

Human enhancement in light of classical humanitarian law

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I. Introduction

The idea of increasing the physical and psychological strength, the stamina and efficiency of soldiers through some form of enhancement is probably almost as old as the history of warfare itself. In the past, regular combatants as well as fighters from non-state groups have been keen to experiment, especially when it comes to mind-altering or mood-enhancing substances. For example, in the second half of the 19th century, rum consumption was widespread among British soldiers, and it is estimated that the approximately 36,000 men in the British army drank 550,000 gallons of rum a year; that is around 70 litres per person. At the time, it was believed that rum made soldiers better fighters.¹

During the First World War, the role of alcohol in boosting the morale of the troops was widely recognised. Doctors recommended it in the British Medical Journal, not least for the treatment of mental disorders in soldiers, and a medical officer gave evidence to a parliamentary committee on the issue of ‘shell shock’ among soldiers (today known as PTSD in psychiatric classification): “Had it not been for the rum ration, I do not think we should have won this”.² During the Second World War, German and Japanese soldiers used psychostimulants such as methamphetamines.³ During the Vietnam War, amphetamines were available to US soldiers in industrial quantities. The search for alternatives with fewer side effects led to the discovery of new drugs such as Modafinil and Ritalin.⁴

¹ Puscas, Iona M.: Military Human Enhancement, In: Boothby, William H.: New Technologies and the Law in War and Peace, 2018, p. 188.

² Fussel, Paul: The Great War and Modern Memory, as cited in Kamieński, Łukasz: Shooting Up. A Short History of Drugs and War, 2016, p. 19.

³ Shunk, Dave: Ethics and the Enhanced Soldier of the Near Future, Military Review, 2015, p. 93.

⁴ Puscas, Iona M.: Military Human Enhancement, In: Boothby, William H.: New Technologies and the Law in War and Peace, 2018, p. 188.

It is not apparent that the use of alcohol and drugs has influenced how the law of armed conflict has evolved to the present day. A battalion that consumed alcohol or other stimulants raised few legal concerns. This does not mean, of course, that the soldiers in question would have been permitted to commit atrocities; but as long as their behaviour remained within the prevailing parameters of the norms of warfare, the focus was on how they followed orders and used their weapons. As soldiers physically remained human beings, apart from prostheses to compensate for the function of lost limbs, no difficulty was seen in distinguishing them from a weapons system, a means or a method of warfare.⁵ In this respect, there is no provision in classical international law of war that explicitly deals with human enhancement. In view of the rapid progress of enhancement technologies, however, questions arise regarding the permissibility and the limits under international law to the use of various human enhancement measures in armed conflict. Answers are to be sought in international humanitarian law, international criminal law and human rights law, although the issues are closely interlinked.

II. Basic parameters for the use of weapons and soldiers in war

International humanitarian law comprises such rules which, in the event of war or other international armed conflict, aim to protect people, buildings and infrastructure as well as the natural environment as far as possible from the effects of hostilities. One central principle is that of military necessity. This means that every military measure must be necessary in terms of the way it is carried out, its temporal and spatial scope and its expected effects based on the specific military strategy and tactics. Military action that is not necessary under these aspects must therefore be avoided.

The permissibility of military measures is also limited by the rights and legally protected interests of (potentially) affected persons and nations, which are addressed either directly or indirectly in international law of war. In this respect, important provisions require the avoidance of unnecessary suffering and accordingly prohibit the use of weapons, projectiles and material as well as methods of warfare that are likely to cause superfluous injury or unnecessary suffering.⁶ Interestingly, the First Protocol Additional to the Geneva

⁵ Puscas, Iona M.: Military Human Enhancement, In: Boothby, William H.: *New Technologies and the Law in War and Peace*, 2018, p. 190.

⁶ Dinniss, Harrison/Kleffner, Jann K.: *Soldier 2.0: Military Human Enhancement and International Law*, *International Law Studies*, 92, 2016, pp. 439-443.

Conventions in this regard does not differentiate between a state's own soldiers, foreign soldiers and third parties (see Article 35 para. 2),⁷ meaning that a state is also obligated to protect its own soldiers from superfluous injury and unnecessary suffering.

