

# Virtual reality 'out-of-body experience' reduces fear of death in volunteers

January 25 2017, by Bob Yirka

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(Medical Xpress)—A team of researchers at Barcelona University has found that virtual reality experiences, if conducted in a certain way, can cause a reduced fear of dying. The team has written a paper describing their experiments and published it on the *PLOS ONE* open access site.

Prior research and anecdotal evidence has shown that people who have near-death experiences quite often find they have less fear of death. Science has not found an explanation for this phenomenon, but now, the research team in Spain has found that similar sensations can be induced

artificially by having volunteers experience out-of-body experiences using virtual reality gear.

To learn more about the possible effects of a virtual out-of-body experience, the research team enlisted the assistance of 32 female volunteers—each was asked to don a [virtual reality](#) headset and sit while the researchers manipulated their virtual environment. At the beginning of the experiment, the volunteers were coaxed into greater immersion in their [virtual environment](#) by inducing the feeling of falling virtual balls touching them. This was accomplished via devices placed on the elbows and ankles of the volunteer—when a virtual ball landed on that part of their body, they felt a slight vibration. After a few moments of immersive activities, the researchers then changed the visual perspective the volunteers from first-person to a third-person perspective that was disconnected from their bodies—to cause the volunteers to feel as if they were leaving their bodies. They could see themselves being left behind as the camera moved higher toward the ceiling and an opposite wall. After a few minutes of the out-of-body section of the experiment, volunteers removed their headsets and filled out questionnaires, some of which had questions regarding their degree of fear of death.

The researchers report that those [volunteers](#) who were subjected to the out-of-body experience reported significantly less fear of dying than did those that did not experience that portion of the experiment. They suggest that the experience lessens the [fear](#) of death because it fools the mind into experiencing life after death, with no apparent negative consequences.

**More information:** Pierre Bourdin et al. A Virtual Out-of-Body Experience Reduces Fear of Death, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0169343](#)

## Abstract

Immersive virtual reality can be used to visually substitute a person's real body by a life-sized virtual body (VB) that is seen from first person perspective. Using real-time motion capture the VB can be programmed to move synchronously with the real body (visuomotor synchrony), and also virtual objects seen to strike the VB can be felt through corresponding vibrotactile stimulation on the actual body (visuotactile synchrony). This setup typically gives rise to a strong perceptual illusion of ownership over the VB. When the viewpoint is lifted up and out of the VB so that it is seen below this may result in an out-of-body experience (OBE). In a two-factor between-groups experiment with 16 female participants per group we tested how fear of death might be influenced by two different methods for producing an OBE. In an initial embodiment phase where both groups experienced the same multisensory stimuli there was a strong feeling of body ownership. Then the viewpoint was lifted up and behind the VB. In the experimental group once the viewpoint was out of the VB there was no further connection with it (no visuomotor or visuotactile synchrony). In a control condition, although the viewpoint was in the identical place as in the experimental group, visuomotor and visuotactile synchrony continued. While both groups reported high scores on a question about their OBE illusion, the experimental group had a greater feeling of disownership towards the VB below compared to the control group, in line with previous findings. Fear of death in the experimental group was found to be lower than in the control group. This is in line with previous reports that naturally occurring OBEs are often associated with enhanced belief in life after death.

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