptable means;
- (6) *hope of success*: the means are expected to achieve the ends; and
- (7) *peace aim*: the aims include peaceful resolution.

It is considered that there is justice *in warring* (*jus in bello*) when two requirements are satisfied: (i) *proportionality of means*, and (ii) *discrimination*: how and whom to kill, in Michael Walzer's terms.²⁴ In order to be proportional, the

²² Nevertheless, one might object that my definition implies a coercive use of moral enhancement, which would be self-defeating. Firstly, weaponised moral enhancement would be no more coercive than conventional lethal weapons. Secondly, harm to freedom could be outweighed by enhancing moral reasoning and decision making such that there would be an overall increase of freedom of choice. This issue has been discussed extensively in the literature but will not be investigated further here. See David DeGrazia, 'Moral Enhancement, Freedom, and What We (Should) Value in Moral Behaviour' (2014) 40 *Journal of Medical Ethics* 361; Thomas Douglas, 'Enhancing Moral Conformity and Enhancing Moral Worth' (2014) 7 *Neuroethics* 75; Julian Savulescu and Ingmar Persson, 'Moral Enhancement, Freedom, and the God Machine' (2012) 95 *The Monist* 399.

²³ My list is of mere instrumental value in order to discuss a yet non-existent weapon. It is a plain summary of often-mentioned basic principles. Because of space limitations, I will not assess the impact of alternative principles on my arguments. For similar lists, see Robert Kolb and Richard Hyde, *An Introduction to the International Law of Armed Conflicts* (Hart 2008) 43–50; Seth Lazar, 'War' in Edward N Zalta (ed), *The Stanford Encyclopedia of Philosophy* (Stanford University 2020), <https://plato.stanford.edu/archives/spr2020/entries/war>; ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion [1996] ICJ Rep 1 226, [78]; Larry May, 'Introduction' in Larry May (ed), *The Cambridge Handbook of the Just War* (Cambridge University Press 2018); Jeff McMahan, 'The Morality of War and the Law of War' in David Rodin and Henry Shue (eds), *Just and Unjust Warriors: The Moral and Legal Status of Soldiers* (2nd edn, Oxford University Press 2013) 19; US Department of Defense, *Department of Defense Law of War Manual* (Office of General Counsel, Department of Defense 2016) 38–52.

²⁴ Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (4th edn, Basic Books 2006) 41. A detailed definition or proper translation of *jus ad bellum* and *jus in bello* are beyond the scope of this article. Although the current legal meaning of *jus* is often restricted to

means must achieve a good that outweighs its harm without inflicting unnecessary types of harm (also listed as the *necessity* requirement).²⁵ Discrimination dictates that only enemy combatants forfeit their right not to be harmed by the enemy. Combatants make themselves liable to be harmed by the enemy by virtue of being responsible for a threat to the enemy. Traditionally, such a threat is the very status of combatant, which poses imminent harm to the enemy. Therefore, combatants on both sides make themselves equally liable to harm regardless of which side had justice to go to war. Under this traditional view, *combatant equality* becomes a central requirement. Non-combatants do not forfeit their respective rights; therefore, they are not liable to intentional harm. In exceptional circumstances, some consider that their right not to be harmed might be overridden to prevent an exceedingly great harm such that it is permissible to subject them to unintentional foreseeable harm as long as proportionality of means is respected.

Given that *jus ad bellum* must justify war's inevitable large-scale killing of human beings, strictly defensive wars against grave threats are the only widely accepted just wars. Therefore, *jus ad bellum* often results in a general prohibition of the 'use of force against the territorial integrity or political independence of any state' except for self-defence.²⁶ Besides defensive wars, many concede that ongoing human rights violations might justify humanitarian wars, but most deny that forestalling non-imminent attacks can justify preventive wars.

5. International war law

5.1. Specific prohibitions

From the St Petersburg Declaration to the Hague Conventions to the Geneva Conventions' Additional Protocols, proportionality of means has remained a major motivation behind prohibiting weapons that cause unnecessary or superfluous suffering.²⁷ A weapon cannot harm more than what is unavoidable

'right' or 'law', 'justice' is an alternative translation of this Latin word; see Peter Glare (ed), 'Ius' in *Oxford Latin Dictionary* (Oxford University Press 2012) 1082–84; Michael Hillen (ed), 'Ius' in *Thesaurus Linguae Latinae*, Vol VII-2 (Bavarian Academy of Sciences and Humanities 2019) 678–704; Jonathan Law (ed), 'Jus' in *A Dictionary of Law* (Oxford University Press 2022); William Whitaker (ed), 'Jus' in *WORDS* (University of Notre Dame 2016), <http://archives.nd.edu/whitaker/words.htm>.

²⁵ I will treat necessity as included in proportionality of means. Although these are often mentioned as separate requirements, they are both included in the requirement that means must minimise the net amount of harm in proportion to the good achieved. Moreover, a third principle is often mentioned as justifying necessity and proportionality: the overarching principle of humanity. Given that the meaning of such a principle is unclear, and I wish to avoid equating it with necessity and proportionality, I will discuss some prohibitions from the principle of humanity separately in Section 5.2. See also William H Boothby, *Weapons and the Law of Armed Conflict*, Vol 1 (2nd edn, Oxford University Press 2016) 46.

²⁶ Charter of the United Nations (entered into force 24 October 1945) 1 UNTS XVI, arts 2(4), 51.

²⁷ Hague Convention (II) with respect to the Laws and Customs of War on Land and its Annex: Regulations concerning the Laws and Customs of War on Land (entered into force 4 September 1900) 26 *Martens Nouveau Recueil* (ser 2) 949, art 23(e); Hague Convention (IV) (n 5) art 23(e);

to achieve a military aim.²⁸ Expanding and exploding bullets, poisoned weapons, anti-personnel landmines, and chemical and biological weapons have been prohibited for violating this principle.²⁹ Most biological weapons are also inherently indiscriminate, spreading among combatants and non-combatants alike.

