

T-OBE, or not t-OBE?

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Introduction

Have you ever fantasized about floating above your own body? Your mind moves, or perhaps something even deeper - your consciousness.

That is the core of the "Out-of-Body Experience" (OBE), a feeling that completely outstands ordinary perception (Bruce, 1999). Historically dismissed as supernatural or mystical, OBEs might hold profound implications for neuroscience and consciousness studies (Monroe, 1971).

Today, thanks to neurotechnology, we have moved from merely *studying* these experiences to actually *replicating* them within controlled environments, and this unprecedented capability makes OBE a tool of unbelievable value to understand the neural basis of the 'self'; insights from here might revolutionize the neurotech space.

What is an Out-of-Body Experience?

OBEs occur when individuals perceive themselves as existing outside their physical bodies, often observing themselves from a third-person perspective (have you ever played Fortnite?). These experiences are reported in diverse scenarios, including near-death experiences, sleep paralysis, meditation, and psychedelic states (Greyson, 2003).

Neurological theories explain OBEs in terms of disrupted integration within the brain's sensory processing, particularly within the temporoparietal junction (later mentioned as "TPJ"), which is an area that plays a critical role in creating our sense of self in space (Blanke, Arzy, 2005).

The OBEs, in a philosophical way, challenge the materialist view of consciousness, opening questions about the mind-body problem. Do OBEs provide evidence of non-local consciousness, or can they be explained as an illusion of the brain? This places the OBE in the middle of debates both in neuroscience and philosophy.

Neurotechnology for Investigation of OBEs

Neurotechnology has finally opened the door to the systematic study of OBEs. Virtual reality could now offer a way to replicate OBE-like experiences through manipulating the sensory perspective within controlled environments. For example, VR body-swapping experiments and the "Rubber Hand Illusion" show how changes in visual and tactile feedback disrupt self-perception.

Beyond VR, electrical brain stimulation has been instrumental in this field. Dr. Olaf Blanke's groundbreaking research showed that stimulating the TPJ with electrodes could induce sensations similar to OBE's (Blanke, Arzy, 2005). Tools like fMRI and EEG enable researchers to observe neural activity during these experiences, uncovering patterns that

highlight how the brain constructs the self. Neurotechnology is not only observing OBEs-it is replicating them. The ability to do this enables unique opportunities to investigate selfhood boundaries under conditions of control and can turn these mysterious phenomena into a valuable experimental model (Ehrsson, 2007).

What OBEs Can Tell Us About Consciousness

OBEs show that the "self" is not fixed but malleable. The brain constructs it by means of integration of vision, touch, and balance. In disrupting this integration, the brain creates an illusion of a self that has been externally located. These insights emphasize the role of the brain in shaping our identity and embodiment.

At the philosophical level, studying OBEs enables us to further understand the human experience and the boundaries of the self. They require us to question whether consciousness is restricted to the brain or can exist on its own. More than that, OBEs provide a framework to begin to explore the nature of altered states of consciousness that bridge normal waking states with dreams, meditation, and near-death experiences (Metzinger, 2009).

The Neurotechnology Potential of OBEs

The ability to induce OBEs has transformative implications for the neurotech space. Therapeutically, OBEs could offer innovative treatments for trauma, such as detachment therapy for PTSD, allowing patients to reprocess distressing memories from a "safe distance." Similarly, altering body perception through OBEs might help individuals with phantom limb pain or body dysmorphia (Roskies, 2002).

Beyond therapy, induced OBEs can have many other uses in training environments. Surgeons or athletes may use the third-person perspective to improve their skills, and astronauts may find it useful during their orientation in space in zero gravity (Farah, 2012).

The Future of OBEs in Neurotechnology

From replicating those experiences to actually studying them, neurotechnology might come up with tools to explore those altered states of consciousness. Such experience may further our insight into some of life's most profound questions about the nature of consciousness and even contingent existence beyond death.

From a more practical perspective, OBEs could extend the frontiers of immersive technologies, enhancing VR's capability of creating lifelike environments, or allowing remote workers to "embody" virtual avatars with an unprecedented level of realism. These developments place OBEs at the bleeding edge not only as a very interesting research topic but also as an enabler of innovation across the neurotech landscape (Slater, Sanchez-Vives, 2014), could OBEs lead to neurotech tools that redefine our concept of individuality, enabling people to explore consciousness beyond the self?

Conclusion

Out-of-Body Experiences, once relegated to the realm of the mystical, now stand at the frontier of neuroscience and neurotechnology. In replicating and studying OBEs, we learn about consciousness, about selfhood, about the malleability of identity. The capability of stepping out of our bodies-literally or figuratively-changes the face of neuroscience; it changes the understanding of existence.

Neurotechnology transforms the question of 't-OBE or not t-OBE' into an actionable framework for exploring selfhood and consciousness, coming closer than ever before to answering mankind's universal question:

What does it really mean to exist?

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DECLARATIONS

During the preparation of this work the author used GRAMMARLY to check grammar and readability of the essay. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.