

French Symposium on Soldier Enhancement

∞ Part 6 ∞

Editor's note:

A symposium on French army initiatives to enhance soldier capabilities was held in Paris 19 June 2017 at the headquarters of the French Armed Forces titled "The Enhanced Soldier: The Needs and Prospects of Increasing the Fighter's Abilities." The Army University Press at Fort Leavenworth, Kansas, agreed to publish translated versions of the presentations given in seven parts as *Military Review* Online Exclusive articles to promote broader understanding of allied views and initiatives on a subject of intense collective interest. The below is the sixth of the seven presentations. The other presentations are published in separate documents.

The Hexagone Balard, headquarters of the French Armed Forces and the
Ministry of the Armed Forces, 19 December 2015 in Paris.
(Photo courtesy of Wikipedia)



Soldiers and Enhancement

A Fundamental Ethical Approach

Professor Dominique Lambert

This is a translation of a lecture given during the conference called “The Enhanced Soldier: The Needs and Prospects of Increasing the Fighter’s Abilities,” held in the headquarters of the French Armed Forces, in Paris, 19 June 2017.

The concept of the enhanced soldier is vague from the outset. On one hand, any equipped soldier could be seen as an enhanced soldier. On the other hand, radical technological enhancements could intimately integrate and interweave the human into a machine to the point that they would become a negligible part of a system. On one hand, enhancement is a trivial and classic concept, identified with (sophisticated) equipment; on the other hand, it [soldier enhancement] is a totally new concept since it would imply a radical transformation or a complete erasure of a soldier’s humanity. Today, from a legal and ethical point of view, the most crucial issues concerning the enhanced soldier fall within the second concept. We will try to precisely define that concept by considering benchmarks that address potential ethical problems.

To do this, we need to propose a concept that is both more precise and more operational. The “enhanced soldier” is a fighter whose physical and mental capacities (cognitive or perceptive) are pushed to levels far beyond their natural limits thanks to intrusive systems (robotic or chemical), or one who is coupled with mechanical or electronic systems that enhance his environment to include virtual realities either in whole or in part. Basically, one can think of an

enhanced fighter based on (1) either the extreme extension of his body and mind’s capabilities or (2) the extension of the limits of what he considers to be his natural environment, an extension of the universe into which he is immersed. Both sides of the enhancement seem important for us to consider. They form a relationship that should be studied in depth in order to accurately identify potential new problems for future soldiers.

The concept of “a level far above natural limits” may seem rather vague, but it can be intuitively understood by citing, for example, the difference between, on one hand, binoculars or night vision goggles, and on the other, virtual landscape representation systems (as on GPS screens). In the first case, the device is a kind of “extension” of existing capacities, and in the second, it adds a new ability, fulfilling a “discontinuity,” which means in this context something not naturally existing. The fundamental concept of enhancement requires not only an understanding of capacity extension, but also, at the same time, an understanding of the threshold of discontinuity, or of rupture. We believe both ethical and legal issues relating to the enhanced soldier arise within the conceptual gap that exists between extension and discontinuity.

To illustrate the two dimensions of enhancement (physical and environmental), the following examples

Professor Dominique Lambert is a professor at the Royal Academy of Belgium (Science Class), University of Namur (Department of Philosophy).

are given. If we give a Special Forces soldier a drug that allows him to stay awake for three days, he experiences an intrusive chemical enhancement that can take sleep resistance far beyond its natural limits. Similarly, an exoskeleton allowing a fighter to easily carry a two hundred-kilogram load falls into the same category as enhancement (physiological, but here nonintrusive). However, if we give an attack helicopter pilot a virtual reality helmet that gives him access to a large amount of information from several networks and media, we cross into the second enhancement scenario, wherein we extend the pilot's environment by immersing him in a universe that is both real and virtual. The two enhancement modes meet and the two categories are not hermetic. Rather, they should be considered as "limits" between which the enhancement is expected. If one considers a night-vision system, for example, the night-vision system is both an extension of the existing visual capacities of the human body and also the device that extends the perceived universe, immersing the soldier in an environment that is both real and virtual (through unnatural characteristics of colors, symbols, etc.). In both cases, however, there is a radical discontinuity marking the threshold where the limits of capacity extension (perceptual, cognitive, physiological) and the boundaries of natural environments are reached and where the real increase in performance and the virtual extension of environments begin.

