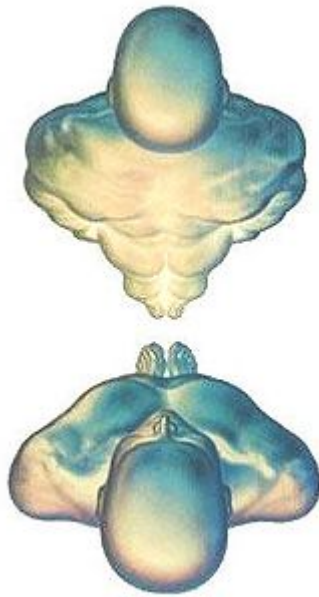




Out-of-body experience



An **out-of-body experience** (**OBE** or sometimes **OOBE**), is an experience that typically involves a sensation of floating outside of one's body and, in some cases, perceiving one's physical body from a place outside one's body (**autoscopy**). The term **out-of-the-body experience** was introduced in 1943 by G.N.M Tyrrell in his book *Apparitions*,^[1] and adopted by, for example, Celia Green^[2] and Robert Monroe^[3] as a bias-free alternative to belief-centric labels such as "astral projection" or "spirit walking". Though the term usefully distances researchers from scientifically problematic concepts such as the soul, scientists still know little about the phenomenon.^[4] One in ten people has an out-of-body experience at some time in their lives.^[5] OBEs are often part of the **near-death experience**, and reportedly may also lead to **astral projection**. Those who have experienced OBEs sometimes claim to have observed details which were unknown to them beforehand.^[6]

In some cases the phenomenon appears to occur spontaneously; in others it is associated with a physical or mental trauma, use of psychedelic drugs, dissociative drugs, or a dream-like state. Many techniques aiming to induce the experience deliberately have been developed,^[7] for example visualization while in a relaxed, meditative state. Recent (2007) studies have shown that experiences

somewhat similar to OBEs can be induced by direct brain stimulation. Some of those who experience OBEs claimed to have willed themselves out of their bodies, while others report having found themselves being pulled from their bodies (usually preceded by a feeling of **paralysis**). In other accounts, the feeling of being outside the body was suddenly realized after the fact, and the experiencers saw their own bodies almost by accident.^[8] OBEs often occur during the borderline stage between **REM sleep** and arousal when sleep paralysis may persist and dream imagery may mingle with sensory input.

Some neurologists have suspected that the event is triggered by a mismatch between visual and tactile signals. They used a virtual reality setup to recreate an OBE. The subject looked through goggles and saw his own body as it would appear to an outside observer standing behind him. The experimenter then touched the subject at the same time as a rod appeared to touch the virtual image. The experiment created an illusion of being behind and outside one's body. However, critics point out that it is uncertain how this relates to the OBE phenomenon.^[9]

Types of OBE

Spontaneous

During/near sleep

OBEs are sometimes reported to be preceded by and initiated from a **lucid dream** state, though other types of immediate and spontaneous experience are also reported. In many cases, people who claimed to have had an OBE reported being **asleep**, on the verge of sleep, or already asleep shortly before the experience. A large percentage of these cases referred to situations where the sleep was not particularly deep (due to illness, noises in other rooms, emotional stress, exhaustion from overworking, frequent re-awakening, etc.). In most of these cases, the subjects then felt themselves awake; about half of them noted a feeling of **sleep paralysis**.^[8]

Near-death experiences

Another form of spontaneous OBE is the near death experience (NDE). Some subjects report having had an OBE at times of severe physical trauma such as near-drownings or major surgery. In the case of motor vehicle accidents, they are able to recall the accident as if observing it from a location outside the vehicle.

Other

Along the same lines as an NDE, in some cases, extreme physical effort can induce an OBE. For example, one running in a marathon could overwork themselves and feel "extraordinarily weightless" and actually see themselves from above. Many times this is related to dehydration.

Induced

Consciously controlled and pre-meditated OBE methods (examples of which are widely available in many popular books on the subject^{[10][11][12][13][14]})—are also reported. Some people have attempted to develop techniques to induce OBEs.

