

# Adaptable leaders may have best brains for the job, study finds

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Effective leaders' brains may be physically "wired" to lead, offering the promise of more precise identification and training, according to studies of U.S. Army officers published by the American Psychological Association.

Researchers have linked adaptive [leadership](#) skills with brain functioning and psychological complexity measures among active [leaders](#). Those leaders who were found to be more adaptable and complex in [psychological studies](#) appeared to have brains that function differently from those of less adaptable leaders, according to an article published online in the *APA Journal of Applied Psychology*. This fusion of neuroscience and leadership research could one day revolutionize how organizations assess and develop effective and adaptive leaders, according to the study's authors.

"Once we have confirmed how the brain works in these leaders, we can create an 'expert' profile," said the study's lead author, Sean Hannah, PhD, of Wake Forest University. "This profile can help us develop [brain training](#) methods to enhance brain functioning in leaders, such as the neurofeedback techniques that have been successfully used with [elite athletes](#), concert musicians and [financial traders](#)."

Officers were defined as being more psychologically complex if they had a more diverse sense of their own abilities and accomplishments as leaders. For example, complex leaders described themselves as filling more [leadership roles](#) – such as mentor, team leader and spokesperson –

and possessing a diverse set of skills and attributes within these roles. Also, leaders who were more complex effectively worked their way through a challenging four-part military leadership scenario.

Brain networks in the frontal and prefrontal lobes of the most complex and adaptable leaders – areas associated with self-regulation, decision-making and memory – were more complex and differentiated compared to those of leaders who were determined not to be very complex, according to neuroimaging.

Ranging in rank from officer cadet to major, 103 volunteers were recruited from the U.S. Military Academy at West Point for the study. Eighty-seven of the officers were men and the average age was 24. The officers had an average of four years of military leadership experience. All went through a medical screening and completed a standardized survey to measure how complex a leader they saw themselves. For example, they were asked to picture themselves as leaders of a combat unit and then describe what roles they saw themselves filling and what knowledge, skills and abilities they used across those roles. They then organized those roles and attributes in order of importance. In addition, half of the participants underwent a quantitative electroencephalography scan. Using electrodes placed on 19 different locations on subjects' heads, researchers were able to track activity in particular areas of the brain while the participant was seated, at rest.

Researchers also tested the participants' leadership and decision-making abilities in a hypothetical tactical military scenario, where the participants had to lead their unit to interact with hostile and non-hostile civilians, enemy forces, the media and, eventually, the shooting down of a U.S. helicopter during an international humanitarian relief mission in Africa. The scenario was developed by two West Point military leadership instructors specifically for this study to show how officers could adapt in a fast-changing, quickly deteriorating situation. Former

military officers with significant experience in these types of situations rated the officers' responses to the scenario based on their adaptability, situational awareness and decisions. Leaders who had a more complex sense of their leadership skills and greater neurological complexity were found to be more adaptive and effective leaders in these scenarios.

Hannah, a retired colonel with 26 years of experience in the U.S. Army, including serving as the director of Leadership and Management Programs at West Point, said the results are a step toward finding out how effective and adaptable leaders not only think and act, but how their brains are wired to lead.

**More information:** "The Psychological and Neurological Bases of Leader Self-Complexity and Effects on Adaptive Decision-Making," online April 1, 2013, *Journal of Applied Psychology*

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