Definitions of the enhanced soldier are generally focused on the brain, the body, etc. But it is important to note that a human's ability to think and judge also depends on the world in which he or she is immersed. This "world" is not entirely an external object, and this is an important point. Our perceived world is both what conditions us and what is conditioned by us. We see a world and we extract information from it, but at the same time we only see what we are able to extract from it through our perceptual, cognitive, and cultural filters. Martin Heidegger stated that "the animal is poor in the world," and this correlates to the animal's limited cognitive abilities.¹ Humans generate and discover a rich and vast world. This world, in a way, "sticks" to him, and integrates with him. This is because the senses (perceptual and cognitive) of objects change according to the contexts in which they are immersed. As the biologist and philosopher Jacob von Uexküll explicitly states, "The same object placed in different

environments takes on different meanings and changes profoundly every time."²

Thus, the interpretation of objects can change drastically if they are immersed in different worlds that are changed and extended by virtual realities of all kinds.

The relationship of humanity to the world must be considered in two directions, because the second brings elements of information to the first, and the second is enriched with meaning and symbols. To dilate, modify, and therefore "enhance" the world of the human subject is also to enhance the human in a correlative way. This is not surprising, because it is the basis of a whole pedagogy that allows students to discover new horizons so that their minds can grow. When one opens up to a larger world, it enriches the mind. But in return, when one enriches and opens the mind, one discovers, perceives, and constitutes a larger world. The problem of enhancing soldiers is therefore also the problem of enhancing the "worlds" in which the soldier is immersed and that serve as an informational basis for judgment and reflection.

Dealing with Ethical Questions: Is Enhancement Problematic?

There are already important questions about the use of systems that would expand natural human capabilities. Just think of the practice of intense, very strenuous physical training imposed on athletes or excessive bodybuilding practices that exploit body plasticity. It is no longer a question of meeting the natural limits of bodily flexibility, it is a question of crossing a threshold, of going beyond what bodies and minds can naturally perform.

It should be noted that the transition from discontinuity is not inherently problematic from an ethical or legal point of view, but some extensions (excessive bodybuilding or lifting) could well be. Diving into the virtual universe supported by GPS is not problematic and allows for better, more secure physical movements. Coupling a disabled body with an exoskeleton that renders mobility is also important and ethically legitimate, though it crosses the natural boundaries of corporeality. The use of prostheses in restorative medicine falls into this category of significant and humanely acceptable enhancements.

Basically, enhancement criteria must be studied in depth to determine what would be eligible

enhancements and what would not. On one level, before theory, we observe that some natural extensions (modified body shapes) are ethically problematic, but others dealing with discontinuities (natural gaps) and fulfilling bodily, cognitive, or environmental limitations seem perfectly legitimate. The question is whether it is possible to sketch out and fundamentally justify eligibility criteria for enhanced systems.

risk in the domain of augmentation to have the soldier, enhanced technologically, turn into a “weakened” soldier in his humanity.

A principle of judgment, regulating action, could be to accept as a technological or bodily enhancement only that which is strictly compatible and consistent with what defines human beings in depth and considered through all their capabilities: bodily



There is a risk in the domain of augmentation to have the soldier, enhanced technologically, turn into a ‘weakened’ soldier in his humanity.



