



Science wars—How much risk should soldiers be exposed to in military experimentation?

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ABSTRACT

With the threat of biological war becoming a more and more distinct possibility, there is a growing need for vaccines and cures for diseases. As warfare moves from the battlefield to the laboratory, the military must adapt its tactics in order to preserve national security. At the moment, soldiers consent to the risk associated with combat, but with the changing nature of war, the need may arise for soldiers to put themselves at risk not only through combat, but also through scientific experimentation, in order to produce vaccines or cures and ultimately maintain national security. By allowing soldiers to trade risk on the battlefield with risk in the laboratory, deeper research can be made into diseases and biological agents, and this would therefore lessen the threat of biological war or terrorism.

KEYWORDS: Genomics, military ethics, bioethics, genetic testing, coercion and consent

Imagine that we are 15 years into the future. Terrorism has moved from ‘things that go bang’ to the use of highly sophisticated technology such as the internet and biological weapons. Terrorists can now use readily accessible DNA technology to create novel or modified viruses and unleash them at multiple sites at once, as is depicted by the film *Twelve Monkeys* (though in that case it was a psychopathic scientist with a high security clearance).

These terrorists have created a genetically modified strain of Ebola that is spread by respiratory droplets. It is as infectious as flu, though with an 80 per cent lethality. They release this at 15 crowded airports, shopping malls, and sports stadiums in the USA.

Within weeks, hundreds of thousands have died. It is projected it could wipe out 90 per cent of the US population.

This is not a war for soldiers—it is a war for scientists. The race is on to find a cure or a vaccine. Human subjects are required. But in this war, soldiers could play a role—as participants in experiments of very high risk to develop cures or vaccines. Should soldiers be used in this kind of research and what level of risk should soldiers be exposed to in order to protect national security?

My argument is simple.

Premise 1. Soldiers legitimately consent to lethal risk as a part of combat and occupation.

Premise 2. War involves both physical violence and biological threat to national security.

Conclusion. Soldiers can legitimately consent to lethal risk research into biological threat to national security.

Premise 2 is central. There is no morally relevant difference between a bullet sent intentionally to kill and a virus sent intentionally to kill. Both are lethal weapons. Defense against these threats is a part of the role of the military. The person most directly in the line of this threat, acting under command, is the soldier.

In an insightful paper, Mehlman and Li argue that the traditional civilian ethical principles that govern the research use and application of genomic technology are insufficient to regulate military uses. They argue that the values of military life are different to civilian life.¹ Citing Anthony Hartle's *Moral Issues in Military Decision Making*, they agree with Hartle that “freedom, equality, individualism, and democracy” are the “core American [civilian] values”. But for the military they are “honor”, “duty”, and “country”.²

They embrace the possibility that military participants could be exposed to greater risk in research than civilian participants:

The focus on the welfare of the individual patient in the clinical application of the civilian principle of beneficence, which stands in sharp contrast to the military value of selflessness, should be replaced in the military by the principle of *proportionality*. According to the principle of proportionality, a biomedical risk can be imposed on a warfighter only when there is no less risky alternative to accomplish a legitimate military objective, and the nature and degree of the risk are outweighed by the military advantage sought to be gained. In view of the lack of individual autonomy in the military, it also makes sense to downplay the civilian emphasis on voluntary choice reflected in the principle of ‘respect for persons’ by substituting instead the principle of *paternalism*.³

Mehlman and Li do believe that consent should still be sought from soldiers. Indeed, it is a part of US Department of Defense policy to require consent. However, they question whether consent can be voluntary for a variety of reasons. One of them is:

¹ Maxwell J. Mehlman & Tracy Y. Li, *Ethical, Legal, Social, and Policy Issues in the Use of Genomic Technology by the US Military*, *J.LAW BIOSCI.* 1(3): 244–280 (2014), DOI:10.1093/jlb/lsu021.

² *Id.* at 251.

³ *Id.* at 251–252.

'Warfighters may also feel that it is their patriotic duty to participate in research, a notion that some commentators are pushing in the civilian sector'.⁴

They go on to cite Schaefer and colleagues as pushing this concept of duty to participate in the civilian sector.⁵ I have elsewhere supported such an obligation to conduct research.⁶ I have argued (sketchily) that there is a duty to participate in the military sector.

One small point. Paternalism involves acting in a person's interests. Exposing soldiers to 'biomedical risks' is never in their interests—it is in the State's interests. The requirement of ethics committees is to ensure that risk is reasonable, but we should be clear that such research is not in the soldier's interests any more than active combat is. Mehlman and Li are right that such a risk should be proportional to the threat—I have called this 'reasonable risk'^{7,8} in the civilian context and placed various limits on it.

