

Moral Autonomy and the Ethics of Soldier Enhancement

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In the spring of 1940, German General Heinz Guderian had a problem. He had convinced the German General Staff to allow him to lead the invasion of France with pure armored units, taking the tanks out of the Infantry units they supported. By doing so, he believed he could overcome the German Army's inferior numbers and equipment by out maneuvering the French and British forces and encircle them before they had a chance to react. To achieve this objective, the tanks would have to break through the Ardennes Forest and get to the French city of Sedan before enemy reinforcements arrived.

At normal rates of march, even for the more mobile tank formations, moving that fast would be impossible unless they could drive and fight for at least three continuous days and nights with no stopping and thus, no rest. To overcome this obstacle, Dr. Otto F. Ranke, Director of the Research Institute of Defense Physiology, prescribed the drug Pervitin, a variant of crystal methylamphetamine, to the attacking force. This drug had been used previously in smaller numbers in Poland, reportedly with good effect. As a result of this success, the German Army had ordered the production of 35 million more tablets, enough of which were available for the invasion of France that in enabled the German panzers to break through the Ardennes in time to beat the reinforcing British and French forces, and thus force France's surrender a few weeks later.¹

The increased alertness and endurance provided by the Pervitin came with a down-side of course. Excessive Pervitin use caused circulatory and cognitive disorders, often impacting operations.² In some cases, it caused soldiers to be-

¹ Norman Ohler, *Blitzed: Drugs in Nazi Germany*, Shaun Whiteside, trans. (New York: Allen Lane, 2015), 67-88.

² Ohler, p. 36. See also Andreas Ulrich, "The Nazi Death Machine: Hitler's Drugged Soldiers," *Der Spiegel*, May 6, 2005. <http://www.spiegel.de/international/the-nazi-death-machine-hitler-s-drugged-soldiers-a-354606.html>. Accessed 12 May 2017.

come so jittery they imagined enemies who were not there. One SS unit in the East was easily overrun by Russians because after days of continuous Pervitin use, they fired at the slightest noise and had expended all their ammunition by the time the Russians actually attacked.³ Even before the invasion of France, Ranke himself, who took Pervitin on a regular basis, had expressed concern about its side effects and insisted that its use be moderated and monitored.⁴ The fact that his concerns were rarely adhered to emphasize the moral force “military necessity” can have on overriding more humanitarian concerns, even those directed at one’s own people.

History credits France’s rapid fall to Guderian’s *Blitzkrieg*; however, had the soldiers in those units not been hopped up on crystal meth, that innovation may have failed and World War II would have preceded very differently.

Introduction.

Soldiers—as well as the governments that employ them—have long sought to enhance their ability to destroy the enemy and survive. For the most part, “enhancements” have come in the form of modernization efforts to improve the equipment soldiers use to amplify their destructive capabilities as well as defend themselves against the enemy. Today, however, medical technology is evolving to the point militaries no longer have to settle on simply improving soldiers’ equipment, they now stand ready to improve the soldiers themselves.⁵ It is this ability to improve the soldier that opens up ethical questions not normally associated with other acquisition efforts.

The potential life-saving benefits coupled with the potential life-altering side-effects place commanders who would offer such enhancements as well as the soldiers who would receive them in a moral bind. Forcing soldiers to accept enhancements that could have debilitating side-effects is the definition of exploitation. Allowing them to volunteer, however, is not much better. Making soldiers choose between death and suffering is a form of coercion; depending on the chances for each, the only rational choice would be “suffering.” Thus,

³ Kamienski, Lukasz, *Shooting Up: A Short History of Drugs and War*, (Oxford: Oxford University Press, 2016), Kindle Edition, retrieved from Amazon.com, Location number 2902

⁴ Ohler, p. 71.