These criteria are generally thought of from the enhanced human point of view, but they should also be thought of from the enhanced environmental point of view in which we immerse some people. Imposing an extended environment on people is not ethically harmless, as demonstrated by the failures of some utopian urbanization and land-use planning projects. This is a virtual territory, but “in” which humans live and “in” which humans are influenced through subtle interactions between reality and virtual reality. We will therefore consider two broad classes of ethical thinking. The first will be about the soldier’s own enhancement. The second will consider the challenges posed by enhanced environments in which future fighters could be immersed.

Ethics of the Enhanced Soldier: A Reference to a Regulatory Principle

If we want to guide ethical or legal thinking with regard to enhancing future soldiers, it is important not to lose sight of the profound aims of our actions. For governments of democratic countries, conflict resolution and return to lasting peace must motivate military engagement, and in the end, remain at the service of human dignity, with a deep-rooted comprehension of humanity. Any human enterprise must be consistent with that understanding. The use of any means to put stakes on humanity or violating human dignity would be self-contradictory. It is clear that enhancement of soldiers could, in some cases, bring ahead programs risking a gradual destruction of humanity. To use an expression often mentioned in this context: there is a

(cognitive, perceptive, physiological, emotional, etc.) and relational.

Man As Subject and Not As Object

The idea of enhancement, of the human transformation, can imply a kind of objectification of the person. The risk here is that the subject is only a material that will be shaped to meet specifications. One could argue that training soldiers is a result of this type of body modeling and mental conformation. In fact, there is a significant difference between the two situations. Training helps to go far in the spectrum of human capabilities, but it intends to stay within the limits of the human subject. Soldiers’ mental and physical training would be inconsistent if it were pushed to the point of destroying all those who followed it! One could say that training, in the classic sense of the word, helps enhance physical human performance without breaking the human. However, some enhancement projects for soldiers could turn into an undertaking to modify the human being in a way that is inconsistent with the fundamental characteristics of the person.

Mankind as a Free, Conscious, and Responsible Subject

What constitutes human nature is, among other things, its freedom. In Paul Ricoeur’s words, we could say that there are involuntary things in humanity, but also voluntary ones.³ Man has the ability to make choices and actions through free will. This freedom, deep rooted in the consciousness of what has been

accomplished, is at the origin of the subject's responsibility. It is in the name of his conscience and his freedom that he can be held accountable for his actions to himself and to society, and that is precisely what his responsibility is.

We know that some of the soldier's enhancements, such as drugs, can weaken or annihilate his conscience and freedom. This type of enhancement is therefore not in line with our regulatory principle, which is a rule of human self-consistency.

In a kind of science fiction scenario, one could imagine techniques that remotely control soldiers' brains, to inject them with substances to reduce their inhibitions or to increase their strength without their knowledge. Such techniques would remove the human actor's role as a moral subject and turn him into a simple instrument. However, it seems to us that the morality of the soldier and the officer is crucial. The soldier can never be considered a simple machine. He carries out orders, of course, but without ever losing sight of fundamental rights and essential human values. This is what makes the soldier noble, and if nobility disappears, the human subject is reduced to a dangerous, soulless being. Maintaining freedom and conscience is an essential requirement for conserving, at the heart of violence and the severity of conflict situations, something of essential humanity.

Man and His Body

The human being is also defined by its body. Who one is as an individual also passes through a body with its integrity, its richness, and its limits. Respect for bodily integrity is one aspect of respect for humanity and its inalienable rights.

We immediately realize that some bodily enhancements are perfectly legitimate because they serve human integrity. Thus, a reconstructive surgery is perfectly at the service of women's and men's happiness insofar as it allows people to restore what defines them destruction or even to the significant weakening of our veterans' capacities.

Before deciding on a military operation, the issue of human casualties is considered. Every responsible decision-maker tries to minimize them. In the same vein, the number and importance of posttraumatic shock and other conflict-induced pathologies should be minimized. The side effects of soldiers' body enhancements are not negligible, and it is important to consider that ethical issues arise not only at the time of conflict, but also in relation to all

the consequences that may result. If the enhanced soldier imposes enormous problems on other soldiers' moral and physical health, respect for humanity can also mean a failed strategic success, even if the mission is designed to resolve conflict. It is in this respect, and with a long-term perspective, that we must judge whether to introduce certain body enhancements.