Since the threats which can be faced in times of war are lethal, lethal risk research would be proportionate. That is, research which could pose an equivalent risk to active combat.

Mehlman and Li argue for oversight of this principle of proportionality in biomedical risk:

Given the limits on war fighter autonomy, the need for paternalism in the military is more pronounced, however, and ensuring proportionality must be viewed as the primary responsibility of research directors, institutional review boards, and subjects' commanders rather than the subjects themselves. To that end, DoD rules require the appointment of an 'ombudsman' and a 'research monitor' (who may be the same person) to oversee the informed consent process when the research presents more than minimal risk (and, in the case of an ombudsman, when the recruitment of subjects takes place in a 'group setting').⁹

The primary job of IRB is to ensure that risk is reasonable. In the case of military experimentation, it will be to ensure that the risk is minimized and proportionate to the threat. Clearly the threat will be greater when an agent has been released, as in the introductory example, than when such a threat is theoretical.

Such an approach is not new. Mehlman and Li note: 2300 Seventh-Day Adventist Church conscientious objectors between 1954 and 1973 participated in 137 protocols to develop vaccines and treatments for Q fever, tuleremia, various viral encephalitides, Rift Valley fever virus, sand fly fever and plague.¹⁰

What I am proposing is that soldiers could in principle be subjected to risks greater than in such previous experiments, if the threats were sufficient. Mehlman and Li are

⁴ *Id.* at 256.

⁵ G. O. Schaefer et al., *The Obligation to Participate in Biomedical Research*, 302 JAMA 67 (2009).

⁶ Julian Savulescu, *Bioethics: Why Philosophy is Essential for Progress*, 41 J. Med. Ethics 28, 33 (2015).

⁷ Julian Savulescu & Tony Hope, *Ethics of Research*, in *THE ROUTLEDGE COMPANION TO ETHICS* 781 (John Skorupski, ed., 2010). See <http://www.amazon.co.uk/Routledge-Companion-Ethics-Philosophy-Companions/dp/0415415160>

⁸ Julian Savulescu, *Safety of Participants of Non-Therapeutic Research Must be Ensured*, 316 Brit. Med. J. 891, 892 (1998).

⁹ Mehlman and Li, *supra* note 1, at 256–257.

¹⁰ Mehlman and Li, *supra* note 1, at 257.

unclear on just how great a biomedical risk they believe soldiers can be exposed to, though I believe my argument is consistent with theirs. They write:

Balancing research risks and benefits in the military raises certain questions, however. Warfighters may be subjected to grave personal risks in order to achieve a military objective; as Bill Rhodes, president of the International Society for Military Ethics, states, 'a military member is expected to serve the state unto maiming, capture, or death.' Accordingly, a research risk that would be deemed excessive for civilian subjects, such as a significant likelihood of serious harm in a study intended to produce knowledge to benefit others but with no direct benefit to the subjects, might be deemed acceptable for military subjects, under the principle of proportionality if the military objectives were sufficiently important. In other words, while the risks might be greater than for civilians, so might be the corresponding benefits to the unit, mission, or country. Along this line, military subjects ought to be allowed to participate in studies intended to produce information of special relevance to the military, such as tests of genomic interventions to treat PTSD, that posed greater risks than studies aimed at developing genomic interventions of no special value to the military.¹¹

I believe far riskier interventions than to treat PTSD could be proportionate. At the time of the Ebola attack of my original example, Ebola challenge studies of a promising vaccine could be justified within the military, according to the argument I have given.

However, our ideas on legitimate exposure to biomedical risk differ on two points.

Firstly, Mehlman and Li believe consent should continue to be obtained, though they are skeptical about whether it can be valid. I believe that it should not.

I agree with Mehlman and Li that there are problems of informed consent to research in the military. But this need not be dealt with by increased paternalism (their suggestion), but by ensuring valid consent at enlistment to the risk in war and research. Prospective enlistees may not realize that war involves biological threat and that service includes service to scientific research to address these threats. These parts of the role should be disclosed and the extent and nature of risk explained.

Soldiers don't consent to be sent to combat, so nor should their consent be sought to equivalent risk arising from research necessary to address threats to national security. Consent rather should be sought prior to enlistment. But being a soldier involves giving up substantial freedom and autonomy. Michael¹² makes a similar point about the role of the soldier. Mehlman and Li argue that Gross' point applies only in wartime but that their principle of proportionality 'applies in all phases of military life'.¹³

Secondly, Mehlman and Li note (and appear to support the principle) that soldiers should not be eligible for financial compensation under the *Feres* doctrine.¹⁴ I have argued previously that civilians should be compensated for risk in research, even high-risk research¹⁵ and the same points apply to soldiers.