⁵ David B. Larter, “Performance Enhancing Drugs Considered for Special Operations Soldiers,” *Defense News*, May 16, 2017, <http://www.defensenews.com/articles/special-operations-command-wants-to-develop-super-soldiers>, accessed May 17, 2017. This article just specifies one particular initiative regarding soldier performance enhancement. As this article will describe, there are several underway seeking to alter body and mind in ways to make soldiers more lethal and resilient.

simply offering an enhancement in a military context can make the would-be recipient's consent irrelevant. For such compromise to be permissible it must be, in some sense, "fair," that is it must either be permissible to override consent or change the conditions of the offer such that consent is again relevant.

Defining Enhancement.

For the purposes of this discussion, enhancement refers to any medical or biological intervention to the body intended to improve a capability or provide one that did not otherwise exist.⁶ What this definition excludes are measures that restore diminished capabilities to normal functioning. So, for example, a prosthetic that allows an amputee to walk normally would not count as an enhancement; however, one that allows for greater than human speed or endurance even though there would not be normal functioning without it, would.

In the military context, it is also worth distinguishing between "offensive" and "defensive" measures. Since the best defense is a good offense, in some sense all measures may be considered defensive; however, there is a difference between measures intended to protect soldiers from the effects of enemy weapons and those that increase soldier lethality. The former reduces risk to soldiers, but because they are "defensive" in nature, they do not expose the soldier to additional risk. The latter, on the other hand, makes it more likely the soldier will be exposed to the enemy because they would be, by virtue of the enhancement, better able to manage those risks than a non-enhanced soldier.

For example, the pyridostigmine bromide (PB) provided to U.S. soldiers during the first Gulf War to protect against the effects of nerve gas, would count as defensive since its intent was simply to prevent the specific effect of a particular weapon.⁷ On the other hand, drugs like Pervitin, which were intended to improve cognitive endurance, would count as offensive since the intended effect was to enhance soldiers' lethality. In this context, it is tempting not to consider defensive measures as enhancements since in many ways their effect is to preserve normal functioning in an otherwise hostile environment. However,

⁶ Patrick Lin, Maxwell Mehlman, Keith Abney, *Enhanced Warfighters: Risk, Ethics, Policy*, Case Western University, Case Research Paper Series in Legal Studies, Working Paper 2013-2, January 2013, p. 17.

⁷ Ross M. Boyce, "Waiver of Consent: The Use of Pyridostigmine Bromide in the Persian Gulf War," *Journal of Military Ethics*, Vol 8: Issue 1, 1-18. See also Lin, Mehlman, Abney, 14-15. Lin, et al argue that vaccines are better thought of as "therapy" and thus not enhancements since they seek to prevent diseased conditions; however, they acknowledge this distinction may not apply in all contexts. Since PB use was not simply to prevent a diseased condition but also to enable soldiers to operate in an otherwise hostile environment, I will consider it as an enhancement for this discussion. See also Lin, Mehlman, and Abney, p. 48 for their discussion on PB use in the Persian Gulf War.

since they provide a capability soldiers do not naturally have—in this case the ability to better withstand a nerve gas attack—such measures would count as enhancements under the definition employed here.⁸ Perhaps more importantly, taking them still places soldiers and their commanders in the bind described above and thus are worth moral consideration.

Human Enhancement Ethics: Civil Society vs Military.

In a broader discussion on the ethics of human enhancement in civil society, Patrick Lin and Fritz Allhoff argue that the *prima facie* freedom to choose how one lives one's life suggests there should be few restrictions on the kinds of enhancements persons should be allowed to accept.⁹ Such freedom does not come without constraint as it not only matters how the exercise of one's autonomy can affect others' exercise of their own, the physical effect of enhancements can negatively affect the individual who receives them and thus place a burden on society when those effects are more than the individual can bear. Thus, the deontic permission to seek enhancement is balanced by the more utilitarian concern regarding how pursuing such enhancements would affect the health and safety not only of oneself, but others as well.

In the military context, respecting freedom and autonomy is less concerned with whether one should be allowed to receive an enhancement as much as whether one may be *forced* to receive one. To the extent the enhancement represents the best response to an enemy advantage, military necessity will place a great deal of pressure on commanders to offer them and soldiers to accept. In providing the enhancement, however, one should not only consider the health and safety of the individual who receives it, but also the health and safety of those who do not, as the latter are less capable than their enhanced comrades of handling the rigors of combat and thus surviving.