Mental induction

- Falling asleep physically without losing **wakefulness**. The "Mind Awake, Body Asleep" state is widely suggested as a cause of OBEs, voluntary and otherwise. **Thomas Edison** used this state to tackle problems while working on his inventions. He would rest a silver dollar on his head while sitting with a metal bucket in a chair. As he drifted off, the coin would noisily fall into the bucket, restoring some of his alertness.^[15] OBE pioneer **Sylvan Muldoon** more simply used a forearm held perpendicular in bed as the falling object.^[16] **Salvador Dali** was said to use a similar "**paranoiac-critical**" method to gain odd visions which inspired his paintings. Deliberately teetering between awake and asleep states is known to cause spontaneous trance episodes at the onset of sleep which are ultimately helpful when attempting to induce an OBE, as reported by **Robert Monroe** and **Robert Peterson**. By moving deeper and deeper into relaxation, one eventually encounters a 'slipping' feeling if the mind is still alert. This slipping is reported to feel like leaving the physical body. Some consider

progressive relaxation a passive form of **sensory deprivation**.

- Waking up mentally but not physically. This related technique is typically achieved through the practice of **lucid dreaming**. Once inside a lucid dream, the dreamer either shifts the subject matter of the dream in an OBE direction or banishes the dream imagery completely, in doing so gaining access to the underlying state of **sleep paralysis** ideal for visualization of separation from the body.
- Deep trance, **meditation** and **visualization**. The types of visualizations vary; some common imageries used include climbing a rope to "pull out" of one's body, floating out of one's body, getting shot out of a cannon, and other similar approaches. This technique is considered hard to use for people who cannot properly relax. One example of such a technique is the popular **Golden Dawn "Body of Light" Technique**.^[17]

Mechanical induction

- Brainwave synchronization** via audio/visual stimulation. **Binaural beats** can be used to induce specific **brain wave frequencies**,^[18] notably those predominant in various mind awake/body asleep states. Binaural induction of the "body asleep" **theta brain wave frequencies** characteristic of dreaming **REM sleep** was observed as effective by the **Monroe Institute** (and corroborated by others). Simultaneous introduction of "mind awake" **beta frequencies** (detectable in the brains of normal, relaxed awakened individuals) was also observed as constructive. Another popular technology uses sinusoidal wave pulses to achieve similar results, and the drumming accompanying native American religious ceremonies is also believed to have heightened receptivity to "other worlds" through brainwave entrainment mechanisms.
- Magnetic stimulation** of the brain, as with the **God helmet** developed by **Michael Persinger**.^[3]
- Electrical stimulation** of the brain, particularly the **temporoparietal junction** (See below).
- Sensory deprivation**. This approach aims to encourage intense disorientation by removal of space and time references.

Flotation tanks or pink noise played through headphones are often employed for this purpose. OBEs have been reported by those practicing sense-depriving forms of **BDSM** such as extreme bondage (mummification).

- **Sensory overload**, the opposite of **Sensory deprivation**. The subject can for instance be rocked for a long time in a specially designed **cradle**, or submitted to light forms of torture, to cause the brain to shut itself off from all sensory input. Both conditions tend to cause confusion and this disorientation often permits the subject to experience vivid, ethereal out-of-body experiences. This tends to happen when the subject believes he or she is in a particular position, whereas his or her actual body is either rocking in a cradle actively, or still lying down. Consciousness suddenly transfers to the mental body.

Chemical induction

- OBEs induced with **drugs** are sometimes considered to be **hallucinations** (i.e., purely subjective), even by those who believe the phenomenon to be objective in general. There are several types of drugs that can initiate an OBE, primarily the **dissociative hallucinogens** such as **ketamine**, **dextromethorphan** (DM or DXM), and **phencyclidine** (PCP). It has also been reported under the influence of **tryptamine psychedelics** including **dimethyltryptamine** (DMT), and **ayahuasca**. **Salvia divinorum** has been known to produce symptoms in which the user is said to be able to leave their bodies and travel to many places at once. Many users also claim that they feel as if their "soul" falls out of their body.
- **Methamphetamine** has also been known to cause OBEs, not in itself but through lack of sleep. It has been reported that it felt like the person was talking above and behind them and, being under the influence of the drug, had no idea what was happening.
- **Galantamine** is a **Nootropic** that can increase the odds of success when using along with Out-of-body experience or **Lucid dream induction technique**.^{[19][20][21]}

