Introduction
William G. Braun III, Stéfanie von Hlatky, Kim Richard Nossal

Each year, partners from academia and the military join efforts to organize the Kingston Conference on International Security (KCIS). This conference is meant to inform debate and advance knowledge in the field of security and defence, by identifying priorities in military affairs and convening world-class experts to engage with a series of common questions. The partners — the Centre for International and Defence Policy at Queen’s University, the Strategic Studies Institute of the U.S. Army War College, the Canadian Army Doctrine and Training Centre, and the NATO Defense College — work together to develop a multifaceted program for what has become one of the leading international security conference in North America.

In 2017, KCIS examined an issue of growing importance in contemporary military policy: how best to advance soldier performance to maintain a competitive advantage in the contemporary battlespace. Achieving successful outcomes in operations relies not only on sound military strategy and weapons, but also depends heavily on individual service members performing effectively across multidimensional roles. In the future, senior military leaders and defence officials will strive to develop what might be called “super soldiers” — in other words, developing and enhancing critical skills, from physical and cognitive abilities, to social, cultural and ethical understanding of the environment in which soldiers operate. The conference focused on how we might anticipate individual soldier enhancements required to maintain a competitive edge at the individual level of performance, pushing existing physical, cognitive, moral and social boundaries to ensure unity of purpose, optimal physical and cognitive performance, resilience, and ethically applied fighting spirit. We know from recent scientific work that new technology can be used to push physical limits, but pushing the physical limits of members of the armed forces can be challenging. Most importantly, the conference focused on how the armed forces can balance military effectiveness with a stated commitment to reflect society’s values and norms. A focus on technology often comes at the expense of considering abilities beyond those that are physical. Policy makers need to focus on all facets of the soldier: the physical, psychological, emotional, cultural, and social. Each facet presenting unique ethical and cultural challenges for consideration.

Eight papers from the conference are reproduced here. The first three chapters focus on key elements of enhancing soldier performance: social cohesion, achieving cognitive dominance, and enhancing resilience.

Hans Christian Breede’s chapter explores the impact of soldier performance enhancement on social cohesion, particularly the defence and security implications of human performance enhancement applied to armed forces, and outlines the policies that need to be in place to ensure that soldiers, while receiving every advantage to fight and win on the battlefield, do not sacrifice the ability to not be a soldier when the fighting is over. Noting that soldier enhancement already strains the connection between soldiers and society, Dr. Breede worries that human performance enhancement (HPE) initiatives may have not only negative impacts on soldiers themselves, but also on society once the “enhanced” soldier returns to society. Focusing on Canada and the United States, he examines the various options for the implementation of HPE, and concludes that a one-size-fits-all implementation policy will not suffice. Rather, it should be the mission-set that determines what form the enhancement should take.

Jean Vettel and her colleagues at the U.S. Army Research Laboratory approach human performance enhancement from a different perspective. They focus on the likely transformation of burdens on soldiers, arguing that the physical burdens will soon be replaced by an immense cognitive burden. Their chapter
discusses the importance of ensuring that enhancement technology must be adapted to individual soldiers and their needs, rather than trying to adapt humans to technology. Dr. Vettel and her colleagues argue that the changes in a human being’s neural networks suggests that soldier performance in the cognitive space can be optimized through repetitive task-specific training, and propose that the key will be to measure physiological signals from the brain network of an individual soldier that will be able to determine what kind of assistance that soldier needs to enhance capacity.

Psychological resilience — the capacity of individuals to tolerate adversity, or the process of adapting to or dealing with adversity — is a key element of human performance enhancement. James P. Picano examines prominent psychological methods used to select military personnel for high-risk, high-stress, non-routine missions. He concludes that resilience is in fact a highly limited resource for military personnel, and can easily be depleted. High operational tempo or poor leadership can sap resilience, as can ignoring those factors that sustain resilience, such as adequate sleep, exercise, rest and replenishment. Paying attention to those factors that sustain resilience is as crucial as external factors such as social support and cohesion.

When we enhance the soldier, we change the soldier; this alters the military, which in turn invariably changes the society served by the armed forces. Human performance enhancement in the military raises a number of ethical issues. It raises issues of fairness and equity: who will receive enhancements? It raises questions of health and safety: will augmented and non-augmented military personnel pose a burden on society? And it raises the possibility of social disruption: what unanticipated human consequences may enhancement produce? Three chapters examine the ethical concerns and implications of developing the super soldier.

First, Charles A. Pfaff examines the ethical implications of the use of medical technology to alter the human body and mind to increase soldier capability. In his view, the ethical complexity of augmentation can be readily seen by asking what the purpose of augmentation is: is it for enhancement — the achievement of an unnatural potential — or is it for optimization — using one’s full potential? Is augmentation to be embraced for offensive or for defensive purposes? In addition, enhancement has implications for the individual. In his view, for enhancements to be moral, a number of moral issues need to be addressed. For example, there need to be rules about consent: the soldier who is receiving the enhancement must consent, a deep problem in an organization built on assumptions of the limited autonomy of the soldier. Enhancement needs to grapple with the problem of necessity and proportionality. In short, as the technologies of enhancement develop, the ethics of soldier enhancement must also evolve and policy makers in particular need to pay attention to the ethical implications of this evolving technology.