Furthermore, how society treats its enhanced soldiers is a special concern for human dignity, but not just because of the potentially debilitating and isolating effects enhancements can cause. While these concerns are important, enhancements may also affect how society regards and rewards military service.

⁸ Lin, Mehlman, and Abney, 15. They argue that for the most part vaccinations should not be considered enhancements and rather are better thought of as pre-emptive therapy. As they ask, "should it matter if a therapeutic intervention—that is, designed to restore health back to normal—is administered before or after an illness?" While this point suggests that some vaccinations would not count as enhancements, others, such as the PB administered to U.S. troops in the Gulf War would since its purpose is to enable functioning in an environment (one where nerve gas is present) that a human being would not normally be able to function.

⁹ Patrick Lin and Fritz Allhoff, "The Ethics of Human Enhancement," *Nanoethics*, 2 (2008): 256.

Society rewards its soldiers precisely because they expose themselves to risks and hardships so that the rest of society does not have to. However, to the extent soldiers employ cognitive enhancements that control fear, for example, or physical enhancements to eliminate the source of fear, such as neural implants that allow soldiers to control weapons remotely, such regard and rewards will seem misplaced. If one does not experience fear, it makes no sense to reward one for displays of courage.¹⁰ While enhancing soldier survivability and lethality always makes moral sense, enhancing it to the point of near-invulnerability (or even the perception of invulnerability) will profoundly alter the warrior identity. Soldiers who experience neither risk nor sacrifice are not really soldiers as we conceive of them now and are likely better thought of as technicians than warriors.¹¹ The concern here, however, is that before we can address these concerns, we first have to address role moral autonomy plays in determining the permissibility of enhancements as defined here.

Moral Autonomy and Enhancement for Military Purposes.

The story of stimulant use in the German Army underscores the central moral concern when it comes to enhancing soldier performance, especially for those in combat. Offering such an enhancement can force the soldier to choose between an increased likelihood of survival but with possible long-term and severe side effects and an increased likelihood of death or serious injury later on. Depending on how much soldiers perceive how receiving an enhancement affects the likelihood of these possible outcomes, they have few good reasons not to accept it: as long as the side effects are not lethal or significantly debilitating, suffering

¹⁰ Aristotle, *Nicomachean Ethics*, Terence Irwin, trans, (Indianapolis, IN: Hackett Publishing Company, 1985), 71-76.

¹¹ Nick Bostrom, "Dignity and Enhancement," *Human Dignity and Bioethics: Essays Commissioned by the President's Council on Bioethics*, March 2008, https://bioethicsarchive.georgetown.edu/pcbe/reports/human_dignity/chapter8.html. In this article, Bostrom argues that one can acquire virtues by means of an enhancement as long as accepting the enhancement is a function of one's authentic self. For example, consider two people, one who was born with a calm temperament and one who was not, but has acquired it through disciplined control of her emotions. In this case, we should think the person who has acquired the disposition through choice rather than birth more authentically possesses the virtue. By extension, then, traits one acquires by virtue of enhancement, as long as the enhancement is one's choice and one chooses it in order to acquire the trait, then that trait is more authentically one's own than traits one has acquired by birth. Thus enhancements may not always have the corrosive effect on human dignity as some suggest. However, to the extent that possessing a trait depends on an ability to control one's response to an emotion, like fear, then one can only display the trait when the relevant emotion is present. So enhancements that eliminate or mask relevant emotions would preclude acquisition of the trait. Bostrom does note that the effects of enhancements on human dignity in general is complex and inconsistent. For example, enhancing one's empathy can undermine one's composure if one becomes overwhelmed by the suffering one perceives. So while it may be conceivable that enhancements can aid one in the acquisition of a virtue like courage, it is not clear that doing so would always entail a positive contribution to one's dignity.

them will always “make sense.” Placing someone in such a situation, where they have to choose between the possibilities of death or merely suffering, in effect robs them, to some degree at least, of their autonomy. By constraining their choices to outcomes they would not otherwise choose is very much like Marlon Brando’s *Godfather* making people an “offer they can’t refuse.”