The principle of human dignity is the normative background and guiding principle for interpreting the relevant protective provisions.⁸ In his contribution, Alexander Balthasar⁹ has already very clearly shown what the protection of human dignity means in the context of the United Nations Charter.¹⁰ The norms of the classical international law of war provide valuable additional points of reference for the permissibility and limits of the various forms of human enhancement. For example, the Geneva Conventions unanimously oblige the parties to treat persons not actively taking part in hostilities, including members of armed forces who have laid down their weapons and persons who have been put out of action as a result of sickness, wounding, detention or any other cause, with humanity in all circumstances (see Articles 3 para. 1 and 12 of the First Geneva Convention; Articles 3 para. 1 and 12 of the Second Geneva Convention; Articles 3 para. 1 and 13 of the Third Geneva Convention; Articles 3 para. 1 and 27 para. 1 of the Fourth Geneva Convention).¹¹ This constitutes an implicit reference to human dignity. How-

⁷ International Committee of the Red Cross (ICRC), Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field (First Geneva Convention), 75 UNTS 31, 12 August 1949.

⁸ Shah, Morial: Genetic Warfare: Super Humans and the Law, North Carolina Central University Science & Intellectual Property Law Review, 12, 2019, p. 19; Sawin, Christopher E.: Creating Super Soldiers for Warfare: A Look into the Laws of War, Journal of High Technology Law 17, 2016, pp. 112-116.

⁹ See Balthasar, Alexander; "Human enhancement" – The perspective of the Charter of the United Nations. In chapter LAW & SOCIAL ETHICS in this publication.

¹⁰ United Nations, Charter of the United Nations, 1 UNTS (XVI), 24 October 1945.

¹¹ International Committee of the Red Cross (ICRC), Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field (First Geneva Convention), 75 UNTS 31, 12 August 1949; International Committee of the Red Cross (ICRC), Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea (Second Geneva Convention), 75 UNTS 85, 12 August 1949; International Committee of the Red Cross (ICRC), Geneva Convention Relative to the Treatment of Prisoners of War (Third Geneva Convention), 75 UNTS 135, 12 August 1949; International Committee of the Red Cross (ICRC), Geneva Convention Relative to the Protection of Civilian Persons in Time of War (Fourth Geneva Convention), 75 UNTS 287, 12 August 1949.

ever, the Geneva Conventions also explicitly prohibit any impairment of personal dignity, namely in the form of humiliating and degrading treatment (see Articles 3 para. 1 lit. c of the Geneva Conventions).

Mirroring this, the provisions of international criminal law that deal with crimes against humanity not only protect the collective legal interest in international peace and global security, but also specific individual rights, such as the right to life, physical integrity, freedom and personal autonomy and thus, ultimately, also human dignity. In addition, human dignity is a protected right under a number of criminal law provisions relating to war crimes. This applies, in particular, to the criminal defence of torture or inhuman treatment, including biological experiments (Article 8 para. 2 lit. a sublit. ii of the Rome Statute of the International Criminal Court),¹² the intentional infliction of great suffering or serious harm to physical integrity or health (Article 8 para. 2 lit. a sublit. iii of the Rome Statute) and the physical mutilation of persons who are under the control of an opposing party or the carrying out of medical or scientific experiments of any kind on such persons which are not justified by their medical, dental or hospital treatment or are carried out in their interest and which lead to their death or seriously jeopardise their health (Article 8 para. b lit. x of the Rome Statute). Interestingly, a distinction is made only in the latter case, where prisoners of war are granted protection, while a state's own soldiers are not. Lastly, again formulated neutrally, the impairment of personal dignity is also expressly mentioned as a criminal offence (Article 8 para. b lit. xxi of the Rome Statute).

Against the backdrop of this stocktaking, it can be concluded that human dignity is the fundamental yardstick by which the permissibility or impermissibility of the various measures from the spectrum of human enhancement is to be judged. In order to narrow down and make manageable the concept of human dignity in this context, which is heavily laden with ideas and legal theory, and on which Eugen Dolezal¹³ makes some further comments in his contribution, it should be noted that human dignity in international humanitarian law is primarily associated with serious interventions in physical and

¹² UN General Assembly, Rome Statute of the International Criminal Court (last amended 2010), ISBN no. 92-9227-227-6, UN General Assembly, 17 July 1998.