Phenomenology

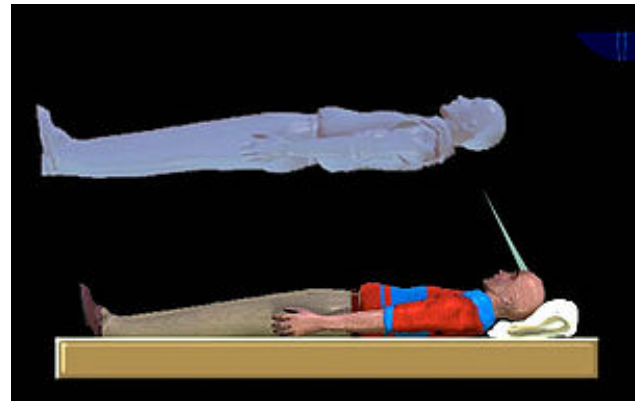
Perceptions of environment

OBEs tend to fall into two types, categorized by **Robert Monroe** as **Locale 1** and **Locale 2** experiences.

In **Locale 1** experiences the environment is largely consistent with reality; other common labels for this form are **etheric**, **ethereal** or **RTZ** (Real Time Zone) projections. The onset of this type can be frightening as intense physiological sensations may be perceived, such as electrical tingling, full body vibrations and racing heartbeat. Confusion is common in spontaneous **Locale 1** experiences; the person can believe he has awakened (or died) physically and panic can be caused by the realization that limbs appear to be penetrating objects.

Locale 2 experiences are less overtly physical in nature and have much subjective overlap with **lucid dreaming**. The subject is immersed in unrealistic worlds, modified forms of reality exhibiting physically impossible or inconsistent features. Bright and vivid colours are a common feature of this form. **Robert Bruce** considers this type of OBE to be an **Astral Projection**.

Progression



Artist's depiction of the separation stage. Though motion is perceived, paralysis is still evident.

An archetypal, classical OBE unfolds through perceptually distinct stages.^{[22][23]}

- **Withdrawal stage**: Conscious interaction with the physical environment ceases. Attention is elsewhere, with sensory inputs going unnoticed; the body is on auto-pilot. Sleeping is an example of this stage.
- **Cataleptic stage**: Movement is totally impaired.^[24] Alternative sensory information may suddenly seem present,

such as intense vibrations, noises and sight through closed eyelids.^[25]

- Separation stage: With effort, the perceptual viewpoint can be pulled away from the physical body location. Still subject to intense sensation, pull back towards the body obstructs progression.^{[26][27]}
- Free movement stage: Beyond a certain radius, movement becomes unimpeded,^[28] with control increasing markedly. Visual and mental clarity can vary greatly, from barely functional to exceptional.
- Re-entry stage: Perceived need to return increases, leading either to voluntary reversal of separation or extremely fast involuntary snap-back. Alternatively, a transition to waking or sleeping may occur.

In practice, the absence of one or more of the classical stages is not unusual. Some (notably **Robert Monroe**) have claimed these stages become considerably less applicable with extreme familiarity with OBE, eventually finding just a deliberate mental shift to the feeling of the state equivalent.^[29] Monroe likened this to tuning a radio away from one station and towards another, and termed the process "phasing".^[30]

End-of-OBE perceptions

The OBE may or may not be followed by other experiences which are self-reported as being "as real" as the OBE feeling; alternatively, the subject may fade into a state self-reported as dreaming, or they may awake completely. The OBE is sometimes ended due to a fearful feeling of getting "too far away" from the body. Many end with a feeling of suddenly "popping" or "snapping" and sometimes a "pulling" back into their bodies; some even report being "sucked back" into physical form. A majority describe the end of the experience by saying "then I woke up". However it's worth noting that even those who describe the experience as something fantastic that occurs during sleep, and who describe the end of the experience by saying "and then I woke up", are very specific in describing the experience as one which was clearly *not* a dream; many described their sense of feeling more awake than they felt when they were normally awake. One

compared the experience to that of lucid dreaming, but said that it was "more real".

