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LESSONS LEARNT WHILE I WAS TRAINING AS AN ASTRONAUT.

Abstract

This work reports lessons learnt gained while I was training as an astronaut landed on a Martian-like desert. The aim is to raise awareness about the current state of research and implementation while reporting gaps that may be interpreted as ‘red flags’ of part of the activities supporting incoming crewed missions and human space flights. Below, the main four topics: **1) Leadership.** Ground-based simulations often adopt a leadership model very similar to that of the Apollo missions. However, it is more likely that incoming missions will use a shared-leadership approach as the crew is expected to become autonomous or Earth-independent. So, how effective are on-going ground-based simulations in replicating a future scenario of human life in outer space? **2) Identities.** Nowadays, people have a physical identity and virtual identity. What are the most effective coping mechanisms to maintain good health and well-being in a journey to Mars? And, what are the implications in training? **3) Failure.** Our Society builds on the expectation of fast approvals, fast changes and high impacts. The current communication system is prone to promote dynamic contexts (like improvements or changes) while discouraging failure. Then, such blueprint has been extended to educational services and decision-making processes. Indeed, the new forms of victory come at the expense of a more vague concept of failure. Looking at the foreseeable future of space, how can such a future become a success if failure is becoming a tabu word? **4) Replicability.** Ground-based simulations of human life on celestial bodies are not yet organized on formal guidelines. A large number of factors are responsible for introducing variability leading to a context that is hard to replicate over time. Such limitation impacts the quality of research outcomes. So, which scenario are we really trying to simulate? Here, the answers to these questions are discussed from first-person experiences about the practical challenges of an operational scenario. Then, proposed solutions are addressed at increasing the realism of ground simulations with the intent of mitigating potential long-term implications.