¹³ See Dolezal, Eugen: Human enhancement or human reduction? Theological and ethical perspectives on human enhancement in the military sector. In chapter LAW & SOCIAL ETHICS in this publication.

mental integrity. Accordingly, the International Criminal Tribunal for the former Yugoslavia (ICTY) in the *Tadić* case, for example, placed a violation of human dignity on the same level as a serious injury to the body, mental or physical health (Case No. IT-94-1-T, Judgment, para. 729).¹⁴ At the same time, the Tribunal made it clear in various other judgments that temporary humiliation is not sufficient to constitute a crime against humanity or a person-related war crime. Instead, such a crime requires damage that leads to a serious and long-term impairment of the ability of the person(s) concerned to lead a normal and constructive life (see, for example, Cases No. IT-98-33-T, paras. 510 and 513 – Krstić;¹⁵ IT-05-88/2-A, paras. 201-202 – Tolimir).¹⁶

It can therefore already be stated at this point that human enhancement that is not associated with integrity violations, for example, an externally applied arm prosthesis to increase shooting accuracy, does not constitute a violation of human dignity for the soldier concerned. Conversely, however, violations of human dignity are obvious in cases of, for example, the ordering of the consumption or even the forced administration of substance-altering drugs that are not medically indicated, the replacement of a healthy eye with a night-vision or image-transmitting eyepiece or comparable amputations to enable the application of components from robotics, or even the implantation of brain-computer interfaces (BCIs).

Autonomy is another central element of protection arising from human dignity, particularly in relation to interventions on the body. On the one hand, autonomy in international humanitarian law is limited by the fact that persons protected under the Geneva Conventions cannot waive their rights enshrined therein (see Article 7 of the First Geneva Convention, the Second Geneva Convention and the Third Geneva Convention; Article 8 of the Fourth Geneva Convention). This relates to the fact that human dignity and

¹⁴ International Tribunal for the Prosecution of Persons Responsible for Serious Violations of International Humanitarian Law Committed in the Territory of Former Yugoslavia since 1991, IT-94-1-T, 7 May 1997.

¹⁵ International Tribunal for the Prosecution of Persons Responsible for Serious Violations of International Humanitarian Law Committed in the Territory of Former Yugoslavia since 1991, IT-98-33-T, 19 April 2004.

¹⁶ International Tribunal for the Prosecution of Persons Responsible for Serious Violations of International Humanitarian Law Committed in the Territory of Former Yugoslavia since 1991, IT-98-33-T, 19 April 2004; Milaninia, Nema: Understanding Serious Bodily or Mental Harm as an Act of Genocide, 51 *Vanderbilt Law Review*, 2021, pp. 1381-1420.

its core contents are indispensable. On the other hand, soldiers are integrated into a military hierarchy. This is already a conceptual feature of combatant status (see Article 4 para. A subpara. 2 lit. a of the Third Geneva Convention).

It is meanwhile recognised that people who are in a so-called special relationship of power are also entitled to fundamental rights. However, in the case of the military, there are - in principle - greater possibilities for restrictions arising from military necessity and obligation. The military ethicist Michael L. Gross has rightly pointed out that the state curtails individual autonomy in the armed forces, particularly in times of armed conflict, and establishes 'benign paternalism' in its military.¹⁷ As a consequence, it can be assumed that minor interventions in a soldier's body that have no negative long-term consequences are, in any case, permissible if they can be justified by the fact that they increase the troop's chances of survival. Accordingly, the US Uniform Code of Military Justice, for example, allows for soldiers to be punished for refusing to be vaccinated (Article 15).¹⁸ Moreover, in a number of countries, soldiers are obliged to accept a procedure that is considered a standard measure and are expected to undergo medical treatment, namely in preparation for war deployment.¹⁹

In any case, the boundary of impermissibility is likely to be crossed if soldiers are deprived of their ability to control their bodies or thoughts autonomously or to make moral or other decisions independently, for example, through cybernetic implants, human-human interfaces or moral engineering.²⁰ Such human enhancement, which would probably be more of a degradation or reduction, would also have an impact on individual responsibility under international criminal law.²¹

¹⁷ Gross, Michael: *Bioethics and Armed Conflict: Mapping the Moral Dimensions of Medicine and War*, Hastings Centre Report, 34:6, 2004, p. 23.

¹⁸ Robbins, Lauren: *Refusing to Be All That You Can Be: Regulating against Forced Cognitive Enhancement in the Military*, in Gross & Carrick, *Military Medical Ethics for the 21st Century*, 2013, p. 128.

¹⁹ Puszcz, Iona M.: *Military Human Enhancement*, In: Boothby, William H.: *New Technologies and the Law in War and Peace*, 2018, pp. 214-215.

²⁰ Dinniss, Harrison/Kleffner, Jann K.: *Soldier 2.0: Military Human Enhancement and International Law*, *International Law Studies*, 92, 2016, pp. 445-446, 447-448, 463-467 and 477-478.

²¹ *Ibid.*, pp. 476-482.

