

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

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COMPARATIVE ANALYSIS OF SUBJECTIVE TIME PERCEPTION  
IN HUMANS ISOLATED FROM SUNLIGHT  
DURING ANALOG MISSIONS AND IN ARCTIC REGION DURING POLAR NIGHT.

**Abstract**

Human brain developed functionally different mechanisms for timing across different timescales (Buonomano, 2007). Isolation is a kind of sensory deprivation, therefore we wondered if various types of isolation may induce changes in subjective time perception. We developed and used a simple application to measure subjective time perception (Kolodziejczyk et al., 2017). We wondered if there is a difference in people exposed to such conditions in different sunlight deprived environments. In particular we were interested how big difference (if any), could appear in artificially deprived environment comparing to real sunlight deprivation in Arctic region during polar night.

Scientists from The University Centre in Svalbard (UNIS, Longyearbyen, Norway) agreed voluntary to participate in this experiments. Second group of volunteers were analog astronauts performing analog missions in the AATC habitat in Poland. The third group of participants was control group consisting of people living in the city. In order to gain sufficient data, volunteers were asked to perform the STP application twice a day regularly for two weeks. The first measurement was collected just after waking up. The second just before sleep. The main task in this STP test was to click regularly every 5 seconds during 30 seconds of single test. 5 such repetitions were made in time of single data collection. 10 clicks from each sample were analyzed and tempo, regularity and interval parameters were determined. We compared control, analog and arctic groups. We observed several differences in our results, for example much slower time perception in group of Arctic subjects, where 5 s for them was considered as 8 s.

In this presentation we would like not only to present our results but discuss them in broader aspect of the future long-term space flights. Our results definitely need more attention, further research and understanding in order to predict and sustain efficient behavior and more of the astronaut crews.