Man As a Limited Being and the Utopia of Power

Projects designing an enhanced fighter must not lose sight of any possible drift toward a loss of sense of boundaries. The enhancement can have the same effect as doping or drugs; it can lead to overestimation or to give free rein to the phantasms of power. Under the influence of these substances, a human being may feel invincible, and he might take actions that a healthy awareness of his limits would normally prohibit. The loss of a sense of physical or moral limits could lead to situations where troops would be put at risk by excessive or disproportionate actions. If you think you are invincible, you lose sight of your weaknesses. Just think of Goliath!

It is therefore important to keep a fair measure of the enhancements and above all preserve an awareness of the limits. It would also be useful to put procedures in place to help responsible authorities remain aware of behavior aimed simply at satisfying unnecessary and dangerous desires for power. Enhancement should be subject to a principle of proportionality, and enhancement projects should never be out of step with the legitimate goals (ethical and legal) and physical or mental limits of the human being.

Ethics in the Enhanced Environmental Regime: A Reference to a Regulatory Principle

Some technological enhancements plunge soldiers into environments that are no longer real but made up of a complex mix of news and virtual realities. A night landscape viewed with a night-vision system is a real environment but is revealed by technological means that are not natural, in the sense that it extends natural vision. In contrast, looking at reality through a helmet visor on which, in addition to a landscape reconstructed by GPSes, we project information on the nature of people (friends or foes) or on the strategic importance

of targets; this is a virtual reality through an authentic technological discontinuity.

Pedagogy, like any learning, is based, among other things, on an openness “to” the world and “of” the world. We immediately realize that the quality of training processes depends crucially on the quality of the worlds in which learners are immersed. Analogously, it can be said that if one confronts the soldier with virtual reality it is important to control the characteristics

From a legal and ethical point of view, the responsibility for an act, in the context of virtual reality, becomes more complex, like that of an actor caught in a network of agents, each of whom would bear part of the responsibility for the quality of the information they provide. In the context of virtual reality, liability must involve a precise identification of the actors involved in the enhancement and a strict assessment of the quality of the information that makes up the

“ It could therefore be said that the enhanced environments conditioning a soldier’s thinking and decisions should always be lawful, that truth and moral values are promoted. ”

(types of information, quality of information, introduced informational biases, exclusions from certain elements made invisible in the world presented, etc.).

It could therefore be said that the enhanced environments conditioning a soldier’s thinking and decisions should always be lawful, that truth and moral values are promoted. This regulatory principle may seem broad and therefore vague, but it has practical implications. For example, it prohibits the creation of a perception of a world in which noncombatants are neglected or obscured (their virtually reconstructed perception is, in the enhanced system, minimized or affected by negligible weight), or of a world built on deliberately falsified information to induce certain illegal or immoral behavior.

Environment and Responsibility

The ethical and legal question that arises here is that of responsibility. The soldier is responsible for his actions, and he must be able to answer for them. Nevertheless, in order to judge the appropriateness of the act, it must involve the nature of the act, the context in which it is performed, and the analysis of the intention that inspired it. These classic elements of moral discernment are based on a knowledge of situations that involves accurate information. If we change the world virtually, if the soldier’s perception is biased or misled, his responsibility is changed, as is the responsibility of the one who produced the enhancement.

enhancement. We know that in such situations, identifying responsibilities and responsible subjects can be complicated as it is in all cases of action involving complex technological mediations. In this regard, we must remember Ricoeur’s words: “Everything happens as if responsibility, by extending its radius, dilutes its effects, to the point of making the perpetrator or perpetrators of the harmful effects to be feared elusive.”⁴

To provide the soldier with a virtual world, it is therefore important to control and maintain the elements that make up that world and that will condition shared responsibilities in the event of criminal acts committed in and by that virtual world.