III. Specific issues

In the following, two specific issues in the context of human enhancement will be assessed on the basis of central principles of international humanitarian law.

1. 'Enhanced' soldiers as ruse of war

Let us first turn the perspective away from the individual soldier and their legal protection to the perspective of the state deploying the soldier, or even the enemy. This raises the question of whether the deployment of soldiers who have undergone unrecognisable human enhancement constitutes a perfidious or insidious act contrary to international law or a permissible stratagem. To illustrate, let us take the fictitious example of a soldier who has two neural devices implanted in their brain. The first device enables them to transmit environmental information to the military base in real time. The second neural device establishes a brain-computer connection that enables the soldier's brain to exercise direct control over a weapon system. The last of these enhancement technologies could qualify as part of a means of warfare, and both neural implants could be categorised as methods of warfare. Despite these enhancements, however, the soldier looks completely normal to an outside observer. This raises the question of whether such a soldier can be deployed.

According to The Hague Regulations Respecting the Laws and Customs of War on Land,²² ruses of war and the employment of methods necessary for obtaining information about the enemy and the country are considered permissible (Article 24). The first Protocol Additional to the Geneva Conventions adds, in this respect, that ruses of war are acts intended to mislead an enemy or induce them to act recklessly, but which infringe no rule of international law applicable in armed conflict and are not perfidious because they do not invite the confidence of the enemy to rely on the protection afforded by that law (Article 37 para. 2). In addition, the manuals that states have issued on the law of armed conflict contain further guidance on the meaning

²² Second International Peace Conference, The 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, International Conferences (The Hague), 18 October 1907.

and delimitation of deception and perfidy. They argue, for example, that ruses of war are lawful if they are not treacherous or deceitful and do not violate an express or tacit agreement (see, for example, LOAC Manual of Canada, 2001).²³ Surprise, deception and dishonesty were among the basic principles of war and gave the army a tactical and even strategic advantage. There was no obligation for either side to act ‘transparently’ towards the enemy.²⁴

It follows that the use of forms of human enhancement that are not already a priori illegal under international law due to a violation of human dignity do not have to be disclosed to the enemy. Instead, states can even use the legal provisions on deception to justify the use of ‘enhanced’ soldiers. However, problems may arise if such persons are taken as prisoners of war.

2. Detention of ‘enhanced’ personnel

The second scenario that comes to mind could be that an ‘enhanced’ soldier with an implanted chip for operating a weapon system or an espionage eyepiece is captured. On the one hand, this could make it impossible for him to obtain the protected status of a prisoner of war under the Third Geneva Convention, which already indicates that the use of such an enhancement is contrary to human dignity. On the other hand, the question arises as to whether the detaining state can remove the chip or eyepiece as part of a medical operation or destroy the chip or eyepiece, even if the person concerned suffers brain damage or becomes blind as a result. This could constitute a prohibited mutilation or a prohibited medical or scientific experiment that is not justified by the medical treatment of the prisoner of war concerned and is not in their interest.

In the case of other ‘enhanced’ soldiers, one possible scenario could be that the enhancement technology used is such that those affected return to a normal initial state without medication or other means, which corresponds to that of a soldier who has not been ‘enhanced’ but is otherwise fit for service.

²³ The law of armed conflict at the operational and tactical level (LOAC) Manual of Canada, Office of the Judge Advocate General, 21 March 2001.

²⁴ Manual on the Rules of Warfare of Israel, Military Advocate General’s Corps: IDF School of Military Law, 2006.

This scenario appears to be unproblematic. However, if the nature of the enhancement is such that a lack of supply of appropriate medication or resources would lead to serious and permanent impairment of the detainee's initial condition and the detaining power is unable to provide the appropriate treatment at its detention facilities, the detainee must be transferred to a military or civilian medical facility where the appropriate treatment can be provided (see Article 30 para. 2 of the Third Geneva Convention). Alternatively, the person concerned may be returned to their home country (see Articles 109 and 110 of the Third Geneva Convention).²⁵ However, without disclosure of the enhancement status, the necessary decisions may come very late, perhaps too late.

IV. Conclusion

This brief survey has shown that various forms of human enhancement pose problems under the classic law of war, and in some cases are not even permissible. An attempt was also made to define legal boundaries for the use of human enhancement in military contexts. It appears that the dominant principle in that regard is the protection of human dignity.

²⁵ Dinniss, Harrison/Kleffner, Jann K.: Soldier 2.0: Military Human Enhancement and International Law, *International Law Studies*, 92, 2016, pp. 451-452.

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