This loss of autonomy is central to the moral dilemma enhancements create. The German philosopher Immanuel Kant argued that the only thing that is good without qualification is the “good will” and that it is thus wrong to interfere with its proper exercise.¹² As he famously states, “Act so that you treat humanity, whether in your own person or in the person of another, always as an end and never a means only.”¹³ Treating persons as ends, and not merely as means, entails respecting their moral autonomy, that is their ability to make choices and consent to the kind of treatment they receive. As Lin explains, “Morality ordinarily requires the possibility of consent: to be autonomous is, at a minimum, to have the capacity to either give or withhold consent to some action.”¹⁴

Unfortunately, as noted above, the act of providing enhancements in a militarized context seems to preclude genuine consent, thus violating Kant’s imperative. Assuming the soldier is fully rational—a condition for the exercise of moral autonomy—what choice does he or she really have but to accept the enhancement? Of course much depends on what the effects actually are. Cost and benefits are, of course, measured against each other and not simply for quantity, but quality as well. Take, for example, efforts by the Defense Advanced Research Projects Agency (DARPA) efforts to allow humans to control robotic systems through a neural interface that connects directly to the brain, even to the point of allowing the human to “feel” what the robot touches.¹⁵ Though currently this research has mostly been applied to aiding amputees control robotic prostheses, this technology could conceivably enable soldiers to control robotic weapon systems remotely, thus limiting their exposure to risk.

The goodness of such an enhancement would seem compelling as it allows the soldier to operate some distance from the combat zone, thus significantly reducing risk. To the extent there are no side effects, there may be no concerns

¹² Immanuel Kant, *Foundations of the Metaphysics of Morals*, Lewis White Beck, trans (Indianapolis, IN: Bobbs-Merrill Educational Publishing Company, 1983) 9-13. See also Bostrom, 85.

¹³ Kant, 47.

¹⁴ Lin, 61.

¹⁵ Defense Advanced Research Projects Agency, “DARPA Helps Paralyzed Man Feel Again Using a Brain-Controlled Robotic Arm”, October 13, 2016, Defense Advanced Research Projects Agency Website, <http://www.darpa.mil/news-events/2016-10-13>. I owe this example to Jason Wesbrook.

regarding autonomy: what rational person would not choose to reduce the chance of dying or being seriously injured for free? In such cases, offering such an enhancement is not morally problematic. As noted before, however, most medical and biological interventions come at a cost. Moreover, these costs may not be entirely known at the time of the intervention. So even when a procedure seems fairly safe, the complexity of the interaction between body and enhancement entails soldiers are almost always taking some risk.

Having said that, it is also not difficult to imagine that the side effects are known and potentially severe. Even then, it would still be rational for the soldier to accept the enhancement. German soldiers knew of the future negative effects of Pervitin but took the pills anyway, since doing so increased their chances of surviving in the present. As one German bomber pilot who participated in the Battle of Britain stated, “One wouldn’t abstain from Pervitin because of a little health scare. Who cares when you are doomed to come down at any moment anyway?”¹⁶ The point here, however, is not that “informed consent,” which features significantly in most accounts of medical ethics, is impossible; rather, it is just that it is irrelevant to the ethics of offering enhancements that increase chances for soldiers’ survival even at the expense of significant, long term side effects.

The question, then, is when, if ever, would it be permissible to override a soldier’s autonomy and offer, much less mandate, an enhancement? In too many cases, “military necessity” has sufficed to convince military officials to suspend rights to informed consent to either research or implement enhancements. In fact, the U.S. government has exposed soldiers and civilians to measures such as mustard gas, radiation, as well as psychotropic drugs—too often without informed consent—in its efforts to better protect them from such threats in time of war.¹⁷ More recently, in addition to ordering more than 600,000 soldiers to PB for off-label use to mitigate the effects of nerve gas exposure, the military also ordered soldiers to take off-label drugs intended to protect against anthrax and mitigate the effect of traumatic brain injury.¹⁸

In this context it is worth asking the question, informed consent to what? Perhaps a soldier would prefer not to receive a particular enhancement; however, soldiers are subjected to a number of conditions and treatments they would prefer not—in the moment at least—to be subject. Put another way, by

¹⁶ Ohler, 114.