NDE phenomenology

The **phenomenology** of an NDE usually includes additional physiological, psychological and transcendental factors beyond those of typical OBEs (Parnia, Waller, Yeates & Fenwick, 2001). Near-death experiences may include subjective impressions of being outside the physical body, visions of deceased relatives and religious figures, and transcendence of ego and spatiotemporal boundaries.^[31] Typically the experience includes such factors as: a sense of being dead; a feeling of peace and painlessness; an out-of-body experience; a tunnel experience (the sense of moving up or through a narrow passageway); encountering people of Light; God-like figures or similar forces; being given a "Life review", and a reluctance to return to life.^[32]

Studies of OBEs

The first extensive scientific study of OBEs was made by **Celia Green** (1968).^[33] She collected written, first-hand accounts from a total of 400 subjects, recruited by means of appeals in the mainstream media, and followed up by questionnaire. Her purpose was to provide a **taxonomy** of the different types of OBE, viewed simply as an anomalous perceptual experience or **hallucination**, while leaving open the question of whether some of the cases might incorporate information derived by **extrasensory perception**.

Previous collections of cases had been made by Dr Robert Crookall; however, he had approached the subject from a spiritualistic position, and collected his cases predominantly from spiritualist newspapers such as the *Psychic News*, which appears to have biased his results in various ways. For example, the majority of his subjects reported seeing a **cord** connecting the physical body and its observing counterpart; whereas Green found that less than 4% of her subjects noticed anything of this sort, and some 80% reported feeling they were a "disembodied consciousness", with no external body at all.

Neurology and OBE-like experiences

There are several possible physiological explanations for parts of the OBE. Experiences

have been induced by stimulation of the brain and by using cameras to fool the mind into thinking that the body is somewhere it is not. The OBE has been reproduced through stimulation of the posterior part of the right superior temporal gyrus in a patient.^[34] Positron-emission tomography was also used in this study to identify brain regions affected by this stimulation.

English psychologist Susan Blackmore suggests that an OBE begins when a person loses contact with sensory input from the body while remaining conscious. The person retains the illusion of having a body, but that perception is no longer derived from the senses. The perceived world may resemble the world he or she generally inhabits while awake, but this perception does not come from the senses either. The vivid body and world is made by our brain's ability to create fully convincing realms, even in the absence of sensory information. This process is witnessed by each of us every night in our dreams, though OBEs are claimed to be far more vivid than even a lucid dream.

Irwin^[35] pointed out that OBEs appear to occur under conditions of either very high or very low arousal. For example, Green^[36] found that three quarters of a group of 176 subjects reporting a single OBE were lying down at the time of the experience, and of these 12% considered they had been asleep when it started. By contrast, a substantial minority of her cases occurred under conditions of maximum arousal, such as a rock-climbing fall, a traffic accident, or childbirth. McCreery^{[37][38]} has suggested that this paradox may be explained by reference to the fact that sleep can supervene as a reaction to extreme stress or hyper-arousal.^[39] He proposes that OBEs under both conditions, relaxation and hyper-arousal, represent a form of "waking dream", or the intrusion of Stage 1 sleep processes into waking consciousness.

Van Lommel studies

The first clinical study of near death experiences (NDE's) in cardiac arrest patients was by Pim van Lommel and his team (*The Lancet*, 2001),^[40] a cardiologist from the Netherlands. Of 344 patients who were successfully resuscitated after suffering cardiac arrest, approximately 18% experienced "classic" NDE's, which included out-of-body experiences. The patients remembered details of their conditions during their cardiac arrest

despite being clinically dead with flatlined brain stem activity. Van Lommel concluded that his findings supported the theory that consciousness continued despite lack of neuronal activity in the brain. Van Lommel conjectured that continuity of consciousness may be achievable if the brain acted as a receiver for the information generated by memories and consciousness, which existed independently of the brain, just as radio, television and internet information existed independently of the instruments that received it.^[41]

The skeptic, Michael Shermer's interpretation of Van Lommel's study,^[42] as demonstrating that the mind was not separate from the brain was criticised by Jay Ingram of the Canadian Discovery Channel, who commented: "[Shermer's] use of this study to bolster his point is bogus. He could have said, 'The authors think there's a mystery, but I choose to interpret their findings differently'. But he didn't. I find that very disappointing."^[43]

Olaf Blanke studies

Research by Olaf Blanke in Switzerland found that it is possible to reliably elicit experiences somewhat similar to the OBE by stimulating regions of the brain called the right temporal-parietal junction (TPJ; a region where the temporal lobe and parietal lobe of the brain come together). Blanke and his collaborators in Switzerland have explored the neural basis of OBEs by showing that they are reliably associated with lesions in the right TPJ region^[44] and that they can be reliably elicited with electrical stimulation of this region in a patient with epilepsy.^[45] These elicited experiences may include perceptions of transformations of the patient's arm and legs (complex somatosensory responses) and whole-body displacements (vestibular responses).^{[46][47]}

