



Mind Wars: Brain Research and National Defense

By Jonathan D. Moreno

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In his fascinating new book, Jonathan D. Moreno investigates the deeply intertwined worlds of cutting-edge brain science, U.S. defense agencies, and a volatile geopolitical landscape where a nation's weaponry must go far beyond bombs and men. The first-ever exploration of the connections between national security and brain research, *Mind Wars: Brain Research and National Defense* reveals how many questions crowd this gray intersection of science and government and urges us to begin to answer them.

From neuropharmacology to neural imaging to brain-machine interface devices that relay images and sounds between human brains and machines, Moreno shows how national security entities seek to harness the human nervous system in a multitude of ways as a potent weapon against the enemy soldier. Moreno charts such projects as monkeys moving robotic arms with their minds, technology to read the brain's thought patterns at a distance, the development of "anti-sleep" drugs to enhance soldiers' battle performance and others to dampen their emotional reactions to the violence, and advances that could open the door to "neuroweapons"—virus-transported molecules to addle the brain.

"As new kinds of weapons are added to the arsenal already at the disposal of fallible human leaders," Moreno writes, "we need to find new ways to address the problem"—of the ethical military application of so powerful and intimate a science. This book is the first step in confronting the quandaries inherent in this partnership of government and neuroscience, serves as a compelling wake-up call for scientists and citizens, and suggests that, with imagination, we might meet the needs of both security and civil liberty.

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Editorial Review

From Publishers Weekly

Imagine a future conflict in which one side can scan from a distance the brains of soldiers on the other side and learn what they may be planning or whether they are confident or fearful. In a crisply written book, University of Virginia ethicist Moreno notes that military contractors have been researching this possibility, as well as the use of electrodes embedded in soldiers' and pilots' brains to enhance their fighting ability. Moreno (*Is There an Ethicist in the House?*) details the Pentagon's interest in such matters, including studies of paranormal phenomena like ESP, going back several decades. Readers learn that techniques like hypersonic sound and targeted energetic pulses to disable soldiers are close to being used in the field, and even have everyday applications that make "targeted advertising" an understatement. Despite the book's title, Moreno doesn't limit his discussion to brain-related research; he explains the military's investigation of how to enhance soldiers' endurance and reaction time in combat as well as various nonlethal disabling technologies. The ethical implications are addressed throughout the book, but the author leaves substantive discussion to his praiseworthy last chapter. (Nov.)

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Review

"Fascinating, clear-headed, optimistic, and lu (Sally Satel 2006-05-30)

"Moreno asks the tough ethical and policy questions that arise from using knowledge about how the human brain functions. . . . Accessibly written. . . . Given the topic's provocative nature, this is recommended for all science and bioethics collections."-- *Library Journal*

(James A. Buczynski *Library Journal* 2006-10-16)

"A fascinating and sometimes unsettling book. . . . Any academic involvement in military research presents an ethical dilemma, and Moreno's exploration of this theme is one of the most interesting aspects of the book. He is no knee-jerk pacifist: he accepts that military force is sometimes necessary and argues convincingly that contact between military and civilian research is healthier than the alternative of total secrecy. He also acknowledges the "dual-use" argument that many DARPA-funded programs have clear civilian pay-offs. Yet by taking military funding, he says, researchers are in some sense accomplices to the perpetuation of what he calls a "national security state," a posture of open-ended militarization supported by a vast budget that in the view of many critics, bears little relation to the actual threats confronting the United States."—Charles Jennings, *Nature*

(Charles Jennings *Nature*)

"There has been virtually no debate on the ethical questions raised by the brave new brain technologies. . . . Neuroscientists have been strangely silent. The time to speak up is before the genie is out of the bottle."-- Sharon Begley, *Wall Street Journal*

(Sharon Begley *Wall Street Journal* 2006-12-15)

"Quietly provocative. . . . Moreno takes an evenhanded, thorough look at how deeply the intelligence and defense communities are involved in many of those advances and the mindfields that might lie ahead. . . . In a thoughtful, easy-to-digest way, Moreno catalogs a long list of projects, some purely speculative, others in the development pipeline."--John Mangels, *The Plain Dealer*

(John Mangels *Cleveland Plain Dealer* 2006-11-12)

Interviewed on November 20th "Diane Rehm Show."
(Diane Rehm *Diane Rehm Show* 2006-11-20)

"Fascinating and frightening. . . . Moreno's book is important since there has been little discussion about the ethical implications of such research, and the science is at an early enough stage that it might yet be redirected in response to public discussion."--*Bulletin of the Atomic Scientists*

(Hugh Gusterson *Bulletin of the Atomic Scientists* 2007-04-10)

"Moreno offers readers a unique picture of the history of this effort and of the wide range of innovations being developed in behavioral and brain science with the interest and support of US national defense agencies. . . . This research raises serious social and policy questions that require broader public discussion. Accordingly, this book deserves a wide readership. Discussing a complex subject in a clear writing style, Moreno makes his material readily accessible to an audience that will include interested laypeople."--*Choice*

(R. L. Jones *Choice* 2007-04-01)

"An exhilarating and anxiety-provoking whirlwind tour of recent developments in neuroscience that possess defense or national security potential. . . . *Mind Wars* is, of course, much more than a tour of developments in neuroscience. Moreno provides an admirably accessible introduction to philosophy of mind, and he thoughtfully discusses a number of ethical issues raised by the research including dignity and cognitive liberty. . . . [a] groundbreaking text."--*American Journal of Bioethics*

(Jonathan Marks *American Journal of Bioethics* 2008-06-01)

"One of the most important thinkers describes the literally-mind-boggling possibilities that modern brain science could present for national security."--Lawrence J. Korb, Assistance Secretary of Defense 1981-85

(Lawrence J. Korb 2006-04-25)

About the Author

Jonathan D. Moreno is the Emily Davie and Joseph S. Kornfeld Professor and Director of the Center for Biomedical Ethics at the University of Virginia. He is an elected member of the Institute of Medicine, an advisor to the Howard Hughes Medical Institute, and a Senior Fellow at the Center for American Progress.

He has been a senior staff member for two presidential ethics commissions and is past president of the American Society for Bioethics and Humanities.

Users Review

From reader reviews:

Kristin Todd:

Now a day people that Living in the era where everything reachable by talk with the internet and the resources within it can be true or not need people to be aware of each data they get. How a lot more to be smart in obtaining any information nowadays? Of course the solution is reading a book. Examining a book can help men and women out of this uncertainty Information specially this Mind Wars: Brain Research and National Defense book as this book offers you rich information and knowledge. Of course the data in this book hundred percent guarantees there is no doubt in it as you know.

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