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Author: Dr. Ruben Salinas
Harvard Business School, United States

Mr. Christopher Richardson
International Space University (ISU), United States
Mr. David F Guajardo
International Institute for astronautical Sciences (IIAS), United States

THE VIRTUAL OVERVIEW EFFECT: EXPLORING THE POTENTIAL OF VIRTUAL REALITY SIMULATIONS OF EARTH-GAZING TO INDUCE AWE AND MEASURABLE CHANGES IN HEART RATE VARIABILITY

Abstract

The Overview Effect is an experience reported by astronauts that occurs upon reflection and processing after the experience of viewing Earth from space. The effect has been described as a cognitive shift in awareness, perspective, and identity, accompanied by feelings of self-transcendence and awe. Awe is a broadly researched, complex, self-transcendent emotion composed of two main elements: an appraisal of vastness and a need for accommodation. Awe is a critical component of sudden and enduring personal change. This study explored the physiological effects of inducing intense awe through an immersive virtual reality experience of the Overview Effect. The study enrolled a total of 97 participants, who were randomly assigned to one of three groups: group A (EarthScapeVR), group B (SpaceVR), and group C (control). Two distinct 180 virtual reality simulations of the Overview Effect, EarthscapeVR's Music of the Spheres^{TM} and SpaceVR's The Overview Effect^{TM}, were compared against a neutral 180 VR stimulus used as a control to determine whether the participants could reliably induce the emotion of awe with enough intensity to effectuate a significant psychophysiological response. The study's findings suggest that purposely designed VR simulations of the Overview Effect, one of the most prototypical experiences of awe, can elicit the emotion of awe with enough intensity to generate a discernible autonomic nervous system response, mainly characterized by a significant parasympathetic activation and a non-significant sympathetic withdrawal. Findings further suggest that combined self-reported measures alongside biomarkers may enhance researchers' ability to detect sympathetic nervous system effects from awe-inducing interventions.