The Biological Weapons Convention prohibits the development, stockpile and use of biological agents and toxins as weapons.³⁰ Although it does not define these terms, the World Health Organization formulated an authoritative definition of biological agents as ‘those that depend for their effects on multiplication within the target organism and are intended for use in war to cause disease or death in man’.³¹ The Chemical Weapons Convention prohibits the development, stockpile and use of toxic chemicals as weapons, defined as those whose ‘action on life processes can cause death, temporary incapacitation or permanent harm to humans’.³² It also includes a ban on riot control agents which nevertheless might be legitimately used by law enforcement, defining them as chemicals ‘which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time’.³³ Both conventions use a general purpose criterion that intends to include future technological developments used with the purpose of biological and chemical weapons. In fact, the prohibition against chemical weapons does not include all chemicals with toxic effects; it excludes those used with a purpose that is not dependent on their toxic properties as a method of warfare.³⁴

Weaponised moral enhancement would be a weapon of war used against the enemy and reliant on its chemical effects on the human body. However, weaponised moral enhancement would neither work via significant physical harm nor be expected to cause it. Weaponised moral enhancement would be

Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be deemed to be Excessively Injurious or to have Indiscriminate Effects, Protocol II on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices (entered into force 2 December 1983) 1342 UNTS 137, preamble; Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight (entered into force 11 December 1868); Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (entered into force 7 December 1978) 1125 UNTS 3 (AP I), art 35(2); US Department of Defence (n 23) 316–34.

²⁸ *Nuclear Weapons* (n 23) [78].

²⁹ Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law Vol 1: Rules*, (International Committee of the Red Cross and Cambridge University Press 2005, revised 2009) (ICRC Study) 237.

³⁰ Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (entered into force 25 March 1975) 1015 UNTS 165; United Nations Office for Disarmament Affairs, UNGA, ‘Final Declaration of the Fourth Review Conference of the Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction’, *United Nations Disarmament Yearbook 1996* (UN 1997).

³¹ World Health Organization Group of Consultants, ‘Health Aspects of Chemical and Biological Weapons’, Report EB45.R17, 28 November 1969, 12.

³² (n 4) art II.2.

³³ *ibid* art II.7.

³⁴ *ibid* art II.9.

intended exclusively for involuntary use, but both technologies could be similar. A military application would be less regulated than standard moral enhancement but, if altogether feasible, weaponised moral enhancement would still be targeted at manipulating moral dispositions, and physical harm would be a side effect to be minimised. At first sight, it could be considered a weapon only in the indirect sense in which surveillance satellites are weapons: as an instrumentality, which are not the target of the mentioned weapon prohibitions. However, this analogy is false because weaponised moral enhancement alone would directly interfere with the enemy.

Taken as a direct weapon, weaponised moral enhancement would not fall within the prohibited domain of biological and chemical weapons. Although it would be a form of biotechnology, weaponised moral enhancement would not rely on multiplication in a biological medium; thus, it would be excluded from the definition of biological agent. It would be excluded from the definition of toxic agent as well, as it would not be expected to cause death, temporary incapacitation or permanent harm. Additionally, it would not fall within the more specific definition of riot control agent, as it would not cause sensory irritation or disabling physical effects. Moreover, weaponised moral enhancement could have harmful side effects, but it would not depend on these types of harm to achieve its purpose. Instead, it would rely on the enhancement of moral dispositions. Therefore, even if considered toxic, its purpose would exclude it from the current prohibitions of toxic agents. Finally, even if it could reasonably be argued that current prohibitions do apply to weaponised moral enhancement, these prohibitions would not be well established. As I argue in the next section, unestablished prohibitions will be selectively ignored by major world powers.

The unclear legal status of advanced incapacitating agents, such as fast-acting sedatives and anxiolytics, has attracted considerable concern. As clarified in my definition, incapacitating agents would not be considered weaponised moral enhancement because incapacitating a person is not an improvement of their moral disposition. Nor would a prohibition of incapacitating agents prohibit weaponised moral enhancement. Earlier psychochemical weapons intended to cause incapacitation were found to be ineffective by the CIA; substances were classed as toxins and banned as chemical warfare.³⁵ Recent advances in neurochemistry have dramatically changed the outlook of these weapons.³⁶ It is unclear whether countries will consider advanced incapacitating weapons to be prohibited; a strengthening of the existing treaties might be necessary to establish such a prohibition.³⁷ The International Committee of the Red Cross (ICRC) maintains that all incapacitating chemical

³⁵ Malcolm Dando and Martin Furmanski, 'Mid-Spectrum Incapacitant Programs' in Mark Wheelis (ed), *Deadly Cultures: Biological Weapons since 1945* (Harvard University Press 2006) 236, 243–44; Robert J Mathews, 'Central Nervous System-Acting Chemicals and the Chemical Weapons Convention: A Former Scientific Adviser's Perspective' (2018) 90 *Pure Applied Chemistry* 1559.

³⁶ Alan Pearson, 'Incapacitating Biochemical Weapons: Science, Technology, and Policy for the 21st Century' (2006) 13 *The Nonproliferation Review* 151.

³⁷ Mark Wheelis and Malcom Dando, 'Neurobiology: A Case Study of the Imminent Militarization of Biology' (2005) 87 *International Review of the Red Cross* 553, 567.

agents are toxins, thus banned in wars under current prohibitions.³⁸ In 2011, the European Court of Human Rights did not consider illegal the use of a crude incapacitating chemical agent by Russia.³⁹ Moreover, an additional concern is that these chemicals could be developed under the law enforcement exception and used later as a form of non-lethal chemical warfare;⁴⁰ this is not the concern I am expressing regarding weaponised moral enhancement. Regardless of the legal status of fine-tuned psychochemical incapacitating agents, weaponised moral enhancement would be physically innocuous; thus it could not fall within the category of toxin. A prohibition of incapacitating agents as toxins would not affect the legal status of weaponised moral enhancement.

