

# PSPA - Test for the Study of Individual Values and Mutual Perception in Small Group

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## ABSTRACT

The new method for the small group under confinement observation is described. Results gained with PSPA testify that heterogeneity within small groups in extreme environments promotes the growth of conflict and tension, and it negatively affects the behavior and actions of the group members.

## Author Keywords

Small group, hyperbaric chambers, repertory grid, individual values.

In the last ten years, several simulation studies took place, where multinational crews have been confined in hyperbaric chambers for prolonged periods to model aspects of space missions. The relations between crewmembers with the use of PSPA-test have been studied in international simulation experiments with participation of flight personnel provided by European Space Agency, Canadian Space Agency, NASDA, and IBMP (EXEMSI-92, HUBES-94, CAPSULS-94, ECOPSY-95, SFINCSS-99), in a French Antarctic study, sponsored by ESA (IAPP). Data from isolated groups in analogue situations (hibernation, expeditions) and in model experiments has supported the hypothesis that behavior inside a small group can be also defined by the specifics of crewmembers' perceptions of themselves and of each other, by their self-identification with the group, and by changes under pressure of the stressors found in this extreme environment, such as isolation, monotony, and social deprivation. Experiments have shown that heterogeneity within small groups in extreme environments promotes the growth of conflict and tension, and it negatively affects the behavior and actions of the group members [1-2, 4-5].

Personal Self Perception and Attitudes (PSPA) is a system for analyzing participants' subjective attitudes. It is based

on the semantic differential of Osgood and the repertory grid technique of F. Fransella and D. Bannister and allows to investigate the aspects related to crew cohesion, individual values and group identification [1]. Subject is choosing assessment criteria by himself, answering the question: What are the main features (traits) that allow you differentiate people from your close surrounding? Then he has to estimate the extent of psychological similarity between himself and his team, applying previously selected criteria.

We are planning to investigate group dynamics in space crews under the influence of psychologically stressful situation inherent in extended space flight. We expect that the level of group cohesion in space crews could be significantly modified, on the one hand, by the influence of the stress involved in space flight, and, on the other hand, by the heterogeneity of cultural values, attitudes and behavioral preferences in multinational International Space Station crews.

## REFERENCES

1. Fransella, F., Bannister, D. *A Manual for Repertory Grid Technique*, Academic Press, 1977.
2. Gushin, V.I., Efimov, V.A., Smirnova, T.M., Kanas, N. et al Subject's Perception of the Crew Interaction under Prolonged Isolation. *Aviation, Space and Environmental Medicine*, 69, 6 (1998) 555-561.
3. Gushin, V.I., Pystinnikova, J., Smirnova, T. Interrelations between the small isolated groups with Homogeneous and Heterogeneous composition. *Journal of Human performance in Extreme environments*, 6, 1 (2001), 25-33.
4. Kozerenko, O.P., Gushin, V.I., Sled, A.D. et al Some Problems of Group Interaction in Prolonged Space Flights. *Human Performance in Extreme Environments*, 4, 1 (1999), 123-127.
5. Vinokhodova, A.G., Bystritskaya, A.F., Eskov, K.N. Inter-Group Relationship under Simulated Long-Term Isolation Conditions. *Space Technology*, 22, 3-4 (2002), 103-112.

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