The Neurological Basis for Leader Complexity

Sean T. Hannah
United States Military Academy
Department of Behavioral Sciences and Leadership
West Point, NY, 10996
Phone: (845)938-5945
Email: Sean.Hannah@usma.edu

Pierre Balthazard, Peter L. Jennings, David A. Waldman
Arizona State University
4701 W. Thunderbird Rd. (MC2451)
Phoenix, Arizona 85306

Robert Thatcher
School of Medicine, University of South Florida
Director Neuroimaging, Applied Neuroscience Laboratories
Applied Neuroscience, Inc.
228 176th Terrace Dr.
St. Petersburg, FL 33708

ABSTRACT:

Complex adaptive leadership, and its core component of self-complexity, is an emerging conceptualization of leadership that is based on the premise that complex operating environments require leaders to be highly adaptive in adjusting their behavioral responses to meet diverse role demands. Further, such adaptability is contingent upon leaders having the requisite cognitive and affective complexity to facilitate effectiveness across a wide domain of roles. Leadership researchers have long attempted to understand the individual differences in cognition and affect that underlie leader performance. To this end, we demonstrate that quantitative electroencephalogram (qEEG) technology can provide valuable information about the neural correlates of various cognitive processes underlying leader self-complexity. Thus, the use of qEEG may lead to a better understanding of the neurological mechanisms that are central to the cognitive affective processing of leaders. We conclude by considering how additional research could lead to the application of neurofeedback protocols for leadership development.

KEYWORDS: Leadership, complexity, self complexity, neuroscience, qEEG

CONTACT: COL Sean T. Hannah, United States Military Academy, West Point, NY, Tel: (845) 938-5945, Email: Sean.Hannah@usma.edu