

Neuroanthropology – the Next Big Thing in military training?

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The XXth century brought us the bloom of research on the information dimension of human functioning, with a parallel military INFO RMA. As we are entering the golden age of brain research and cognitive science, with the upcoming Biotechnological Revolution in Military Affairs, not only civilian entities in research endeavors such as the American *BRAIN* initiative or the European *Human Brain Project*, but also security and defense communities start exploring the cognitive area of human activity. Neither neuroscience nor cognitive science however, due to numerous technological and methodological limitations, fail to cover the complexity of the mind, and the cultural variety of the individuals involved. Culturally influenced cognitive, affective and even physical domains embrace emotional antecedents, conditioning, moral reasoning, perception and gaining situational awareness, communication, approach to death, somatic health, aggression, responding to narratives, group relations and many other. Thus the field of neuroanthropology evolved, as an interdisciplinary science that joins field research and neuroscience. The interdisciplinary approach offered by neuroanthropology, enables us to:

- Understand the interaction of human brain and culture, and hence the implications for mind functioning and behavior determination in a variety of settings and circumstances,
- Determine the role of the nervous system and cognitive processes in creating social structures, constructs and behaviors,
- Bring in significant advancements in human science theory.

The upcoming scientific breakthroughs that enable to crack, model and alter the functioning of the human brain and its say in cognitive, physical and affective domains of behavior, will also vastly change the way our militaries work. Armed forces nowadays function in a space between pre-modernity and postmodernity. Our armies will be affected by the resulting human advancements, transhumanist ideas and singularity, at the same time having to perform their duties in societies that evolve in a completely different manner, without much regard for technological and civilizational developments. The goal of military activities in the field is to maximize human-system effectiveness where human factor is the key. The contemporary

battlefield also brings on extraordinary demands on the soldiers as to their mobility, autonomy, physical performance and cognitive skills. Complex-adaptive threats demand a comprehensive approach and joint and multinational operations, in which the management of training, leadership and conduct of the operations is very complex due to cultural and organizational differences between the entities engaged. The increased cultural diversity both within the armies, the „human domain” and the enemy, renders the growing role of cross-cultural competence and other soft skills.

Neuroanthropology offers tools of bridging those gaps and is of particular significance to the armed forces, since it can help explain and enhance solutions for such diverse issues as the cognitive abilities and aspects of the battlefield, training, PTSD management, perception of threats, PSYOPS or shaping cyberspace. In more detail, several possibilities of applying neuroanthropological research to the above domains are as follows:

- Responding to cultural diversity of military learners in CAP domains.
- Projecting and improving virtual training tools and immersive environments.
- Neurergonomics and neurofeedback.
- Treatment and prevention of PTSD thanks to the improved understanding of the origins, processes and effects in all CAP domains.
- Projecting perceptions, decoding the role of narratives and measuring responses to PTSD treatment.
- Improved leadership and management of multicultural groups and units.
- Better incorporation of cultural factors in operational planning and conduct.
- Support to PSYOPS and other non-kinetic operations.
- Examining the influence of combat conditions on CAP domains in various groups.
- Projecting military mindapps.
- Pharmacologization of warfare: the use of pitocin, beta-blockers, et. al.

The possibilities were partly acknowledged by American defense R&D institutions such as DARPA (*SyNAPSE*, *Narrative Networks*, *N4IA*, *CT2WS*), IARPA (*ICArUS*, *KRNS*, *SHARP*) or Sandia National Laboratories (*HDM*) projects which explore the potential of merging cognitive science, psychometrics, computational neuroscience with social science and humanities to facilitate the military decision-making process and performance of soldiers. However, only a

limited amount of research has been performed and reported on cultural determinants of human cognitive abilities, reasoning and behavior in the security and defense context. The aim of the speech then, is to expand on the added value of the neuroanthropological research to the field, and to discuss controversies that result from the application of the current and future findings in the field that might lead us to a situation in which winning “hearts and minds” will no longer be a metaphor.

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