

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Space Culture – Public Engagement in Space through Culture (9)

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## BEYOND THE MISSION: EXPLORING HOW HUMAN CULTURE WILL EVOLVE IN SPACE

**Abstract**

Much of the cultural outreach related to space created today, such as museum exhibit design, focuses on feats of engineering and science experiments, however there is an equally rich domain of cultural exploration in the environments of orbit, microgravity, and interplanetary space. The experience of life in the environment of microgravity is intrinsically different than that of our experiences under the influence of Earth's gravity. Aesthetic preferences for qualities such as verticality have been shown to be impacted by the absence of proprioceptive signals that we have evolved to rely upon [1]. In addition, the unique affordances of life in microgravity and necessarily inside of space architectures suggests new design paradigms that will evolve concomitantly with human material culture. This points to a coming cultural evolution that will occur in the environment of microgravity—something that is important for us to understand and analyze as a species. Creating experiences that, through participation, expand the understanding of these unique aspects of human culture in space requires a deeper understanding of the nuances of the human body and mind in space.

Drawing from a series of design research interviews with current and former astronauts, as well as design projects created for and flown in zero-gravity environments, in particular the creation of the "Telemetron", a musical instrument designed for performance in microgravity [2], this paper will outline the unique social and cultural aspects of human life in space that need to be understood to develop richer cultural engagement and expand the public imaginary of human life in space.

[1] Gallagher, Maria Raffaella Ferrè, Elisa. (2018). The aesthetics of verticality: A gravitational contribution to aesthetic preference. *The Quarterly Journal of Experimental Psychology*. 71. 10.1177/1747021817751353.

[2] Fish, S. and L'Huillier, N., (2018). Telemetron: A Musical Instrument for Performance in Zero Gravity. NIME Conference Proceedings, 2018.