5.2. General prohibitions

Although not covered by specific prohibitions, perhaps weaponised moral enhancement would clearly violate basic principles of international war law such that specific prohibitions would be quickly enacted. However, proportionality of means could not be easily evoked to prohibit weaponised moral enhancement because it would not produce significant physical harm. It might produce physical side effects, but they would hardly be considered disproportionate or unnecessary compared with harm caused by traditional weapons. In fact, if effective weaponised moral enhancement is ever developed, a case could be made that proportionality of means dictates that weaponised moral enhancement should be preferred over traditional weapons of war.

The now suspended SirUS project was an attempt to codify objective criteria for identifying weapons the nature of which causes superfluous injury or unnecessary suffering – that is, which would violate the proportionality principle.⁴¹ It lists mostly physical injuries, which would not apply to weaponised moral enhancement, but also includes abnormal psychological states. Nonetheless, improved moral dispositions are not abnormal in the medical sense; it is not pathological or dysfunctional to become a morally better person. The SirUS project has been criticised for being biased towards conventional weapons (in which it sets its baseline) and against non-lethal weapons,⁴² but it would still not suggest a ban on weaponised moral enhancement. I will return to *in bello* proportionality from a moral standpoint in the next section.

³⁸ ICRC, 'Expert Meeting: "Incapacitating Chemical Agents" – Law Enforcement, Human Rights Law and Policy Perspectives', 24–26 April 2012, 153.

³⁹ ECtHR, *Finogenov and Others v Russia*, App Nos 18299/03 and 27311/03, 20 December 2011, paras 227–36.

⁴⁰ Boothby (n 25) 126–31; ICRC Expert Meeting (n 38) 157; Pearson (n 36); Neil Davison, 'New Weapons: Legal and Policy Issues Associated with Weapons Described as "Non-Lethal"' in Andrew D Saxon (ed), *International Humanitarian Law and the Changing Technology of War* (Martinus Nijhoff 2013) 279, 306–07; Wheelis and Dando (n 37).

⁴¹ Robin M Coupland and Peter Herby, 'Review of the Legality of Weapons: A New Approach – The SirUS Project' (1999) 81 *International Review of the Red Cross* 583, 587–88.

⁴² Donna M Verchio, 'Just Say No! The SirUS Project: Well-Intentioned, but Unnecessary and Superfluous' (2001) 51 *Air Force Law Review* 183.

Another general principle that is often evoked when proposing new weapons restrictions is the Hague Conventions' Martens Clause which states:⁴³

Until a more complete code of the laws of war has been issued, the High Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of the public conscience.

This is taken to imply that what is not prohibited by adopted laws can still be prohibited by customary and humanitarian international law. In its expanded meaning it has motivated international war laws based on humanitarian principles besides buttressing the aforementioned prohibition against disproportionate types of harm.⁴⁴

Instead of appealing to disproportionate physical harm, prohibitions could focus on the fact that weaponised moral enhancement can be considered a form of psychological coercion, which could violate humanitarian principles.⁴⁵ Weaponised moral enhancement would reliably cause enemies to have moral dispositions involuntarily that would eventually dissuade them from attacking. One might expect that this would give clear motivation for a future prohibition. Nevertheless, we would find no customary precedent for prohibiting it on such ground alone. Under the doctrine of deterrence to justify nuclear weapons and vast standing armies with indiscriminate destructive powers, international law already accepts the coercing of enemies into psychological states that preventively dissuade them from attacking. In *Nuclear Weapons*, after taking into account the principles of proportionality, discrimination and humanity, the ICJ decided that '[t]here is in neither customary nor

⁴³ Hague IV (n 5) preamble.

⁴⁴ The original intention of the Martens Clause, its true legal meaning, its impact on international war law and what it justifies have been extensively discussed in the literature. Most accept that the clause denies that if something is not prohibited by specific laws, it is allowed. The clause states that customary laws, laws of humanity and the dictates of public conscience can still prohibit conduct not covered by existing laws. There is no consensus on whether these additional principles should guide new laws, specify a new body of laws, or are merely an interpretative guide for existing laws. For a history of the use and interpretations of the Martens Clause, see Jochen von Bernstorff, 'Martens Clause', *Max Planck Encyclopedia of Public International Law* (Oxford University Press 2009); Antonio Cassese, 'The Martens Clause: Half a Loaf or Simply Pie in the Sky?' (2000) 11 *European Journal of International Law* 187; Theodor Meron, 'The Martens Clause, Principles of Humanity, and Dictates of Public Conscience' (2000) 94 *American Journal of International Law* 78; Mitchell Stapleton-Coory, 'The Enduring Legacy of the Martens Clause: Resolving the Conflict of Morality in International Humanitarian Law' (2019) 40 *Adelaide Law Review* 471.

⁴⁵ I focus on the salient issue of psychological coercion, but it is plausible that weaponised moral enhancement violates humanitarian principles in other ways that are still unexplored. For example, it is possible that the harm to personal identity explored in Section 7.1 could constitute a humanitarian violation. However, because of the open-ended nature of the Martens Clause, scope limitations preclude a thorough investigation of these matters, which merit a separate article.

conventional international law any comprehensive and universal prohibition of the threat or use of nuclear weapons'.⁴⁶

There are important dissimilarities between current weapons of deterrence and weaponised moral enhancement, but most favour the latter. Unlike current weapons of deterrence, weaponised moral enhancement would involve direct physical interactions with its targets. However, weaponised moral enhancement would coerce the enemy by producing improved moral dispositions instead of paralysing fear under the credible threat of an unthinkable catastrophe, such as nuclear attacks and wars of total destruction. It would be targeted at enemy combatants rather than their population at large. Finally, when compared with nuclear weapons, it would not indiscriminately cause existential dread to enemies and allies alike.