Like Dr. Pfaff, Jesse Kirkpatrick argues that enhancements will inevitably change the fighter, the military, and society, pointing out, for example, that enhancement may contest the identity of the soldier, challenge the core values of the military, and alter the concept of war. However, unlike Dr. Pfaff — who viewed enhancement as the achievement of a naturally unattainable goal — Dr. Kirkpatrick defines enhancement as a method of self-amelioration, focusing specifically on the ethics of bio-enhancement vis-à-vis soldier virtue. While the super soldier is typically viewed as a super killer, Dr. Kirkpatrick challenges that assumption and asks us to consider enhancement in the moral sphere. That is, can soldier enhancement be used to heighten a soldier’s composure or increase his/her expression of sympathy? Bio-enhancement can be viewed as a shortcut to acquiring admirable traits of character, and that achievements should be made through natural dedication and hard work. This can have an impact on the relationship between those who are enhanced and those who are not.

We often consider the responsibility soldiers and the military have to their society. Much less talked about is the responsibility society has to its military, which is exactly what Steven Kornguth addresses in his
chapter. As a society, we have a responsibility to ensure that soldiers are not harmed intentionally or through ignorance, and to ensure that the mental and physical wellness of its military personnel from the time of accession to a normalized old age should be preserved. One message that permeated the conference was the need to consider the soldier in his/her own right, and Dr. Kornguth echoes this sentiment in his chapter: the needs of the soldier are not synonymous with the needs of the group. Like Dr. Pfaff, Dr. Kornguth also questions the veracity of informed consent in the military for two main reasons. First, since future implications and consequences are not clear, it is difficult to imagine that soldiers can provide informed consent, which can only take place with knowledge and understanding of potential adverse future outcomes. Moreover, soldiers in the military are necessarily subject to higher authority, a given that is incompatible with informed consent. He also identifies three concerns about enhancement: when physical or structural modifications to healthy humans results in long-term non-reversible changes; when long-term cognitive, psychological, or behavioral changes are induced by physical modifications; and when long-term adverse consequences occur from the modifications experienced by the soldier from army directives. The ethical use of augmentation, he argues, involves a cost-benefit analysis.

Jason Dozois, a narrative director and writer with Eidos-Montréal, a video gaming firm, was one of the keynote speakers at KCIS 2018. He describes himself as the conference’s “video game guy,” and in his keynote address he provided a perspective on soldier performance enhancement from the gaming industry. His most recent game project, “Deus Ex: Mankind Divided,” gives players the opportunity for social interaction, moral decisionmaking, and negotiation. Set in a dystopian future world, the game pivots around terrorism and transhumanism. The aim is to stop an upcoming terrorist attack, with the main character an augmented individual. The game is unique because the gameplay is not all violent and can be won without anyone being killed. His chapter in this volume takes the analysis further, suggesting that the game highlights real-world considerations in war relating to perceptions and narratives. The “us versus them” story between the natural and augmented populations highlights the human tendency to gravitate to tribalism in times of stress. Mr. Dozois’s chapter speaks to the idea of micro-tribes and the danger of having an overly niched and therefore split society. In his view, the war of power over the narrative is the war of the twenty-first century. As he put it, software simulations that are well developed, implemented, and tested will help the super soldier learn the culture of tomorrow’s military, not only in mind and body, but also in spirit.

We conclude with a reflection on the future of human performance enhancement in the armed forces. Ryan Anderson, a researcher with the Centre for International and Defence Policy, argues that replacing the usual military mantra of “mission first, people always” with a new mantra, “people first, mission always,” would serve to prioritize the individual in the decision-making process. He argues that the current posture on human enhancement falls short in two ways. First, it overstates the effectiveness of physical and cognitive enhancements by portraying technology as the best and only way to achieve more desirable outcomes in military operations. Continuing down this path not only misrepresents the factors that will lead to effective and sustainable outcomes in contemporary warfare, but also significantly overlooks the cultural, social, ethical, and policy implications that human performance enhancement entails.

Second, both civilian policy makers and military leaders have to consider the various ethical and practical challenges posed by the application of physical and cognitive performance enhancement. Ignoring these challenges risks not only the outcomes of military operations, but the well-being of service members themselves. In short, we need to think more holistically about the future of human performance enhancement, the cultural, psychological and ethical implications that need to be further explored before we fully embrace the notion of the super soldier.

* * *
Envoi

The chapters in this volume capture the central themes of each of the panels at KCIS 2017, while providing deeper context and a richer exploration of the data and analysis. If the papers in this volume have sparked an interest, consider viewing the remainder of the presentations—they are available on the Kingston Conference on International Security website at http://www.queensu.ca/kcis/home.

While you are there, have a look at the 2018 Kingston Conference on International Security agenda. We look forward to national security stakeholders and critical thinkers joining us at next year’s conference entitled, “The Return of Deterrence: Credibility and Capability in a New Era.” At the 2018 conference we will look at the return of deterrence in global politics, examining how to balance capabilities and political commitments in a way that maintains a credible defence posture in the contemporary era. This conference will take place 11–13 June 2018 in Kingston. Look for our conference report, panel videos, and compilation of papers following this important event.