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THE EFFECTS OF EXTREME ISOLATION ON LONELINESS AND COGNITIVE CONTROL PROCESSES: ANALYSES OF THE LODGEAD DATA OBTAINED DURING THE MARS-105 AND THE MARS-520 STUDIES

Abstract

The LODGEAD study aims to identify the relationship between physical (e.g., confinement) and social-psychological (e.g. loneliness) stress factors and cognitive control processes. Data from the MARS-105 pilot study (Van Baarsen et al., 2009) showed that, generally speaking, feelings of loneliness increased after three months of confinement, and that during this period the costs associated with shifting from one task to the successive one increased while the backward inhibition effect decreased. Also, explorative analyses indicated that increased loneliness was related to a decreasing memory for future events, time perception distortions, and less efficient control. With the data from the MARS-520 study, we try to find confirmation for our preliminary MARS-105 results.

The MARS-520 study is an initiative of the European ESA and the Russian IBMP and intends to mirror a journey to Mars in all its relevant aspects. A selected group of 6 male volunteers have entered the isolation facility in Moscow in June 2010 and will leave in November 2011 after a 520-day stay.

Core data are gathered by means of (validated) psychological questionnaires, cognitive tasks, and written logs. We hypothesise that during the first three months of the mission,

- loneliness will increase, particularly at the end,
- the expected negative relationships between loneliness and social support will become more pronounced, and
- control processes will be negatively affected, resulting in reduced efficiency.

In our paper we will test these hypotheses combining the MARS-105 and the MARS-520 data. We will make use of descriptive (longitudinal) pattern analyses and non parametric sign tests.