Suppose instead we accept this analogy with weapons of deterrence; would it really be a reason against a future prohibition? The proliferation of nuclear weapons is strictly prohibited, and many would rather that major world powers did not have vast standing armies. Nonetheless, it is their widespread destructive power and not their use as deterrents that motivates their rejection. Their deterrent effects are what justifies their existence; weaponised moral enhancement would have no direct destructive power. Furthermore, current anti-proliferation conventions are not a model to be followed, as they significantly lagged behind the development of nuclear weapons. Finally, nuclear proliferation and chemical weapons are prohibited, but clear violators still exert a major influence over recent developments in war.

5.3. Compliance

In addition to legal questions regarding specific and general prohibitions of weaponised moral enhancement, there is the issue of compliance. Even if prohibitions apply in theory, we should still be concerned about weaponised moral enhancement if we expect that these prohibitions will be ineffective. Outside the nuclear, chemical and biological triad, compliance is less uniform. Major world powers such as the United States, Russia and China routinely ignore international war law when convenient. Russia is a party to the UN Charter, the central *ad bellum* doctrine of which is that self-defence is the only just cause for war,⁴⁷ but it is currently waging a war of aggression against Ukraine.⁴⁸ The US largely dictates most of the world's recent wars. Although it is party to the biological and chemical weapons conventions and attempts to

⁴⁶ *Nuclear Weapons* (n 23) [95] and [105]. Judge Guillaume's separate opinion states that the Court implicitly recognised the legality of deterrence: *ibid* [9]. For the often-ignored non-nuclear deterrence doctrine behind vast standing armies see John J Mearshaimer, *Conventional Deterrence* (Cornell University Press 1985).

⁴⁷ (n 26) arts 2(4), 51.

⁴⁸ UNGA Res 11/1, Aggression against Ukraine (2 March 2022), UN Doc A/RES/ES-11/1; UNGA Res 11/2, Human Consequences of the Aggression against Ukraine (24 March 2022), UN Doc A/RES/ES-11/2; UNGA Res ES-11/3, Suspension of the Rights of Membership of the Russian Federation in the Human Rights Council (7 April 2022), UN Doc A/RES/ES-11/3.

abide by international war law, most US military actions are unilateral.⁴⁹ It has engaged in wars in disregard of the UN and denies jurisdiction to the International Criminal Court and its Rome Statute.⁵⁰ The US Department of Defence lists at least 14 major current arms control treaties to which the US is not a party, besides several reservations on treaties to which it is a party.⁵¹ Similarly, Russia and China are not signatories of the Rome Statute. Although European countries are among the Rome Statute's main proponents, a significant portion of the military based in Europe is under US control. For instance, the US Ramstein Air Base in Germany was twice allegedly involved in international war law violations, but Germany had no jurisdiction inside the base.⁵² In the last 50 years, most military air operations from German territory were carried out by the United States. Regardless of the political party in power and internal pressures, the US tends to act alone in preventive wars to forgo opportunity costs associated with prolonged multilateral decision making; in humanitarian wars it tends to welcome outside involvement.⁵³ Preventive wars are where weaponised moral enhancement would find its most significant use. If its permissibility remains open to debate, the US is likely to weigh pragmatic considerations against any potential prohibition. Weak prohibitions will be ignored if the US expects that weaponised moral enhancement will reduce the financial costs and casualties of a preventive war. Its impact on the nature of wars could remain significant despite any prohibitions. Even if frowned upon, in the absence of a widely recognised prohibition, it is likely to be used selectively by several other countries as well.

Finally, biological weapons are currently prohibited by international law to the degree that neither countries that often breach international war law nor terrorists have current plans to use them.⁵⁴ That does not render biological weapons safe; they remain a risk that ought to be studied. If weaponised

⁴⁹ Three different datasets with 212, 158 and 64 instances of use of force by the US from 1937 to 2002 contain, respectively, 167 (79%), 92 (58%) and 28 (44%) unilateral uses of force – averaging at two thirds. In all three datasets the frequency of unilateral use never went below one third for any time period or president: Bradley F Podliska, *Acting Alone: A Scientific Study of American Hegemony and Unilateral Use-of-Force Decision Making* (Lexington 2010) 4.

⁵⁰ Rome Statute of the International Criminal Court (entered into force 1 July 2002) 2187 UNTS 90.

⁵¹ US Department of Defense (n 23) 1125–27.

⁵² Sven Pöhle, 'Germany a Hub for US Drone War?', *Deutsche Welle*, 5 April 2014, <https://www.dw.com/en/berlin-powerless-to-challenge-us-drone-operations-at-ramstein-air-base/a-17545327>. The community around the base houses over 50,000 US personnel and family. There are over 100,000 US military personnel stationed in Europe in total, which is over half of the total German military personnel: 'Personalzahlen der Bundeswehr', *Bundeswehr*, 31 March 2022, <https://www.bundeswehr.de/de/ueber-die-bundeswehr/zahlen-daten-fakten/personalzahlen-bundeswehr>; US Department of Defense, Military Installations, 'USAG Rheinland-Pfalz Kaiserslautern Military Community', 2022, <https://installations.militaryonesource.mil/military-installation/usag-rheinland-pfalz>; Kathleen J McInnis, Paul Belkin and Brendan W McGarry, 'United States European Command: Overview and Key Issues', Congressional Research Service, 30 March 2022.

⁵³ Podliska (n 49).

⁵⁴ Seth Carus, *A Short History of Biological Warfare: From Pre-History to the 21st Century* (National Defense University Press 2017) 47.

moral enhancement becomes a possibility, it will remain a risk. It can be prohibited, but the force of laws in preventing weaponised moral enhancement can only be as strong as the laws themselves. Some laws of war are currently applied imperfectly; others might be breached in the future.