¹⁷ Efthimios Parasidis, “Human Enhancement and Experimental Research in the Military,” *Connecticut Law Review*, 44, No. 4, (April 2012), 1123; See also Boyce, 4

¹⁸ Parasidis, 1128.

joining the military, soldiers consent to risk life and limb on behalf of their country and in doing so have not compromised their moral autonomy, despite the fact they would prefer to not lose either life or limb.¹⁹ Moreover, they agree to take part in training that is, itself, also risky. In fact, soldiers may be compelled to receive medical treatment if failure to do so would keep them from their training or other duties, even if there were some risk of side-effects from that treatment.²⁰ It is worth asking then, how is accepting risks associated with restorative medical treatment different from accepting the risk associated with performance enhancement measures. If soldiers consent to risk their lives in the face of an enemy, why then is it not reasonable to subject them to measures that might make them better able to face that enemy?

This rationale is likely compelling for many. It accommodates the utilitarian intuition that not only do such measures benefit soldiers more than it may harm, it also benefits the society they defend by making the military, as a whole, more effective. Moreover, it also seems to accommodate the deontic concern that—at some level at least—respect for persons has been accounted for as soldiers knew—or should have known—that such risks may be called for to defeat an enemy. This latter point could be stronger if it were actually the case that soldiers *explicitly* consented to the possibility of such treatment; however, even then we would not fully address our concerns regarding moral autonomy.

Those concerns begin with the observation that just because soldiers accept some risk, it does not follow they accept any risk. Moreover, in this context, it matters what the source of risk actually is. Assuming just cause, soldiers may be called on to risk their lives and well-being to defeat an enemy that has committed an act of aggression.²¹ Here, however, the enemy is the source of risk and not the soldiers' chain of command. Thus the moral burden for that risk falls on the aggressing enemy. By ordering soldiers to undergo enhancements, however, the chain of command becomes the source of that particular risk.

Of course, the chain of command is the source of risk regarding possible harms associated with training. However, in this case it is worth noting that in

¹⁹ Ross M. Boyce, "Waiver of Consent: The Use of Pyridostigmine Bromide during the Persian Gulf War," *Journal of Military Ethics*, 8, No. 1 (2009), 2.

²⁰ Michael Gross, "Military Medical Ethics: A Review of the Literature and a Call to Arms," *Cambridge Quarterly of Healthcare Ethics*, 22(2013), 92-93.

²¹ From the point of view of consistency, since aggressors bear the moral burden of a war, their actions, even when they conform to the law of armed conflict, are unjust. This point simply entails that aggressing soldiers do not have the same dilemma regarding enhancements as those defending against aggression. Any measures aggressors take to better defeat their enemy is unjust. From a psychological perspective, of course, most soldiers typically accept the justice of their cause so regardless of side would likely experience the enhancement dilemma the same way.

practice there are typically limits on the kinds of training risks commanders should place on soldiers. For example, in the U.S. Army, soldiers must volunteer for training that is especially risky, such as parachute training, before being allowed to take it. If they do not volunteer, they are not subject to any additional risk in training or in combat. If one chooses not to undergo parachute training, one does not have to assume the same risks paratroopers do.

It is also worth pointing out that risk in training is also qualitatively different from that associated with the more problematic enhancements. Harms associated with training are rarely certain. While there are always training accidents, each accident is, in principle, preventable. However, with medical treatment in general, and enhancements in particular, there is typically a known percentage of any population who will be negatively affected. An individual may not know if he or she will be one of those who suffer any side-effects, but commanders would (or at least should) know that some will.²² So, for imposing that risk to be moral, there must be some permission in place that allows for overriding (or at least ignoring) the individual soldier's autonomy or one has to establish conditions where soldier consent is relevant again.