Virtual Environments and Freedom

Another issue that correlates to the one we have just discussed is the loss of freedom. The intimate links between humans and their “worlds” must be carefully analyzed. It is easy to recognize that one can be a prisoner of one’s education and one’s environment, or subject to prejudices that come from the environments in which one has been immersed. In contrast, environments and education have been able to help us achieve true autonomy and freedom. We see that “our” worlds can either make us slaves or free men and women. We must therefore take this into consideration if we want to assess enhancement of soldiers by adding virtual worlds. It is essential to control the prejudices and biases that can trap reflection and judgment.

One might ask how this could be achieved operationally. Suffice it to say that one of the best ways to

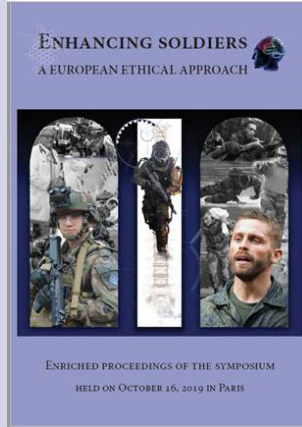
escape conditioning is to bring about changes in perspective. Preserving the freedom of the enhanced soldier could allow him access to different virtual worlds, from different points of view, both informational and perceptual. As an analysis of perceptual illusions shows, varying points of view and correlating invariant identification can resist the variations in which elements of reality are given and fragments of truth are manifested. One could suggest that the “good” concept of virtual reality goes hand in hand with the possibility of a permanent opening of this world to include changes in points of view or to reconfigurations. Some disasters have been avoided by humans who externally check the data provided by their machine screens! Here again, we find an element that makes humans unique: breaking out of

kind of instinctive and noncritical identification of the real and its enhanced representation. This loss would be similar to the loss that occurs when on a department’s computer, the struggle of a hospitalized patient is reduced to a room number and a sum of pathologies represented by all kinds of symbols. Knowledge of the reality of a particular disease is increased by information about its pathologies. This virtual reality compared to what we see externally is particularly important. However, under no circumstances can it be identified with the patient himself because of the risk of profound dehumanization.

It seems important to think about the enhancements in the soldiers’ “worlds”; combat helicopter pilots, armored vehicle drivers, or simple infantrymen exploring a complex environment at night,

always with the ability to distinguish between reality and its representation. This is a classic problem that arises similarly in the field of artificial intelligence when we refer to “Turing tests.”⁵ Even if we have an accurate representation of human intelligence characteristics from using powerful systems that imitate them perfectly, it does not mean that it is legitimate to identify “real” intelligence and “artificial” intelligence.

Enhancing Soldiers, A European Ethical Approach is a compendium of the proceedings of a symposium sponsored by the International Society for Military Ethics in Europe, held 16 October 2019 in Paris, that provided a venue for the presentation of papers by a variety of international scholars discussing research on topics related to initiatives associated with efforts to enhance soldier capabilities. The symposium revisited and updated issues that were previously examined in a similar symposium titled “The Enhanced Soldier: The Needs and Prospects of Increasing the Fighter’s Abilities,” sponsored by the French army 19 June 2017 at the headquarters of the French Armed Forces. The compendium is available online at https://www.euroisme.eu/images/Documents/pdf_cahiers/Le%20soldat%20augmenté%2019-06-2020-web%20VFinal.pdf.



the confines of the worlds in which they are enclosed to risk an innovative, different, offbeat look.