It is difficult to predict if a treaty that prohibits weaponised moral enhancement would be ratified; it remains a possibility despite the arguments I have presented above. However, such prohibition does not currently exist and does not clearly follow from general principles and customs of arms control. Therefore, even if a prohibition were ratified, it might be perceived as resting on unfirm ground and major powers would breach it when convenient. I will attempt to offer solid reasons for restricting weaponised moral enhancement in Section 7.

6. Normative just war theories

6.1. Traditional and revisionist just war theories

The morality of war, rather than its laws and customs, is the subject of normative just war theories. These theories reveal moral principles that guide or could guide international war law; therefore, they could offer reasons for prohibiting weaponised moral enhancement. For simplicity, normative just war theories can be separated into either traditional or revisionist theories, according to their approach to existing international war law, killing in war, and the relationship between *jus ad bellum* and *jus in bello*.⁵⁵ Traditional theories attempt to make sense of the motivations behind long-established institutional norms, whereas revisionist theories centre around the morality of killing in war. Traditional just war theories claim that justice to wage war and justice in waging war are independent. One can always wage a just war unjustly and wage an unjust war justly. Therefore, they often include the third *in bello* requirement of *combatant equality*, under which combatants on both sides are equally liable to suffer intentional harm regardless of which side has justice to wage war. Revisionist theories deny combatant equality. Jeff McMahan, for instance, argues that a group of otherwise innocent civilians who take up arms against non-conscripted soldiers about to kill them during a genocide are not as equally liable to suffer harm as the soldiers themselves, nor are the combatants belonging to an intervening third party whose only aim is defending those civilians.⁵⁶ He also argues that none of the *ad bellum* requirements can be satisfied without also satisfying the first just cause requirement and, controversially, nor can the *in bello* requirements.⁵⁷ Some revisionist theories deny that defending against an attack and stopping ongoing humanitarian violations are the only possible just causes for war. Although they claim wars can rarely be just otherwise, preventing a future attack and humanitarian violation can also be just causes for war.⁵⁸

⁵⁵ Seth Lazar, 'Evaluating the Revisionist Critique of Just War Theory' (2017) 146 *Daedalus* 113; Lazar (n 23); David Rodin and Henry Shue, 'Introduction' in Rodin and Shue (n 23) 1.

⁵⁶ Jeff McMahan, *Killing in War* (Oxford University Press 2009) 15.

⁵⁷ Jeff McMahan, 'Just Cause for War' (2005) 19 *Ethics and International Affairs* 1, 5.

⁵⁸ Allen Buchanan and Robert O Keohane, 'The Preventive Use of Force: A Cosmopolitan Institutional Proposal' (2004) 18 *Ethics and International Affairs* 1; Jeff McMahan, 'Preventive War and the Killing of the Innocent' in Richard Sorabji and David Rodin (eds), *The Ethics of War:*

In so far as a traditional normative just war theory relies on current laws, it could be evaded by weaponised moral enhancement in the same way as international war law. A revisionist just war theory could rely on an ethical analysis of killing in war to address weaponised moral enhancement. However, I will argue that weaponised moral enhancement would loosen just war requirements in both theories, especially *ad bellum* requirements in revisionist theories.

6.2. Weaponised moral enhancement in bello

Traditionalists and revisionists agree that what makes a combatant liable to intentional killing by the enemy during a war is the fact that he is responsible for a severe enough threat to the enemy to forfeit his right not to be lethally harmed by the enemy to prevent such threat.⁵⁹ Some traditionalists claim that combatants threaten the enemy themselves just by being combatants.⁶⁰ Some revisionists claim that combatants must be morally responsible for a wrongful threat to be liable.⁶¹ Regardless, whatever threat justifies the intentional killing of those responsible for it must also justify less harm to those responsible for it, as long as such less harm can also prevent the threat. Killing is a greater harm than the involuntary improvement of moral dispositions. Therefore, when combatants are liable to lethal aggression (that is, their right not to be lethally attacked is forfeited) to achieve an aim of war, they are also liable to weaponised moral enhancement if it can achieve that same aim. If there is reason to justify the forfeiture of the right not to be lethally harmed by enemy combatants, then there also must be reason to justify the forfeiture of the right not to have one's moral dispositions interfered with by enemy combatants. *Ceteris paribus*, if one is liable to harm to achieve a war aim, one is liable to less harm that achieves the same aim. Moreover, proportionality of means dictates that there are conditions in which one is liable to the latter but not the former. Therefore, liability to weaponised moral enhancement is included in liability to lethal aggression, but they do not coincide. In civic life, we consider some liable to forced rehabilitation but not to lethal aggression. Unfortunately, current forms of rehabilitation are highly ineffective means for moral improvement, but there are proposals for using moral enhancement in criminal rehabilitation.⁶² In some countries, convicted paedophiles are already

Shared Problems in Different Traditions (Ashgate 2006); Jeff McMahan, 'Précis: The Morality and Law of War' (2007) 40 *Israel Law Review* 670, 680–81.

⁵⁹ This is a distinctively revisionist way of phrasing the question, centred around individual moral liability. Some traditionalists have combatant equality as a basic principle requiring little explanation; some justify it with the pragmatical concerns that absent combatant equality both sides would consider themselves just, and fight without any restraint: eg Yuval Shany, 'A Pragmatic Objection to Moral Distinctions: A Comment on the Morality and Law of War' (2007) 40 *Israel Law Review* 701, 707–09. Either way, as I will argue, if combatants are equally liable to killing, they are equally liable to lesser harm.

⁶⁰ eg Walzer (n 24) 34–41.

⁶¹ eg McMahan (n 23) 20–22.

