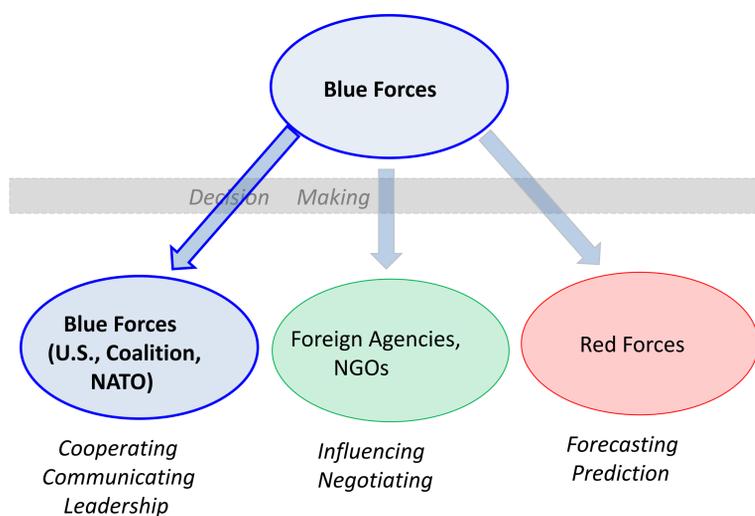


S&T Campaign: Human Sciences
Integration of Humans and Systems
Humans in Multi-Agent Systems

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Research Objective

- To identify sociocultural factors that are significant contributors to decision-making and communication among various populations within the military and to develop products based on these findings from ARL research and from its research partners into cohesive and useful transition products for training, selection, and product development enhancement



Blue Force Interactions with Blue, Green, and Red Forces

Challenges

- Collecting objective performance data in culturally significant contexts is the key.
- There are a number of theories from which to later formalize a suitable theory of sociocultural behavior that fits ARL applications.
- Decision-making research has not yet focused on the inclusion of culture and even less frequently on decision-making in a military environment (Guess, 2004).
- For example, *The Culturally Aware Asymmetric Threat Tracker*, Seen below, will provide the Warfighter with the ability to quickly incorporate significant cultural factors in the planning and implementation of military operations.



Culturally Aware Asymmetric Threat Tracker

ARL Facilities and Capabilities Available to Support Collaborative Research

- Soldier Assessment & Usability Laboratory with capabilities simulation (military simulations and driving simulator), interface data capture, and eye tracking.
- IMPRINT and C3 Trace Modeling Tools.
- Numerous inventories and data collection instruments to collect subjective cognitive workload, stress, situational awareness, motion sickness, coping styles, cognitive ability, and many others.
- Unique combination of field, laboratory, quantitative, and qualitative experiments, data collections, and a variety of statistical analytic capabilities.
- Diversity in training including cognitive psychologists, computer scientists, sociologists, statisticians, and engineers.
- We have access to several university research programs that are performing cooperative research with ARL.
- We have access to diverse civilian and military units to include ROTC Cadets, National Guard, U.S. Army Soldiers and Soldiers from various NATO and coalition nations.
- Recent Publications:
 - Scribner, D.R. (2015, draft briefing). The Effects of Demographic and Sociocultural variables on Leadership Challenge Exercises with 3rd Year ROTC Cadets.
 - Scribner, D.R., Grazaitis, P., Animashaun, A., & Grynovicki, J.O., & Reinerman, L. (2015). Analysis of Sociocultural Constructs Applicable to Blue Force Teams: Increasing Fidelity from Pencil and Paper and Video Tests to Virtual Environments, Human Computer Interaction International 2015 Conference Proceedings, 2-7 August. Los Angeles.

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- We are refining the methodologies and techniques being used to include diverse inventories, tools, and statistical techniques to provide data, models, and reports to enhance the tools and techniques we are developing with our customers.
- We need to access culturally relevant decision-making situations to realize the effects of sociocultural variables in field data collections.
- We plan to access diversity where the sociocultural issues exist. For example in the Southwest where many of the ROTC cadets and National Guard Soldiers may be primarily Hispanic (Texas A&M International University, Laredo, Texas).
- We wish collaboration in determining what sociocultural attributes factor into decision-making performance?
- Which of these attributes are trainable and which ones are unique individual dispositions?
- How can these factors enhance software tools for the Soldier?