In general, the moral rationale for overriding soldier autonomy, especially in the cases of off-label drug use described above, rests on a combination of military necessity, the fact that these measures benefitted the soldier, the inability to obtain informed consent, and lack of any effective alternatives that could either account for informed consent or a measure that would not require it.²³ Simply put: given the lack of morally preferable alternatives, the benefit of saving soldiers' lives exceeded the costs of potential non-lethal side effects. Moreover, "allowing soldiers to refuse these drugs, which the DoD considered safe and effective, might cause a greater level of battlefield casualties and further burden protected soldiers."²⁴ The difficulty here, of course, is what counts as safe and effective now may not be so later on. For example, after the war, studies found that PB use resulted in cognitive difficulties, widespread pain, skin rashes, respiratory and gastrointestinal problems, and other chronic

²² This point was apparently true for the administration of PB in the Gulf War. See One Hundred and Sixth Congress, Joint Hearing before the Subcommittee on Health and Subcommittee on Oversight and Investigations of the Committee on Veterans Affairs House of Representatives, "Possible Health Effects of Pyridostigmine Bromide on Persian Gulf War Veterans," (Washington, D.C.: U.S. Government Printing Office, November 16, 1999), 5. <https://www.gpo.gov/fdsys/pkg/CHRG-106hhrg62452/pdf/CHRG-106hhrg62452.pdf>. Accessed July 19, 2017.

²³ Lin, Mehlman, Abney, 47. See also Parisidis, 1125.

²⁴ Boyce, 7.

abnormalities.²⁵ What effect these long-term conditions have on quality and length of the lives of those effected could not have been fully taken into account since at the time they were not known.

It is likely impossible to fully resolve concerns regarding moral autonomy and enhancements that offer a greater chance of survival but at the expense of severe side effects. Having said that, it may be possible to describe instances where violations of other person's rights may be permissible while still treating them as an ends and not, as noted above, merely as a means. Arthur Isaak Applbaum argues that in situations when one's action may harm another, it is "fair" to act if out of the population affected, no one is worse off and at least one person is better off.²⁶ To illustrate, he relates Bernard Williams' famous story of Jim, whom an evil captain in the local military has given the choice to kill one of twenty locals the he has detained. If Jim refuses, the captain will kill them all.²⁷

The tension here, much like in the case of enhancements, is that the utilitarian "common sense" conclusion is to kill one. Moreover, from a purely rational point of view, it seems that the locals should want Jim to agree. If the goal of the individual locals is to survive, their chances go from zero to one in twenty if Jim agrees. Thus, from the point of view of the local, much like the enhanced soldier, it always makes sense to choose a chance at life—even a morally or physically compromised one—than certain death. Even after Jim chooses whom to shoot, the victim could still reasonably agree that, given the circumstances, that Jim's act is fair, even if being placed in those circumstances is not.²⁸ Because the circumstances are not fair, however, this rational stance does not count as consent. The locals (in this story) did not agree to detention or to be subject to the possibility of being killed. However, having been placed in that situation, the only seemingly rational thing to *want* is that Jim shoot one.

Shooting one, however, does not mean Jim does the morally correct thing. Jim simply serves as the agent of the evil captain, and while we might

²⁵ Parisidis, 1126. See also Food and Drug Administration, "Protection of Human Subjects; Informed Consent, Exception from General Requirements," Federal Register, Vol. 64, No. 192, October 5, 1999. <https://www.fda.gov/ScienceResearch/SpecialTopics/RunningClinicalTrials/ucm119107.htm>. Accessed July 19, 2017. It is worth noting that that FDA rescinded its permission to forego informed consent when administering PB in 1999, after numerous complaints regarding potential side-effects.

²⁶ Arthur Isaak Applbaum, *Ethics for Adversaries: The Morality of Roles in Public and Professional Life*, (Princeton, NJ: Princeton University Press, 1999), 162-166. Applbaum refers to situations where someone is better off and no one is worse off as "avoiding Pareto-inferior outcomes." Avoiding such outcomes can count as "fair" and warrant overriding consent.

²⁷ Applbaum, 151.

