

Perspectives for the augmented soldier (focus on the French case)

WRITTEN BY ANNABELLE BOURDAS

<https://unsplash.com/photos/tw5RNa-hKXM>



**Perspectives for the augmented soldier
(focus on the French case)**

By Annabelle Bourdas

In the race for defence technologies, innovation is a crucial issue to ensure the operational supremacy of armies. Given the advanced breakthroughs in the field of supportive robotic technologies, interest in the integration of new technologies into the human body has rapidly increased. States are therefore engaging in plans to develop augmented soldiers in the context of a constantly evolving tech war.

The question of the augmented soldier is not new in history. States and armies have been looking for ways to push the biological and physiological boundaries of the human body so that soldiers can exceed their natural limits. During the Second World War, German troops were drugged with pervitin to help them fight against sleep or fear for instance. However, the techniques being developed today to allow soldiers to increase their efficiency on the battlefield are becoming increasingly sophisticated (Lincot, 2021). Numerous projects the exoskeleton to the brain-machine interface or genetic engineering are progressing. These projects more or less ambitious depending on the countries testing them. Indeed, states have set different thresholds for their research, and some are more willing than others to cross ethical boundaries to progress on their experiments. While some countries have put a limit on experimentations when they threaten the physical integrity of the soldier, others have allowed projects such as body implants or chips to move forward. This is the case with Russia and China, which have authorised projects for genetic modifications on their soldiers. On the other side, France, for example, has made it clear that it will not condone an augmented soldier by allowing irreversible modifications to their body (Delacharlery, 2021).

Recent technological advances offer new perspectives for armies to imagine the augmented soldier of the future. Nonetheless, this technological development is accompanied by legal, strategic and ethical issues. This raises concerns for the future relationship between democratic powers and military technologies. Hence, if the proliferation of biological optimisation techniques in a military context is probable, a framework to prevent abuse and promote respect for human dignity needs to be established. In France, the enhancement of soldiers is allowed only if the techniques are non-invasive. Nonetheless, some invasive methods such as pharmacological substances are injections for recovery are permitted.

In December 2020, the French Defense Ethics Committee, composed of 18 members coming from various fields (military personnel, scientists, and academics), has given its advisory opinion regarding invasive augmentations designed to improve the physical or cognitive performance of the human body. The Committee states that enhancement should not jeopardise the free will of the soldier nor prevent soldiers from reintegrating into civil society after their missions. France is willing to develop an augmented soldier but an ethical one, concerning to bodily integrity and human dignity principles.

Overall, France's position on the augmented soldier can be resumed by the former Minister of Armed Forces Florence Parly's declaration, "We say yes to Iron Man's armour, and no to Spiderman's genetic augmentation and mutation" (Delacharlery, 2021).

The vision of the augmented soldier is somewhat endorsed by science fiction, with references to superheroes and super soldiers. For example, the exoskeleton, a device that allows soldiers to carry heavy loads more easily, can be referred to as the Iron Man suit. In France, around 100 companies are working with the Defense Innovation Agency to make the military more performant and resilient. Since 2009, the company RB3D has developed the Hercules exoskeleton. While France has drawn the lines of its engagement for crafting the augmented soldier, it acknowledges that other countries might not have the same ethical boundaries and, therefore, should still prepare for a new type of warfare in the future (Delacharlery, 2021).

Furthermore, the Defense Ethics Committee report aims to prevent any potential abuse in the quest for creating an augmented soldier. It outlines that France should still engage in experimentations with respect to democratic principles and fundamental values as if it was to withdraw from any research, it would put France at a strategic disadvantage by preventing the country from developing operational capabilities. In other words, France should look into technologies that can increase soldiers' physical or psychological capacities without crossing ethical boundaries such as genetic engineering (Bourgeois, 2021).

Moreover, there is an industry behind this desire to create an augmented soldier. The United States (US) have been involved in soldier enhancement since the early 2000s. The Defense Advanced Research Projects Agency (DARPA) has created several programs, such as the Next-Generation Nonsurgical Neurotechnology (N3) program, which focuses on crafting a high-performance, bi-directional brain-machine interfaces. States that will manage to design new technologies that can enhance soldiers' performance, will have the upper hand on the market and the battlefield. However, how far are states willing to go to be competitive is something to consider.