Loss of Reality

Virtual environments can also change the meaning of reality. In the same way that excessive video gaming can induce a “game boy mentality” in people who find themselves having to remotely operate robots, a confrontation with largely virtual environments can lead to a loss of a sense of reality. Of course, one could object to the fact that (informational) enhancement in reality can offer a greater awareness of the rich environments and thus lead to an enhanced sense of reality. This is true, but what we are discussing here is losing the sense of difference between the real and the virtual; it is of a

To conclude this point, one could say that it would be profoundly contradictory to contemplate an enhancement to reality that would plunge it into unreality and to consider the relationship we have with it as false. (This relationship is none other than the truth, because this is the correspondence between what we say and what we think with what is: *adaequatio rei et intellectus!*)

Conclusion: Helped Soldier or Outdated Soldier? Informed Soldier or Deceived Soldier?

What do we really want when we enhance soldiers, considering the two directions we have highlighted (individual enhancement or the virtual reality in which soldiers are immersed)?

The intent is to enhance capabilities that enable soldiers to carry out their missions (in accordance with laws, rules of engagement, and values) while preserving human life as much as possible. Respect for soldiers' lives must be considered, not only during operations, but also in the long term. It would be absurd, from a national perspective, to think about enhancements that destroy soldiers in the long run. Let us think of the human and economic burden on these soldiers after the conflicts. If enhancements are to remain consistent with a society that respects its citizens, they must be "aids" and not burdens that would eventually destroy those who would have accepted them. The soldier can be enhanced if it helps him, but if he is overtaken or diminished, or even overwhelmed by these enhancements, it would be illogical to develop them.

We have seen that the virtual reality of the soldier's world is one of the modalities of the soldier's enhancement itself. We give meaning to the objects we see in the world, but it is in turn the world that conditions and structures that meaning. There is a deep, twofold connection between the world and the knowing subject. But this connection in turn determines our actions. Virtual reality is one of the facets of soldier enhancement. What is the intention of these enhancement projects in the world? Is it the increase of reliable and controllable information? Virtual worlds or these hybrids of virtual and actual realities are at the service of precise knowledge to be used for judgment. Information that can be superimposed on natural perception to enrich it and inspire informed judgment

includes seeing where the darkness is, knowing whether people are fighters, knowing that a particular building is a hospital and not a military base, etc. This intention could be overlooked if one tried to deceive the fighter or if one tried to encourage him to commit wrongdoing by submitting "fake news" to him. Our guiding idea is to enlighten the soldier's conscience and judgment, and not to encourage action on the basis of lies.

At the end of this short contribution, we suggest two fundamental principles, two benchmarks for analysis regarding the introduction of enhancements.

On the one hand, there is respect for human limits. There is no point in enhancing a soldier if this results in his destruction in the long term. On the other hand, respect for bodily limits may also play a role in limiting the duration and violence of conflicts. Bodily enhancements must help soldiers carry out their missions; they should not become "technological enemies" that could eliminate or harm the soldiers in the future.

There is respect for the reality of situations and the truth of information that must remain a leading principle guiding the design and use of virtual reality systems. Quality information must help the soldier with his discernment. One of the ways in which the soldier is respected is that he should not be deceived into doing something that he would consciously condemn or that the laws would prohibit him from doing.

At the end of the day, what we need to aim for is an enhanced soldier, not a crushed one, and an informed soldier, not a deceived one. ■

Notes

1. Bruce Bégout, "Les Animaux Chez Heidegger," *Labyrinthe* 40 (2013): 63–66, <https://doi.org/10.4000/labyrinthe.4313>.

2. Joël Balazut, "L'Homme, L'Animal et La Question du Monde Chez Heidegger," *Klesis-Revue Philosophique* 16 (2010): 11, accessed 22 October 2020, <https://www.revue-klesis.org/pdf/animalite02Balazut.pdf>.

3. Paul Ricoeur, *Freedom and Nature: The Voluntary and the Involuntary*, trans. Erzim Kohak (Evanston, IL Northwestern University Press, 1966).

4. Paul Ricoeur, *The Just*, trans. David Pellauer (Chicago: University of Chicago Press, 2000).

5. Method to evaluate whether artificial intelligence can be distinguished from a human one in a blind interaction with a human being; method named after Alan Turing, an English computer scientist and mathematician.