

IAA/IAF SPACE LIFE SCIENCES SYMPOSIUM (A1)  
Behaviour, Performance and Psychosocial Issues in Space (1)

Author: Dr. Nathan Smith  
University of Northampton, United Kingdom

Prof. Gro M. Sandal  
University of Bergen, Norway  
Prof. Gloria Leon  
University of Minnesota, United States  
Mr. Anders Kjærgaard  
Denmark

EXAMINING PERSONAL VALUES IN EXTREME ENVIRONMENT CONTEXTS: REVISITING THE  
QUESTION OF GENERALIZABILITY

**Abstract**

Land-based extreme environments (e.g. polar expeditions, Antarctic research stations, confinement chambers) have often been used as analogue settings for spaceflight. These settings share similarities with conditions experienced during space missions, including confinement, isolation and limited possibilities for evacuation. To understand the utility of analogue settings, researchers have examined the extent to which individual characteristics such as personality can be generalised across extreme contexts (Sandal, 2000). Alongside personality, researchers have begun to consider the personal values of individuals operating in extreme environment settings. Personal values provide useful information on individuals' motives for choosing to work in stressful situations as well as how people respond to and develop efficient methods to counteract stress (e.g. monotony, boredom). Utilising new and pre-existing data, the present study examines the extent to which personal value characteristics can be generalized across extreme environment groups.

Four extreme environment groups were assessed; mountaineers ( $N = 59$ ), military personnel ( $N = 25$ ), Antarctic over-winterers ( $N = 21$ ) and Mars simulation participants ( $N = 12$ ). All participants completed the Portrait Values Questionnaire (PVQ; Schwartz et al., 2001) capturing information on 10 personal values. The PVQ was completed in the native language of the participants.

Rank scores suggest all groups identified Self-direction, Stimulation, Universalism and Benevolence as important values and acknowledged Power and Tradition as being low priorities. Results from difference testing suggest the four groups were most comparable on Stimulation, Self-direction and Benevolence. There were significant between-group differences on seven of the ten values. Notably, mountaineers were significantly higher on ratings of Power and significantly lower on Conformity when compared to both Sirius patrol and Concordia personnel. Members of the Sirius Patrol were significantly higher on Hedonism than Concordia personnel.

Findings related to between-group differences in values highlight the importance of considering the population when comparing results across extreme environment groups. For all groups, Stimulation, Self-direction and Benevolence were important values. However, differences emerged in other values, which should be considered when comparing findings across settings. We conclude that further research should examine the influence of personal value motives on indicators of adjustment, interpersonal interactions and work performance. Information from such studies could then be used to aid selection and training processes for personnel operating in extreme settings. It is important to note the multinational sample and potential for the different analogues to be confounded by nationality. Nevertheless, given the consistency

of certain values, further research in this area is warranted.