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**Michael D. Matthews, *Head Strong: How Psychology is Revolutionizing War*. New York: Oxford Univ. Press, 2014. Pp. xxiii, 262. ISBN 978-0-19-991617-7.**

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The premise of *Head Strong* is that “Psychology will be of fundamental importance to who wins and who loses wars of the future” (xvi). In this thought-provoking book, psychologist Michael Matthews (US Military Academy) examines the role psychology and psychologists will play in warfare. In chapter 1, “Psychological Science and the Art of War,” he writes that

The role of psychology in warfare is vital. It takes a new kind of soldier to fight a new kind of war. Industrial/organizational psychologists must learn to identify the abilities and aptitudes that will allow soldiers and their leaders to know when, where, and how to employ deadly force. Engineering psychologists must design new military systems that allow the human to employ his or her strengths (sense-making, intuition, rapid decision making) and capitalize on the strengths of digital technologies (vast information management) to manage command and control systems. Modern war, like others throughout history, places tremendous psychological strain on combatants and their families. Psychologists must continue to develop innovative ways to both treat combat-stress casualties and to prevent them. Psychologists must team with other social scientists to build a true understanding of the culture and values that reside in the resident population where soldiers are deployed. Social psychologists will tell us how to win hearts and minds, how to negotiate with enemy warlords, and how to lead armies that are comprised of what in today’s terms would be nontraditional soldiers. Finally, behavioral neuroscience will combine with other sciences to perhaps develop ways of producing soldiers with almost superhuman powers. (9)

Matthews sets himself to review the role of psychology in war today and in the recent past, and to project its place in decades to come. He ambitiously identifies his intended audience as both military psychologists and laymen.

Chapter 2, “The Right Soldier for the Right Job,” concerns how the military selects soldiers and officers. Matthews argues that, to date, testing has focused on cognitive skills rather than attributes like character, courage, loyalty, and “tough-mindedness,” which are so critical for members of the military. He foresees two major shifts in testing by 2030. First, increased use of computer-based testing to measure aptitude and cognitive abilities. And second, expanded testing for non-cognitive factors, specifically grit (persistence in achieving difficult goals), psychological hardiness (commitment, control, and challenge), and such qualities as “bravery, zest, fairness, honesty, persistence (similar to grit), optimism, leadership, self-regulation, and teamwork” (28). The author draws on research he has done with combat veterans (Army captains just back from Iraq or Afghanistan) that identified teamwork, bravery, capacity to love, persistence, and honesty as the most essential character strengths in high-stress combat situations. This is intriguing research, but Matthews does not make clear just how the military might implement testing for such non-cognitive factors or whether sufficient evidence supports the use of such testing in screening future soldiers.

Chapter 3, “Turning Civilians into Soldiers,” investigates the role of psychology in military training. Matthews believes we are at the beginning of a radical change in training, primarily involving the use of simulations. By 2030, he asserts, simulations will include a variety of scenarios (tactical scripts) to facilitate improved “battle savvy,” train for intuitive thinking, and model complex decision making (43). Infantry lieutenants of the future will engage in various simulation scenarios and learn to cooperate with other players in complex operations. Such networked simulations have tremendous potential to revolutionize training even sooner than Matthews believes. Video game players routinely immerse themselves in a virtual environment and carry out “operations” while linked with other players via the internet; they communicate with each other through headsets, seeing other players’ avatars and coordinating their actions. In short, the technology is here. All that remains is to adapt it to military training.

In a fascinating section of chapter 3, entitled “Training the Warrior Heart,” Matthews discerns a significant gap in today’s military training: soldiers are taught to kill, but not how to deal with having taken a life. This has second-order consequences like depression, post-traumatic stress disorder (PTSD), and difficulty reintegrating into civilian society—all in need of further research. Another issue worth exploring is whether psychologists will ever be able to identify individuals best suited to cope with killing and its psychological consequences, which would facilitate the selection of personnel for special operations forces where “legitimate” killing is more likely to be required. Based on his experience as a law enforcement officer, Matthews concludes that training to manage the effects of killing is critical for anyone authorized to use deadly force; he recognizes, too, the necessity to distinguish legitimate from illegitimate killing.

Chapter 4, “Cognitive Dominance: Soldiers and Systems That Outthink the Enemy,” focuses on decision making both real and modeled. In a perceptive discussion of situational awareness, Matthews writes that “In the future, military psychologists will play a major role in improving situational awareness in two ways. First, they will develop ways to train new soldiers and leaders to develop effective situational awareness skills prior to deploying to war. Second, they will work with engineers to design military systems that augment the soldier’s natural cognition with automated systems providing critical information at the right time and in the right way to establish and maintain high situational awareness at all times” (61).