⁶² Thomas Douglas, 'Nonconsensual Neurocorrectives and Bodily Integrity: A Reply to Shaw and Barn' (2019) 12 *Neuroethics* 107.

administered with anti-libidinal drugs,⁶³ and most of those who oppose this would not consider lethal aggression a superior solution. In simple terms, when killing is permissible, so is forced moral enhancement, but the reverse is false.⁶⁴

Weaponised moral enhancement would expand the availability of proportional means during an ongoing war in revisionist and traditional theories. Both theories are likely to consider that the Iraq War lacked a just cause, but that once the country's institutions and infrastructure were destroyed it would be *in bello* permissible to attack emerging radical extremist groups if there were effective proportional means that would minimise unintended harm. However, suppose that a conventional weapons attack were to result in a great loss of innocent lives such that this aim would be impermissible; the available means would create more harm than good and violate proportionality of means. Weaponised moral enhancement could be a safer way to prevent radical groups from gaining power; thus its availability would render a previously impermissible *in bello* aim permissible. In my first introductory case, using conventional weapons to free a village from extremists would kill most innocent civilians and be impermissible based on proportionality of means. However, weaponised moral enhancement could dissuade extremists from fighting, prevent the deaths of innocent civilians and, therefore, render an attack permissible.

6.3. Weaponised moral enhancement *ad bellum*

If we cannot admit preventive causes for war in traditional theories, then the impact of weaponised moral enhancement on *ad bellum* requirements would be limited. That does not necessarily mean that these weapons would be prohibited. As with international war law, a preventive intervention using solely weaponised moral enhancement could evade traditional theories altogether (even if an unjustified deployment could be a just cause for war). However, if they are not regulated as weapons of war, their availability could increase the necessity requirement to wage war. For instance, weaponised moral enhancement could be used to respond to an ethnically motivated attack such that future attacks would be forestalled. A defensive war the aim of which is to prevent future attacks of the same kind would become unnecessary because weaponised moral enhancement, which falls short of a war weapon, is an available response.⁶⁵

Certain unintentional foreseeable types of harm, such as the emergence of radical factions mentioned earlier, could be mitigated, thus decreasing the expected harm of going to war and increasing compliance with the

⁶³ eg CA Penal Code § 645 (2019); FL Statutes § 794.0235 (2003); Iowa Code § 903B.10 (2003).

⁶⁴ The conditional nature of the argument means that it will remain valid in a wide range of *in bello* requirements; including less or more strict versions of proportionality of means, as I have presented in Section 4. As long as goods must outweigh types of harm, liability to lethal aggression will imply liability to weaponised moral enhancement.

⁶⁵ Although prevention cannot be a just cause for war for traditionalists, being attacked can give just cause for a war the aim of which is to prevent future attacks.

proportionality of ends requirement. Weaponised moral enhancement could also factor in the peace aim requirement, in that its availability would be more likely to lead to a peaceful resolution. Consider a war to end minor humanitarian violations that will very likely radicalise the local military such that great humanitarian violations will follow. The expected harm would be greater than the good and there would be no prospect of a peaceful resolution. However, if such radicalisation could be halted with weaponised moral enhancement, then the ends could be achieved without countervailing harm and the war could aim for a peaceful resolution.

In a revisionist just war theory, the *ad bellum* requirements of humanitarian wars would be similarly affected. Moreover, some preventive currently unjust causes for war could become just. Revisionists consider that although preventive wars can be just, this is rarely the case.⁶⁶ For instance, a country can have just cause to go to war with those who are conspiring a surprise indiscriminate attack at an unknown location, provided it can present credible evidence of conspiracy and effectively prevent the attack; but these are rare circumstances. The introduction of weaponised moral enhancement would make such circumstances more frequent than otherwise. It could offer a safe and efficient way to hinder a conspiracy to commit an attack and heavily factor in *ad bellum* considerations of hope of success and proportionality of ends in preventive wars.

We rarely find it justifiable in civic life to use lethal harm to prevent a conspiracy to commit a serious crime, although we often find it justifiable to prevent it with imprisonment. In a preventive war, lethal harm is the principal available means. Uncertainty regarding the conspirators' identities, foreseeable non-combatant deaths, and the possibility of an attack which brews additional radicalisation render most preventive wars disproportionate and hopeless. An exceedingly credible conspiracy to suddenly commit immense harm could justify a preventive war, but this is a rare circumstance. Suppose that a small group of extremists conspire to release a deadly contagious virus into the broad population. It is both unlikely and uncertain that they possess the means to acquire such a virus and it is unclear which of these extremists are part of the conspiracy. Risking killing innocent extremists who are not involved with the conspiracy would be disproportionate to the end of preventing an attack that is possibly unfeasible. Not only would there be no justification for the foreseeable unintentional killing of innocent extremists, but also there might be no justification for intentionally killing incompetent conspirators in the first place. However, those who conspire in an indiscriminate attack, but are possibly technically incapable of executing it, might be liable to involuntary improvement of their moral dispositions that motivate their conspiracy. Furthermore, those extremists who share similar dispositions could be permissible unintentional targets of this same improvement – perhaps being owed some form of compensation. A conventional preventive war would be disproportionate, but a preventive war using weaponised moral enhancement could respect proportionality of ends.

⁶⁶ Buchanan and Keohane (n 58); McMahan (2006) (n 58).

Harshly exclusivist moralities that dehumanise out-groups are among the leading causes of grave human rights violations.⁶⁷ Preventive humanitarian wars to preclude future human rights violations are often hopeless. Eliminating those who are currently conspiring or committing a violation will not significantly prevent future violations. The Taliban quickly took control of Afghanistan after the US military withdrawal. Despite the extremely high lethality and destruction of the American Civil War, just one century later the United States would regress into a system of racially exclusivist institutions unseen even in countries where slavery had been the norm everywhere right after the war.⁶⁸ With current technology, preventive humanitarian wars can hardly, if ever, meet the hope of success *ad bellum* requirement. Ethnocentrism, in-group favouritism and out-group aggression are central dispositions of exclusivist moralities; all three can already be pharmacologically manipulated. Weaponised moral enhancement could more effectively prevent human rights violations than current weapons, consequently rendering currently unjust preventive humanitarian wars just by substantially increasing their hope of success.

