



Network Science Center at West Point

Title: Cadet Leadership Network Structures (C-LeNS)

Subject: Network determinates of military leadership among future army officers

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Introduction

The way that individuals group themselves into social networks can reflect a number of underlying psychological and social processes. For example, individuals may organize themselves into networks (especially affective networks) on the basis of shared identity, goals, and meaning, by seeking out similar others. People also show preferences to link to others who explicitly endorse the same opinions or values (attitudes), who share common mental maps or associations in memory (cognitions), and who engage in similar activities (behaviors). As the network forms, the resulting structures lead to differences in the opportunity to observe and interact, in the types of information and resources to which individuals have access and can exchange, and in the external social pressures to which individuals are exposed (Wasserman & Faust, 1994). This helps build the foundation for future changes in both network structure and individual attitudes, cognition, and behavior through, e.g., social influence and other processes. Disentangling different types of (potentially intertwined) network processes can be statistically and theoretically difficult, but the examination of interpersonal networks over time (for example, communication networks) provides information about relationships which standard statistical approaches are unable to detect.

Background

The current study focuses on identifying social leaders, and assessing how leaders use network ties to promote and spread values and beliefs. Past research suggests that people in formal positions of leadership help form attitudes in their subordinates. That is, leaders' attitudes and behaviors tend to correlate with the attitudes and behaviors of their subordinates. Less attention has been paid to informal ties, which are oftentimes more powerful and influential than formal connections in conveying information, engendering behavioral change, and group performance. Research has shown that informal connections can bypass formal structures, facilitating (or constraining) the flow of knowledge and resources between and within units (Wasserman & Faust, 1994). In particular, people tend to rely on trusted personal relations when facing highly stressful situations or when posed with controversial, ambiguous or sensitive matters (Uzzi).

Research Procedure

In this study, U.S. Military cadets will be asked to identify their friends, those they trust, and those who think are strong leaders. From these data, network change (patterns of growth and changes) and information exchange (how individuals spread attitudes, ideologies, and behaviors) will be evaluated. Informal relationships (including friendship, trust and mentorship), and formal network structures (ie., chain of command) will be examined over the course of the academic year. Statistical models that detect changes within these various social networks will be used to compare the importance and influence of informal and formal leadership. Understanding what kinds of network ties are most effective for supporting communication and inciting behavioral and attitudinal changes will inform strategies for leadership, morale, and organizational adaptation in both tactical and strategic scenarios.

Relevance

Contagion of values and behaviors throughout an Army organization has important implications for team cohesiveness and effectiveness. While past studies have successfully modeled the spread of attitudes and behaviors through organizational networks, few if any, have looked at contagion

effects among soldiers and from the perspective of military leadership. If we focus *only* on objective scales of military leadership, and disseminate information using *only* chain of command structures, then we miss important channels of information exchange that are useful in team-level outcomes. These findings will be pivotal for Army applications of social network models, where the objective is to target effective “change agents” (whether they be formal or informal positions) in order to seed, propagate, or intercept information spread.