Virtual simulations and augmented cognition systems have great potential as new means to enhance situational awareness in future soldiers, replacing the “on-the-job, learn-through-experience” method prevalent today. Matthews also discusses the use of intuition based on expertise as the preferred method of quick decision making in high risk situations. “A general officer with decades of experience training [*sic*] and fighting wars may be able to render decisions using intuition that are quite effective” (57). That may be so, but intuitive decision making, however experienced the commander, is not always appropriate or effective. History is replete with examples.<sup>1</sup>

Chapter 5, “Tough Hearts: Building Resilient Leaders,” considers the age-old, unavoidable problems of recovering from trauma and extreme stress, which, Matthews observes, may range from PTSD to positive post-traumatic growth. Most concerning for the military is the ability to recover quickly from stress. The Army’s Comprehensive Soldier Fitness (CSF) program seeks to build resilience and psychological fitness. Matthews sees improved resilience training as a vital component in the education of all soldiers and a key task of military psychologists. A recent report by an Institute of Medicine panel questioned the efficacy of programs like CSF in the absence of much scientific evidence that they actually promote resilience and psychological health.<sup>2</sup>

Chapter 6, “Winning Hearts and Minds,” stresses the value of cultural sensitivity and cultural competence, which have received much attention during the wars in Iraq and Afghanistan. Matthews believes cultural training and education should be expanded at all levels in the military. Some programs are already underway, including instruction in negotiating with indigenous leaders at Army combat training centers. The chapter also covers the formation and fielding of Human Terrain System teams to help commanders on the ground assess and learn about the local culture, using social network analysis to better appreciate the ways people interact and communicate.

Chapter 7, “This Is Not Your Father’s Army,” focuses on cultural diversity in today’s army, including the integration of African Americans, women, gays and lesbians, and new generations of soldiers, as well as the place of military psychologists in building a diverse force in the future.

Chapter 8, “When the Going Gets Rough, the Rough Get Going: Leading in Combat,” highlights *in extremis* (i.e., combat) leadership. Matthews writes that psychologists are starting to realize that combat leadership differs from leadership in other settings, citing the work of Brig. Gen. (ret.) Thomas Kolditz<sup>3</sup> and

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1. See, e.g., David C. Gompert and Richard L. Kugler, “Lee’s Mistake: Learning from the Decision to Order Pickett’s Charge,” *Defense Horizons* 54 (Aug 2006) 1–8.

2. See Patricia Kime “Panel: Scant Evidence ‘Resiliency’ Programs Work,” *Army Times* (20 Feb 2014). The Army disputes the panel’s conclusions and views its analysis as flawed, but the jury is still out.

3. E.g., *In Extremis Leadership: Leading As If Your Life Depended on It* (San Francisco: Jossey-Bass, 2007).

others, who hypothesize that effective combat leaders must demonstrate and inspire courage, deal effectively with high stress, teach others to do the same, and build individual and team resilience. This is an interesting portion of the book, but the study of *in extremis* leadership is still in its infancy and Matthews leaves the question of exactly how to produce superior combat leaders to future psychologists.

The ninth chapter, “Leading Others in the Digital Age,” treats the effects that changes in command and control technologies will have on future war making; in particular, he anticipates a concomitant need to change leadership models.

Chapter 10, “The Twenty-First Century Patton,” reviews current Army leadership doctrine and the competencies and attributes future military leaders will need to exhibit. Matthews considers trust the cornerstone of military leadership. He explains the IROC (Individual-Relationship-Organization-Context) model of trust development (163). The chapter concludes with a daunting prediction that future military leaders will need to be egalitarian rather than authoritarian, transformational rather than transactional, culturally savvy, adaptive in their thinking, technologically smart, politically well informed, socially intelligent, appreciative of value diversity, committed to attaining objectives with minimal loss of life, and able to work in a joint, interagency, and multinational environment.

Chapter 11, “Building Better Soldiers through Science,” “speculates on ways that psychologists might influence how the military prepares for and fights wars of the future” (177). Matthews considers cutting-edge fields like neuroscience and epigenetics. Increased understanding of brain-function chemistry might lead to drugs that improve responses to stress or sleep deprivation. And genetic science may hold the potential to enhance resilience. The most controversial possibility Matthews speculates on is the use of operant conditioning or cognitive-based therapy techniques to enable soldiers to perform “adaptive killing”—to overcome the reluctance to kill when killing is sanctioned by society, that is, on the battlefield. Matthews grants that the use of such conditioning is fraught with ethical and practical perils, but it is directly pertinent to the subject of his book, the use of psychology to revolutionize warfare.

In chapter 12, “Spin-offs: A Better World through Military Psychology,” Matthews maintains that the developments in military psychology he discusses might benefit society as a whole. He identifies the fostering of resilience as the “most significant spin-off from twenty-first century warfare” (201).

Chapter 13, “Psychology, War, Peace, and Ethics,” contains some concluding thoughts on “the role of military psychologists in supporting war ... [as well as] what the discipline of psychology offers in promoting peace” (214). To preempt critics who view military psychologists as acting counter to peace because they support war, he provides examples of the peaceful applications of developments in the profession. He follows up this discussion with a defense of military psychologists as ethical practitioners and scientists.

To write “a book about how psychology can help win the wars of the twenty-first century” (229) is a challenging enough endeavor, but it is complicated here by the targeting of both professional and lay readers and the inclusion of an account of psychology in warfare in the past as well as the present and future. Nonspecialists may not understand the psychological concepts and models that pervade the book and military professionals may not care to review past and current practices with which they are already quite familiar. And, too, Matthews casts his net too wide in trying to cover topics as different as the selection and entry training of soldiers on the one hand, and matters of combat leadership on the other. He provides tantalizing glimpses of how military psychology might influence war making in the future, but leaves the details to future psychologists to work out. *Head Strong* certainly does, however, achieve its author’s goal of stimulating “further thoughtful and informed discussion on the role of psychology ... in the support of military operations” (11).