Some states will not give the same place to bodily integrity and will authorise practices that bring them closer to eugenics. Indeed, by modifying the genome of soldiers to reduce their needs or fears, there is a growing risk that it will dehumanise conflicts (Lincot, 2021). What cost are states prepared to pay to achieve maximum efficiency for their soldiers? Technologies can change the relationship soldiers have to the battlefield and the role the soldiers play in warfare is changing with this race for performance. Will soldiers be reduced to a mere technological tool? If soldiers are genetically modified, where does their consent to the modifications belong? How will these modifications affect their return to civil society? Will augmented soldiers and 'natural' ones be treated differently? French laws and codes of good practice by research institutes shed light on these questions.

France is inclined to research an external enhancement of the soldier through equipment but reticent to biological augmentation. In France, article 16-3 of the Civil Code states “The integrity of the human body may only be violated in the event of medical necessity for the person. The consent of the person concerned must be obtained beforehand, except in cases where his or her condition makes necessary a therapeutic intervention to which he or she is not able to consent.” In other words, violations of bodily integrity are only acceptable under the cumulative conditions of medical necessity and consent of the person.

The national laws on bioethics are also legislative provisions that aim to define the limits of the intervention of medicine on the human body to avoid any form of exploitation derived from medicine and abuses in the professional and social world. They ensure that experiments for the augmented soldier are conceived in a way that respects bodily integrity, consent and human dignity. Nonetheless, it is worth noting that there is no particular framework for military augmentation (Colin, 2016).

Similarly, the augmented soldier raises legal concerns related to international humanitarian law and the law of armed conflicts. The problematics that come with the enhancement of soldiers can be linked to the just war theory, “whether from the angle of the conduct of the conflict (*jus in bello*) with an augmented individual who may be unable to distinguish between civilians and combatants or, from a post-conflict perspective (*jus post bellum*), with a peace process that is difficult to achieve in the case of augmentations impacting, for example, the memory of soldiers” (Bourgeois, 2021).

In conclusion, soldier enhancement poses legal, ethical and strategic concerns. International humanitarian and national law are concerned with establishing a framework that prevents states from abusing technologies such as genetic engineering that resembles eugenics. Invasive experimentations conducted in a military setting should respect bodily integrity, and human dignity principles as these biological modifications may not be reversible. Soldier enhancement also has an operational dimension that may impact how armies conduct warfare and the place of the soldier in conflicts. Finally, states are entering a race to develop these technologies to ensure their rank at a strategic level and their operability on the battlefield when facing armies with augmented capacities. The main actors such as China, Russia and the US have brought perspectives for an augmented soldier closer to reality. While it is hard to predict how these technologies will be used in the future, states will have to define their legal and ethical boundaries to oversee the progress of the augmented soldier.

Bibliography

Bourgeois, P. (2021, February 24th) Strategic Brief n°18 – "Yes to Iron Man, No to Spiderman!" A new framework for the augmented soldier with the opinion of the French Defense Ethics Committee (« Oui à Iron Man, non à Spiderman ! » Un nouveau cadre pour le soldat augmenté avec l'avis du Comité d'éthique de la défense en France).

Available at : <https://www.irsem.fr/publications-de-l-irsem/breves-strategiques/breve-strategique-n-18-2021.html>

Colin, A. (2016) The Augmented Man, sociological reflections for the military (L'Homme augmenté, réflexions sociologiques pour le militaire), Études de l'IRSEM, 42.

elacharlery, M. (2021, April 22nd) "Augmented soldier": here is how the military of tomorrow will be equipped ("Soldat augmenté" : voici comment sera équipé le militaire de demain).

Available at: <https://www.tf1info.fr/sciences-et-innovation/video-soldat-augmente-les-equipements-des-militaires-de-demain-2184116.html>

Lincot, E. (2021, February 10th) China is working on the development of super soldiers (and does not have quite the same ethical limits as the West...) (La Chine travaille au développement de super soldats (et n'a pas tout à fait les mêmes limites éthiques que les Occidentaux...)).

Available at : <https://atlantico.fr/article/decryptage/la-chine-travaille-au-developpement-de-super-soldats--et-n-a-pas-tout-a-fait-les-memes-limites-ethiques-que-les-occidentaux-----emmanuel-lincot>