²⁸ This point assumes that the selection process itself was "fair" at least from the standpoint of the locals.

understand Jim's reasons, he still has violated the rights of whomever he shoots. The problem here, put simply, is that utility, as well as its corollary, military necessity, take only into account the circumstances one is in and make no room for other moral commitments. Because they make no room for other moral commitments, they rule out no particular kinds of acts.²⁹ Moreover, such reasoning places one in the position of jettisoning the very moral commitments that typically justify fighting in the first place, namely the universal rights to life and liberty.³⁰

Applbaum's point here, however, is that one can make a commitment to fairness that accounts for respect for persons while at the same time allowing circumstances where it may be permissible, even *fair*, to act in a way to which someone does not consent. As he notes, "If a general principle sometimes is to a person's advantage and never is to that person's disadvantage, then actors who are guided by that principle can be understood to act for the sake of that person."³¹ In Jim's case, for example, none of the locals are worse off if he kills one and the remaining nineteen are better off. To the extent Jim distributes the risk of being shot equally, each local would reasonably, if not rationally, choose that Jim shoot one.³² So rather than understanding his act simply as maximizing the utility of a given population, it is better to understand the choice to shoot the one as acting fairly, since given the circumstances he is placing most at an advantage and no one at a disadvantage.

Regarding enhancements, this point suggests that defensive enhancements are more likely to pass this test than offensive ones. Given that defensive enhancements are a response to a capability the enemy has, then in general no one is worse off and some might be better off for receiving it. This point, of course, assumes that everyone has equal exposure to risk. In the case of PB, for example, given that nerve gas can be delivered by long range missiles and artillery, anyone within range of those systems could be vulnerable, thus everyone would benefit from the drug and no one would be worse off. However,

²⁹ Michael Walzer, "Political Action: the Problem of Dirty Hands," War and Moral Responsibility, Marshall Cohen, Thomas Nagel, and Thomas Scanlon, eds. (Princeton, NJ: Princeton University Press, 1974), 70.

³⁰ Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations*, (New York: Basic Books, 1977), 53-55.

³¹ Applbaum, 151.

³² Applbaum, 163-164. The account of rationality I employ here assumes survival as the highest goal. That may not always be the case. Applbaum acknowledges the point made by Christine Korsgaard who argued that the "right" choice can depend on other factors besides survival. The locals, for instance, could be committed pacifists and not want Jim to participate in the evil captain's scheme. In that case, it may not be fair for Jim to decide to shoot the one.

that would only be the case if everyone actually experienced a nerve gas attack. In fact, as things turned out, the Iraqis never did use such weapons. So no one benefitted from its use and some people, given the reported side effects, were worse off.

However, this objection does miss the point regarding the nature of combat. Combat occurs unevenly and, regardless of the intensity of the conflict, some will experience contact with the enemy and some will not. Moreover, even among those who do, the danger that enemy contact represents will always—and uncontrollably—be inconsistent. Thus, soldiers, much like the local Jim chooses at random to shoot, cannot know before they have to choose whether they will be affected or not. This situation is not unlike John Rawls’ “veil of ignorance,” where persons choose what institutions to live under and what rules to live by without knowing their particular position in that society. Under the “veil” persons would rationally choose institutions and rules that benefitted the most people.³³ This rationality is due, in part, because goods and harms are, conceptually at least, evenly distributed. If one does not know one’s lot in life, one does not know what sort of arrangements, like income tax rate, will be to one’s advantage or not. In the nerve agent case, then, the reasonable thing to do is treat the likelihood of experiencing an attack as equal and then ask the question who is better off and who is not with the enhancement. The answer will likely be, given that one has the same chance of experiencing a nerve gas attack as anyone else in one’s situation and given that in the event of an attack it is better to have taken the PB, then all things being equal, it is rational to require everyone to take the PB.³⁴ Doing so, as Applbaum notes, is a way of respecting persons since, again all things being equal, in the event of an attack that is what a rational person would have chosen.

