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Guest Editorial

National security in the era of neuroscience

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It is a privilege to provide an editorial commentary to this issue of *Synesis* - that addresses the topic of neuroscience and neurotechnology in national security and defense. My own interest in the relationship between ethics, neuroscience and national defense began several years after the publication of *Undue Risk* (1), a study of the history and ethics of human experiments for national security purposes. By then the excitement about the potential of the new neuroscience, powered especially by imaging technologies, had resulted in some public discussions of the social implications of emerging brain science. What struck me when I attended the academic meetings about "neuroethics" was the lack of connection to the national security environment. Surely there must be great interest in the applications of brain research among those responsible for national defense and counterintelligence, and surely they would raise important policy questions.

While I was pondering these questions the Dana Press, part of the Dana Foundation, asked me if I was interested in publishing a book on the subject. The source of the invitation was especially intriguing, because the Foundation is a sponsor of much neuroscience education and research. As I began work on the book it quickly became clear that some of the same challenges I faced in writing about the history and ethics of national security human experiments would apply to this new project. Among those challenges were some tough decisions about which topics fall precisely within the ambit of neuroscience, and the need to reckon with the abundant conspiracy theories about clandestine experimental manipulations by government agencies. By contrast, although many outside the defense intelligence assume that everything that might be interesting is "secret," that proved not to be true, since pretty much any science likely to be of national security interest is either explicit or implicit in the open literature. The book was published as *Mind Wars: Brain Research and National Defense* (2). In *Mind Wars* I argued that national security needs are sure to be at the cutting edge of neuroscience, both in terms of research for warfighting and intelligence and, over the long term, the introduction of new neurotechnologies in society. I also asserted that the encounter between national security and neuroscience will provide much fodder for the growing group of neuroethics scholars, and that these developments can most fruitfully be seen in historical context. In that spirit it is worth revisiting such cases as the Central Intelligence Agency and US Army LSD experiments of the 1950s and 1960s. Those projects were motivated by a number of concerns and goals, including interest in hallucinogens as a problem in counter-intelligence (e.g., the fear that they could be used as a "truth serum" with a kidnapped US nuclear scientist), and as a potential disruptor of combat units.

Another intriguing lesson of the LSD experience that might also apply to modern neuroscience was its unintended cultural consequences as the drug that came to symbolize a decidedly anti-establishment lifestyle. As we seem to be on the threshold of a new era of provocative, "enhancing" pharmacologics, more granular neuroscans, implantable devices and other brain-related innovations, national security interest in neuroscience will surely be taken to a new level, leading as well to remarkable problems in ethics and public policy. As in the past, one may expect that there will be unanticipated social consequences of the embrace of new and more powerful neuroscience by organizations responsible for counter-intelligence.

Some measure of the increasing awareness of the social implications can be derived from the fact that the National Academies have engaged in at least three projects

directly related to neuroscience research policy since 2007 that were conducted under contract with national security agencies. The report "Emerging Cognitive Neuroscience and Related Technologies" was released in August 2008 for the Defense Intelligence Agency (3). "Opportunities in Neuroscience for Future Army Applications" was published in May 2009 and conducted for the US Army (4). In addition, the Committee on Field Evaluation of Behavioral and Cognitive Sciences-Based Methods and Tools for Intelligence and Counter-Intelligence planned and hosted a public workshop in September 2009, at the request of the Defense Intelligence Agency and the Office of the Director of National Intelligence. I was a member of the first and third of these committees. Other Academies panels are also actively interested in neuroscience and security-related questions.

International interest in the topic is also growing rapidly. Based on my personal experience alone, British, Dutch, German and Japanese scholars and government officials or advisers are following these matters. Clearly we are part of an international discussion that is only beginning, and to which this volume is an important contribution; I commend the editors, Drs. Giordano and Forsythe for their efforts, and each and all of the contributing authors both for their fine papers, and their ongoing work in the field

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Competing interests

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