7. Weaponised moral enhancement's hidden types of harm

7.1. Weaponised moral enhancement and personal identity

International war law would not clearly restrict weaponised moral enhancement. Moreover, it would result in loose war restrictions in two opposing varieties of normative position, more so in revisionist positions that allow for preventive wars. However, I contend that weaponised moral enhancement could cause harm of a magnitude comparable with lethal weapons.

The continuity of psychological relations explains our concern for the survival of our future selves. These psychological relations include having memories of the same past experiences; sufficiently similar personality traits,

⁶⁷ Allen Buchanan, *Our Moral Fate: Evolution and the Escape from Tribalism* (The MIT Press 2020) Ch 1.

⁶⁸ The war killed 2.4% of the US population and used particularly gruesome tactics such as the Atlanta and South Carolina Campaigns' total destruction and the Battle of the Crater's futile massacres of blacks (Albert Castel, *Decision in the West: The Atlanta Campaign of 1864* (University Press of Kansas 1992); Bryce A Suderow, 'The Battle of the Crater: The Civil War's Worst Massacre' (1997) 43 *Civil War History* 219; McPherson (n 16) 807–30; Hacker and McPherson (n 17). Regardless of the justice (and injustice) of and in the American Civil War by each side, subsequent US history indicates that wars can fail to address significantly the underlying exclusivist moralities that enable humanitarian violations. In fact, in so far as perceived environmental scarcity fosters exclusivist moralities, post-war conditions can exacerbate the problem. Such considerations are weighty, but not overwhelming, in evaluating preventive causes for war, but less so elsewhere. The American Civil War also had defensive and humanitarian causes (eg defending against Confederate aggression and stopping ongoing slavery), besides civil matters out of scope – see n 16 for references on humanitarian causes. Even in so far as it had preventive causes, preventing one of most atrocious violations of human rights in recorded history could have justified a decisively aggressive response. Interestingly, while provisionally framing it as a defensive war by the Union, Walzer uses the Atlanta Campaign as the primary example of a just war fought without just restraint: Walzer (n 24) 32–33. For the US racially exclusivist institutions of the Jim Crow Era see Patterson (n 17) 375–406.

desires, beliefs and intentions; the continuous flow of consciousness; and the pursuit of goals and projects that are later realised or frustrated.⁶⁹ What distinguishes survival from death is the preservation of a certain degree of psychological relatedness through time between sequential time-slices. In David Lewis' terminology, psychological relatedness measures the overall strength of all relevant psychological relations between two person-stages.⁷⁰ Psychological continuity refers to the minimal psychological relatedness between all sequential person-stages. Usually, psychological relatedness is lower between distant times; thus, relatedness with future selves decreases the further they are in time, but continuity tends to stay the same because minimal relatedness is preserved from one instant to the next. What matters is continuity. Consider a case of extreme longevity. The same Methuselah lives to 969 years even though his 900-year-old self barely resembles the juvenile 100-year-old Methuselah. Although he loses connectedness, he does not significantly lose continuity because there is a minimal relatedness between each sequential stage of his life.⁷¹

Empirical studies indicate that moral dispositions are a central aspect of our personal identity.⁷² Elsewhere I have argued that because our moral dispositions are among the psychological relations the continuous holding of which grounds personal identity, moral enhancement targeting these dispositions could undermine personal identity.⁷³ Without jargon, our moral psychology is likely to be central to our personal identity; thus, moral enhancement could damage personal identity. Abrupt changes are especially concerning because it is relatedness between sequential times that matters. These changes are not necessarily detrimental to identity as it is possible to increase the level of relatedness – for instance, by voluntarily changing dispositions developed involuntarily. However, enhancement alone does not mean that continuity will be preserved. In the case of weaponised moral enhancement, one's moral dispositions would be improved to achieve the enemy's war aims. In such a scenario the risk of undermining personal identity is high.

Capturing what matters in survival is the main task of the concept of personal identity. Therefore, radical changes to one's moral dispositions can result in harm of a magnitude comparable with killing and maiming. Others have argued that because current empirical evidence suggests that our moral psychology is *the* core of our identity, radical moral enhancement can kill.⁷⁴ Nonetheless, given that memories, the continuous flow of consciousness and bodily continuity would remain, it might not be entirely accurate to compare

⁶⁹ David Lewis, 'Survival and Identity', *Philosophical Papers*, Vol 1 (Oxford University Press 1983) 55; Derek Parfit, *Reasons and Persons* (Oxford University Press 1984) 196; Jeff McMahan, *The Ethics of Killing* (Oxford University Press 2002) 39.

⁷⁰ Lewis (n 69).

⁷¹ *ibid* 65–67.

⁷² Nina Strohminger and Shaun Nichols, 'The Essential Moral Self' (2014) 131 *Cognition* 159.

⁷³ Fabiano (n 11); Joao Fabiano, 'Persons vs. Supra-Persons and the Undermining of Individual Interests' (2021) *The Journal of Value Inquiry*.

⁷⁴ Parker Crutchfield, 'Moral Enhancement Can Kill' (2018) 43 *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine* 568.

these possible results of radical moral enhancement with what we mean by killing in war. Importantly, radical moral enhancement presents increased technical challenges and is unnecessary to achieve war aims. Weaponised moral enhancement is unlikely to be radical. Only certain moral dispositions would be targeted, and to a limited extent.

