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Psychedelics and virtual reality: parallels and applications

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***Abstract*:** Psychedelic drugs and virtual reality (VR) each have the capacity to disrupt the rigidity and limitations of typical conscious experience. This article delineates the parallels among psychedelic and VR states as well as their potential synergistic applications in clinical and recreational settings. Findings indicate that, individually, psychedelics and VR are used in analogous ways to alter sensory experience and evoke awe. They are also both used in tandem with traditional therapies to treat a variety of mood disorders; their shared capacity to transiently alter perspective and disrupt rigid patterns of mental experience may underly their analogous and transdiagnostic therapeutic uses. In terms of their combined applications, a number of recreational users currently utilize psychedelics and VR together to enhance their experience. We propose that VR may be a useful tool for preparing hallucinogen-naïve participants in clinical trials for the sensory distortions experienced in psychedelic states. Given the critical role of "setting" in psychedelic treatment outcomes, we also detail how VR could be used to optimize the environment in psychedelic sessions. Finally, we provide considerations for future studies and detail how advancements in psychedelic and VR research can inform one another. Collectively, this article outlines a number of connections between psychedelics and VR, and, more broadly, is representative of growing scientific interest into the interactions among technology, psychopharmacology, and mental health.

Keywords: commentary, cyberdelics, perspective, psychedelics, virtual reality

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Introduction

Psychedelic drugs and virtual reality (VR) are each used to disrupt the rigidity of sensory experience,[1,2] as well as enhance outcomes with mental health treatments.[3,4] Classic psychedelics include lysergic acid diethylamide (LSD), psilocybin, mescaline, and ayahuasca/*N*,*N*-dimethyltryptamine (DMT; Table 1), and they induce their acute effects primarily through serotonin 5-HT2A receptor activation.[5] VR is defined as three-dimensional interactive environments, which users navigate *via* avatars.[6] The early discourse surrounding VR was linked with psychedelic culture and the drugs' capacity to markedly change mental experience – a reluctant connection for some in the technological community.[7] Many in the psychedelic community, on the other hand, embraced these connections and saw VR as a socially accepted tool to introduce the public to altered states.[8] Notably, Timothy Leary argued that cyberdelics – the fusion of psychedelic drugs and cyberculture – could reprogram the mind,[9] and went so far as to change his popular catchphrase "turn on, tune in, drop out" to "turn on, boot up, and jack in." Despite the early associations among psychedelics and VR, there has been a paucity of contemporary scholarly discussion in this area. This article addresses this gap by summarizing the parallels between psychedelics and VR, detailing their combined clinical and recreational applications, and discussing experimental considerations for future research.

Parallels

One connection between psychedelics and VR regards their ability to alter perceptual experience, notably visual processing. DMT, in particular, is a