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Response to Uncertainty in Decision Making:  
Individual and Cultural Differences

Cognitive and Social Issues

Janet Sutton  
Air Force Research Laboratory  
AFRL/HECS  
Bldg 190, 2698 G Street  
WPAFB OH 45433-7604  
937/656-4316  
janet.sutton@wpafb.af.mil

Response to Uncertainty in Decision Making:  
The Impact of Individual and Cultural Differences  
Unclassified Abstract

How people use information to make decisions when faced with the uncertainty can significantly impact the ability to adapt especially where multicultural teams perform command and control functions. Some individuals are comfortable making decisions with uncertain or ambiguous information, while others are stressed by uncertainty when having to make decisions. The ability to manage uncertainty is critical to effective decision making at all levels, but particularly at the operational level. This paper examines the relationships between individual and cultural differences in (1) the desire for structure (i.e., preference for situations, activities that are structured and predictable) and response to lack of structure (i.e., experienced anxiety and/or discomfort when structure is perceived to be missing from situations encountered), (2) the fear of making a decision error, (3) the need for explicit, unequivocal, certain, and clear information on which to base a decision, (4) the ability to effectively organize information to fit existing knowledge structures or to process information that is inconsistent with existing structures, and (5) responses to uncertainty. Results from data collected at the Deployable Joint Task Force headquarters for the NATO Allied Warrior 04 and Allied Warrior 05 command post exercises are reported.

Research Methodology.

1. Method

1.1. Venue

In accordance with the overall NATO Response Force (NRF) Military Concept (NATO 2003c), joint NRF C2, embedded in Strategic Command headquarters, Joint Force Command headquarters, and Command Control headquarters must provide a high degree of interoperability and the capability to rapidly plan and prepare for deployment during an emerging crisis, as well as the capability to operate as a stand-alone initial entry force for up to 30 days. Allied Warrior 04 (AW04) was a command post exercise (CPX) designed to certify the NATO Response Force 4 (NRF 4) capability for the six-month period starting January 2005. Allied Warrior 05 (AW05) was a CPX designed to certify the NRF 6 capability for the six-month period starting January 2006

1.2. Participants

Participants were the 13-nation, 76-member Deployable Joint Task Force (DJTF) for the NATO AW04 CPX and 83 members of the DJTF for the AW05 CPX. These DJTF officers represented 13 and 16 nations for AW04 and AW05, respectively.

### 1.3. Instruments

- 1.3.1. The *Personal Need for Structure* scale (PNS; Thompson, Naccarto, Parker & Moskowitz, 1998) is a 12-item scale where high scores indicate a preference for clarity and structure in most situations, with ambiguity and gray areas proving troubling and uncomfortable. Chronbach alpha for the PNS is .84 and item-total correlations range between .58 and .60.
- 1.3.2. The *Personal Fear of Invalidity* scale (PFI; Thompson, Naccarto, Parker & Moskowitz, 1998) is a 14-item scale that measures one's tendency to react to decision making by being concerned with the possibility of making errors. Chronbach alpha for the PFI is .82 and item-total correlations range between .18 and .62.
- 1.3.3. The *Need for Cognitive Structure Scale* (NCS; Bar-Tal, 1993, 1994) is a 20-item scale that assesses the extent of an individual's preference for using cognitive structuring to achieve certainty. Higher scores indicate a greater need for cognitive structure. The NCS has both satisfactory internal consistency and test-retest reliability as demonstrated in past research with Chronbach alpha for the NCS of .82 and test-retest reliability (interval of 5 weeks between the measurements) of .85.
- 1.3.4. The *Ability to Achieve Cognitive Structure Scale* (AACS; Bar-Tal, 1994) is a 24-item scale that assesses the extent to which individuals are able to apply information processes that are consistent with their need for cognitive structure. Higher scores indicate a greater ability to apply information processes that are consistent with an individual's level of NCS. The AACS has both satisfactory internal consistency and test-retest reliability as demonstrated in past research with Chronbach alpha for the AACS of .67 and test-retest reliability (interval of 5 weeks between the measurements) of .86.
- 1.3.5. The *Uncertainty Response Scale* (URS; Greco & Roger, 2001) is a 48-item scale that was designed to predict individual differences in coping with uncertainty. The URS is comprised of three factors, Emotional Uncertainty (EU), Desire for Change (DC), and Cognitive Uncertainty (CU). EU is the degree to which an individual responds to uncertainty with anxiety and sadness. DC is the degree to which an individual enjoys novelty, uncertainty and change. CU is the degree to which an individual prefers order, planning and structure in an uncertain environment. Higher scores indicate greater tendency toward maladaptive responses to uncertainty (EU), greater enjoyment of the unknown (DC), and greater preference for control under uncertain conditions (CU). The URS has both satisfactory internal consistency reliability and test-retest reliability (Greco & Roger, 2001). Coefficient alpha for the EU, DC and CU subscales were 0.89, 0.90 and

0.85, respectively. Test-retest reliability estimates for the EU, DC and CU subscales were 0.79, 0.86 and 0.80, respectively.

#### 1.4. Procedure

At Joint Force Command - Naples for AW04 and Joint-Command – Lisbon for AW05, participants were first provided with background information concerning the U.S. Air Force Research Laboratory-led Leader and Team Adaptability in Multinational Coalitions (LTAMC) project. Questionnaire packets containing the PNS, PFI, NCS, ACCS, and URS were then administered by one data collector to all participants at each venue. Presentation of questionnaires in each packet was counterbalanced using an 8 x 8 Latin Square design. Time to complete the questionnaire packet was approximately 45 minutes.

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References

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