HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
Enabling Technologies for Human Space Endeavours (2)

Author: Dr. Irene Lia Schlacht
Politecnico di Milano / Technische Universitaet Berlin, Italy, irene.schlacht@mail.polimi.it

Ms. Ayako Ono
Tohoku University Graduate School of Medicine, Japan, a.ono@med.tohoku.ac.jp

CREATIVE PROCESS TO IMPROVE ASTRONAUT RELIABILITY

Abstract

KEYWORDS: psychology; long-duration manned space missions, creativity, space art.

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In the context of long-term space missions, creative expression can improve the well-being of astronauts, and help avoid the effects of stress caused by sensorial deprivation and impulse repression. In this paper the importance of the creative process will be presented and discussed as well as the use of specific creative projects - musical stimuli, artistic collaborations in space and microgravity plays for example -as psychological countermeasures to influence astronaut reliability in outer space.

Astronauts who live in artificial high-tech environments in earth orbit suffer sensorial deprivation such as lack of solar light, wind and seasonal differences. The variation of stimuli such as the change of seasons is a "natural condition" that ensures archetypal brain activity and helps avoid drowsiness/maintain alertness. In this confined environment, monotony, boredom and repression of instinct (be it sexual or emotional) can "enhance stress with effect on the immune system "and as a consequence impair an astronaut's reliability. (Le Scienze, 1998)

By means of the sublimation concept, energy derived from a sexual or emotional impulse is channelled from its original purpose into positive social activity such as intellectual investigation or artistic endeavour: in short, into creative activity. According to Kanas, N. (page 130, 2003) "leisure time activities in space are very important. They help to counter boredom and monotony" and allow crew members to interact around a positive event. According to Malchiodi's theory (2006), the creative process is seen as a means of imaginative, authentic and spontaneous self-expression; an experience that, over time, can lead to personal fulfilment, emotional equilibrium and self-development.

Creative endeavours stimulate the learning process and self-awareness in relation to the environment (Martius, P.; 2008). Creative expression might be considered as part of psychological countermeasures, which "include all actions and measures that alleviate the effects of the extreme living and working condition of space flight on crew performance and behaviour" (page 131, Kanas, N.; 2003). Playing, painting, music, sculpture, or daydreaming can activate this process.

In conclusion, in the confined high-tech environment of living in space, it is essential to safety to minimize the effects of repressed instinct, boredom and monotony. In the context of the isolation of outer space, the capacity to implement the creative process as a psychological countermeasure can effectively support a mission's success.

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