This notion of fairness, however, does not seem to work as well with offensive enhancements. Given the logic of military necessity, it just makes sense to commit one’s most survivable and lethal systems to battle since they stand the best chance to defeat the enemy. Thus it seems reasonable to expect that those who have offensive enhancements will more likely be committed to direct combat than those who do not. While it is possible that these enhancements will offset some of that risk, statistically speaking, repeated exposure to danger ensures at some point one will be harmed. This point means

³³ John Rawls, *A Theory of Justice* (Cambridge, MA: The Belknap Press, 1971), 136-142.

³⁴ “All things being equal,” in this context, means that the other conditions articulated earlier also hold: military necessity, safety of the enhancement, benefit to the soldier, the inability to obtain informed consent, and lack of any effective alternatives. It is worth noting, as cited earlier, that the side effects of PB use exceeded what was expected based on previous use of the drug.

that by accepting offensive enhancements, soldiers could be worse off than those who do not accept them. Not only are they likely to experience increased risk, they will also have to deal with whatever side effects the enhancements entail.

The point here is not that offensive enhancements may not ever be permitted. Recall that the horns of this dilemma rest on the assumption that soldiers who refuse the enhancement will be committed to battle anyway and experience the same risks as soldiers who did accept it. The way out then is to alleviate the conditions that compromised the soldier's autonomy in the first place. Doing so requires meeting three conditions: 1) soldiers must have the option to consent to the enhancement; 2) their consent must be informed; and 3) if they do not consent, they will not be required to accept as much risk as enhanced soldiers. When it comes to offensive enhancements, enhanced soldiers must be genuine volunteers.

Conclusion

Human enhancement, even apart from war, is morally problematic. In the civil context, where enhancements are typically intended to enhance quality of life, they still raise concerns about autonomy, equality, safety, social stability, and human dignity. The logic of enhancements in civil society, however, suggests little reason to bear much risk or cost in their acquisition. If the purpose of an enhancement is to improve quality of life, then it makes little sense to tolerate much suffering for oneself or society. The logic of military applications, on the other hand, amplify these concerns and turn some on their heads. Because the purpose of military enhancements is to increase lethality and survivability, it does make sense to accept a fair amount of inequality, suffering, social disruption, and isolation. As a result policies regarding the norms of enhancement acquisition are going to look very different in civil and military contexts.

In the civil context, autonomy concerns address what permissions should govern who may get an enhancement. In the military context, however, autonomy concerns are reversed and address rules about who must accept an enhancement. Determining who must entails establishing an account of fairness that permits overriding individual consent in favor of the greater good. In such an account, the character of the enhancement—defensive or offensive—will matter. Regarding defensive enhancements, overriding individual consent may be permissible, all other things being equal, if someone is better off and no one

is worse off. Offensive enhancements are a different matter. Because offensive enhancements can place recipients in a position of greater risk, whether from increased exposure to the enemy or as a result of possible side-effects, those recipients could be worse off than non-recipients. Moreover, as is the case with enhancements in general, even the offer can be coercive, to the extent it forces the soldier to tradeoff between death and suffering. The only way to maintain a standard of fairness in this context, then, is not only to require informed consent but also ensure no increased risk if the soldier refuses.

Establishing fairness or restoring the relevancy of consent are, of course, only necessary conditions. As not discussed, enhancements also need to be necessary and proportional. They should be necessary in that the enhancement not only conveys an advantage but also avoids a disadvantage as well. This standard of necessity is somewhat higher than that normally associated with military necessity, which only requires an advantage. However, given the potential harms associated with enhancements, if one can win the war without enhancements, one should. The effects of any enhancements should also be proportional, in that the aggregate harm to autonomy, health and safety, society, dignity are outweighed by the additional security and resilience the enhancement brings.

Taken together, the real risk of enhancements may be in how their application will affect the soldier and thus the military profession's relationship with the larger society it serves. Changing the nature of the soldier changes the military and changes in the military can have profound impacts on society. The point here is not to avoid enhancements. The rapid pace of technological development, especially in the context of international competition, assures that enhancements will be a part of future military acquisitions. Thus the point is that policies regarding the ethics of enhancements will also constantly evolve and thus policy makers will require constant attention to the moral categories associated with their development and implement

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