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”GROUPTHINK” ON A MISSION TO MARS: RESULTS FROM A 520 DAYS SPACE SIMULATION
STUDY

Abstract

On a mission to Mars the crew will experience high autonomy and inter-dependence. “Groupthink”, known as a tendency to strive for consensus at the cost of considering alternative courses of action, represents a potential safety hazard. This paper addresses two aspects of “groupthink”: the extent to which confined crewmembers perceive increasing convergence in personal values, and whether they attribute less tension to individual differences over time. It further examines change in individual values and coping strategies over time. These questions were investigated in a 520-day confinement study in which a multinational crew (N=6) simulated a Mars mission. The Portrait of Crew Values Questionnaire was administered regularly to assess personal values, perceived value homogeneity, and tension attributed to value disparities. Interviews were conducted before. The Cope Inventory was used to assess how crew members dealt with stress. Interviews were conducted before and after the confinement. Results: Multiple regression analysis showed increased perceived homogeneity in most of values over time. Individual differences in most values also became less salient as sources of tension over time. The data showed large variations between crew members in reports about value differences and tension. In terms of individual value scores, there was a marked decline in achievement orientation and tradition (culture and religion) over time. Assessment of coping strategies showed that crew members were highly reluctant to express negative feelings towards each other, which increased towards the end of the mission.