Until recently, moral enhancement's undermining of personal identity has not been addressed. Preventing this risk is not trivial. I have argued that it involves careful attention to the preservation of core values and gradual implementation. An overt weaponised moral enhancement would have to be quickly implemented in order to be strategically valuable. A gradual weaponised moral enhancement would be hard to implement and could only be done covertly, which is likely to be considered impermissible even if these weapons are allowed in war. Furthermore, unlike non-weaponised moral enhancement, sharp moral disagreements would almost certainly exist between those employing and those targeted by weaponised moral enhancement. Improving an enemy's moral dispositions might indeed be a morally desirable intervention, but if it is motivated by fundamental disagreements, then it will very likely cause substantial psychological changes. Weaponised moral enhancement will be more likely to undermine personal identity and, therefore, will be more like killing than its civilian counterpart. It would not help that those deploying weaponised moral enhancement voluntarily took a similar moral enhancement. Weaponised moral enhancement would create a sharper discontinuity of psychological relations the continuous holding of which grounds personal identity. Perhaps it would still be inaccurate to compare it with killing in war, but it could create harm comparable with maiming in that it severely injures psychological relations central to personal identity. Suppose employing weaponised moral enhancement were, all things considered, vastly better than killing in war, not defending against an attack, and allowing a preventable credible attack guided by alterable morally undesirable dispositions. It would create vastly less harm than alternative options. Regardless, to the enemy it could still be worse than killing him. By depriving him of features central to his personal identity, it could harm him to the extent that if given a choice he would rather die than have his moral dispositions altered by his enemies. It would drastically change core aspects of his identity, replacing it with features amenable to his enemy. Life with moral dispositions placed by his enemy and which he presently considers abhorrent might not be considered one worth living.⁷⁵ Even if it could be an enjoyable life, it would be enjoyed by someone with despicable moral dispositions, someone who one does not currently wish to enjoy life. That one's enemy considers these moral dispositions desirable might even be part of the reason for being at war.

⁷⁵ In a different scenario, many patients with degenerative cognitive conditions, such as Alzheimer's, sign a 'Do Not Resuscitate' order because they would rather die than continue to live with a severely compromised mental life, despite that life does not necessarily involve additional suffering. If moral psychology is indeed the core of personal identity, a severely compromised moral life would be even less worth living.

Nevertheless, at worst, weaponised moral enhancement could create a level of harm comparable with maiming. Perhaps that can motivate a prohibition against it, but the normative arguments presented in Section 6 would not be affected. It remains the case that weaponised moral enhancement harms less than lethal weapons. Therefore, when combatants are liable to lethal aggression, they are also liable to weaponised moral enhancement if it can achieve the same war aim.

7.2. Weaponised moral enhancement and social effects

A second risk from moral enhancement would be worsened in weaponised forms, but unlikely to produce a degree of harm comparable with killing in war. Moral dispositions are intrinsically social and produce group-level social effects. In complex systems, altering individual-level properties can produce paradoxical effects at the group level. For instance, increasing cooperation between individuals can increase conflict between groups.⁷⁶ Increasing aversion to harming in enforcing social norms can undermine costly punishment of norm violators, a disposition that might be indispensable for human cooperation.⁷⁷ Increasing agreeableness can lead to increased compliancy with injustices, a key factor in the emergence of totalitarian regimes.⁷⁸ These complex social effects would be hard to predict in a sharply different society. Most of our understanding of moral psychology comes from the study of western societies.

Accountability for long-term destabilising social effects would also be hard to enforce. Agreeable enemies would be desirable during a war but could have harmful long-term social effects. A seemingly innocuous increase of harm aversion in norm enforcement could lead to deleterious effects once a country is attempting to rebuild itself after a war. The just termination of a war and long-term accountability is a growing topic of research. In preventive and humanitarian wars, similar risks are already present. Foreign intervention in the name of promoting democratic values was one key factor in triggering a regression towards oppressive moral norms in the Middle East and the rise of global terrorism. It is unclear if weaponised moral enhancement would have greater risks. It might be as prone to unintended consequences as conventional interventions, but its mere availability would increase the propensity for preventive wars, thus increasing instances of unintended consequences. Furthermore, using weaponised moral enhancement to mitigate the harm of an ongoing defensive war would create new risks given that these wars would not otherwise aim to produce social change.

8. Conclusion

Moral enhancement could be first developed for war rather than for its proposed civilian use. Weaponised moral enhancement could be used in war by

⁷⁶ Gary Bornstein, 'Intergroup Conflict: Individual, Group, and Collective Interests' (2003) 7 *Personality and Social Psychology Review* 129.

⁷⁷ Robert Boyd and others, 'The Evolution of Altruistic Punishment' (2003) 100 *Proceedings of the National Academy of Sciences* 3531; Crockett and others (n 2).

⁷⁸ Laurent Begue and others, 'Personality Predicts Obedience in a Milgram Paradigm' (2015) 83 *Journal of Personality* 299.

improving the enemy's moral dispositions to dissuade it from attacking, without apparent physical harm. Despite the absence of physical harm, some combatants might rather die in war than have their moral dispositions determined by their enemy. Nevertheless, a physically harmless weaponised moral enhancement would evade current weapons restrictions and loosen normative just war requirements. The intuition that weaponised moral enhancement would create harm comparable with conventional weapons can be justified once we consider certain risks from moral enhancement that would be worsened in weaponised moral enhancement. Disruption of personal identity by the enemy could severely harm a person in ways comparable with maiming. It could also face implementation and long-term risks as a result of paradoxical social effects emerging from manipulating moral dispositions. These factors can ground future prohibitions against weaponised moral enhancement. For instance, harm to personal identity could constitute a humanitarian violation. The exploration of such possible prohibitions is a fertile research ground but is outside the scope of this article. Here, such technologies are not currently prohibited, despite creating severe harm.

Weaponised moral enhancement would largely exacerbate some of the risks present in civilian moral enhancement. Despite improving the moral dispositions of its targets without apparent physical injury, weaponised moral enhancement could harm in ways comparable with conventional weapons. Like other technological advancements, it can change the nature of war, having the most impact on preventive and humanitarian wars.

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