Soldiers are already compensated for risk in active service through salary. If the risks of future biological war and threat expose them to higher risks of death, they

¹¹ Mehlman and Li, *supra* note 1, at 257.

¹² MICHAEL GROSS, *BIOETHICS AND ARMED CONFLICT: MORAL DILEMMAS OF MEDICINE AND WAR* (2006).

¹³ Mehlman and Li, *supra* note 1, at 253.

¹⁴ Mehlman and Li, *supra* note 1, at 264.

¹⁵ Julian Savulescu, *Taking the Plunge*, 2280 *NEW SCIENTIST*, 50 (2001).

should be appropriately compensated and that risk disclosed at time of enlistment. In a non-conscripted army, service to your country is a job and it should be appropriately remunerated.

Soldiers already consent to take part in a lethal occupation. To protect soldiers against excessive risk, they could be allowed to trade risk on the field for risk in the laboratory, keeping total risk stable. That is, they could be granted leave from field duty to take part in similarly risky research, as conscientious objectors, as the Seventh-Day Adventists described by Mehlman and Li were allowed to do. For example, if the risk of death of a combat soldier is $1/n$, they could have combat reduced to pose a risk of $1/2n$, and take part in research with a $1/2n$ risk of killing them.

Allowing high-risk research within the military would facilitate society conducting riskier research, such as challenge studies. This would be of public interest if such research were for good rather than evil purposes, such as preventing and treating disease (and valid enhancement purposes), or defensive purposes. It would not be justified to develop more lethal offensive weapons. Importantly, the results of such research should be passed onto civilian society, if it does not compromise national security.

One difficult issue facing military ethics will be when to divulge the beneficial results of military research. Say the military develops a vaccine for Ebola under credible evidence that terrorist groups are developing a highly infectious strain. Releasing such results could provide information enabling the creation of a vaccine-resistant strain. Such a vaccine could do great good now but even greater good in the face of a terrorist bioattack.

Such decisions should be made on a case-by-case basis, evaluating the extent of the threat, the extent of the good that could be done now, the ability of the military to respond to a modified threat, etc. Indeed, what is required is some higher level combined military-civilian ethics oversight process to evaluate when such results should be used and how.

I believe war will change. The concept and role of a soldier should also change. Mehlman and Li provide an invaluable first pass at how military ethics is different to civilian ethics and how it should be adapted to address advances in genetics. I have tried to extend their ideas to more concretely ask what level of risk can soldiers be exposed to in the course of scientific research to protect national security. The answer is a lot. This risk should be addressed at enlistment. It should also be reasonable, with oversight by independent ethics review. Soldiers should also be compensated for risk at much higher levels than they are at present. Such research could have an enormous civilian spin-off benefit. It would not only protect national security, it could also provide cures and vaccines for the most deadly biological threats humans face. There should be an obligation on the military to pass on such results for civilian benefit, as well as to the soldiers who participate. Soldiers can not only serve their country in fighting war, but also in fighting disease. Not only might the military provide the internet, laser, radar and ultrasound, but they might also be responsible for the cures to lethal infectious diseases.

Such an argument could be radically extended outside of threat to national security. I have argued that soldiers should participate in high-risk research when there is a threat to national security posed by some state or non-state actors. But one might legitimately ask what the moral difference is between a threat from a human being's intention and unintentional but foreseeable threat from disease, either resulting from human or non-

human behavior? We have had a ‘war on cancer’ and we could have a ‘war on disease’. Of course the threat that disease and aging pose are vastly greater than those of war. We will all certainly (100 per cent) die of disease and/or aging, if something else doesn’t kill us first.

I have argued that we need a war on aging.¹⁶ If indeed the greatest threats we face are biological in the form of disease and aging, perhaps we should embrace much higher risk research than we do now. It would no longer be the role of the soldier to non-consensually participate in such high-risk research into common human diseases and aging. But we could pay people, and pay them a lot (See footnote 7) to perform this *invaluable* role. Perhaps it is time to change our civilian ethics, as well as our military ethics.

¹⁶ Julian Savulescu, Aubrey de Grey & Nick Bostrom, *The War Against Ageing*, ABC: THE DRUM (2009), <http://www.abc.net.au/news/2009-02-17/38100> (accessed Jan. 12, 2015).