In neurologically normal subjects, Blanke and colleagues then showed that the conscious experience of the self and body being in the same location depends on multisensory integration in the TPJ. Using event-related potentials, Blanke and colleagues showed the selective activation of the TPJ 330–400 ms after stimulus onset when healthy volunteers imagined themselves in the position and visual perspective that generally are reported by people experiencing spontaneous OBEs. Transcranial magnetic stimulation in the same subjects impaired mental

transformation of the participant's own body. No such effects were found with stimulation of another site or for imagined spatial transformations of external objects, suggesting the selective implication of the TPJ in mental imagery of one's own body.^[48] In a follow up study, Arzy et al. showed that the location and timing of brain activation depended on whether mental imagery is performed with mentally embodied or disembodied self location. When subjects performed mental imagery with an embodied location, there was increased activation of a region called the "extrastriate body area" (EBA), but when subjects performed mental imagery with a disembodied location, as reported in OBEs, there was increased activation in the region of the TPJ. This leads Arzy et al. to argue that "these data show that distributed brain activity at the EBA and TPJ as well as their timing are crucial for the coding of the self as embodied and as spatially situated within the human body."^[49]

Blanke and colleagues thus propose that the right temporal-parietal junction is important for the sense of spatial location of the self, and that when these normal processes go awry, an OBE arises.^[50]

In August 2007 Blanke's lab published research in *Science* demonstrating that conflicting visual-somatosensory input in virtual reality could disrupt the spatial unity between the self and the body. During multisensory conflict, participants felt as if a virtual body seen in front of them was their own body and mislocalized themselves toward the virtual body, to a position outside their bodily borders. This indicates that spatial unity and bodily self-consciousness can be studied experimentally and is based on multisensory and cognitive processing of bodily information.^[51]

Michael Persinger studies

Michael Persinger has undertaken similar research to Olaf Blanke using magnetic stimulation applied to the right temporal lobe of the brain, which is known to be involved in visuo-spatial functions, multi-sensory integration and the construction of the sense of the body in space.^[52] Persinger's research also found evidence for objective neural difference between periods of remote viewing in two individuals thought to have psychic abilities. Persinger undertook his research on Sean Harribance and Ingo Swann, a

renowned remote viewer who has taken part in numerous studies.^[53] Examination of Harribance showed enhanced EEG activity within the alpha band (8–12 Hz) over Harribance's right parieto-occipital region, consistent with neuropsychological evidence of early brain trauma in these regions. In a second study, Ingo Swann was asked to draw images of pictures hidden in envelopes in another room. Individuals with no knowledge of the nature of the study rated Swann's comments and drawings as congruent with the remotely viewed stimulus at better than chance levels. Additionally, on trials in which Swann was correct, the duration of 7 Hz (alpha band) paroxysmal discharges over the right occipital lobe was longer. Subsequent anatomical MRI examination showed anomalous subcortical white matter signals focused in the perieto-occipital interface of the right hemisphere that were not expected for his age or history.

Ehrsson study

In August 2007 Henrik Ehrsson, then at the Institute of Neurology at University College of London (now at the Karolinska Institute in Sweden) published research in *Science* demonstrating the first experimental method that, according to the scientist's claims in the publication, induced an out-of-body experience in healthy participants.^[54] The experiment was conducted in the following way:

The study participant sits in a chair wearing a pair of head-mounted video displays. These have two small screens over each eye, which show a live film recorded by two video cameras placed beside each other two metres behind the participant's head. The image from the left video camera is presented on the left-eye display and the image from the right camera on the right-eye display. The participant sees these as one "stereoscopic" (3D) image, so they see their own back displayed from the perspective of someone sitting behind them. The researcher then stands just beside the participant (in their view) and uses two plastic rods to simultaneously touch the participant's actual chest out-of-view and the chest of the illusory body, moving this second rod towards where

the illusory chest would be located, just below the camera's view. The participants confirmed that they had experienced sitting behind their physical body and looking at it from that location.^[55]

The experiment fits a three-point definition of the out-of-body experience (OBE). The OBE as reported in spontaneous cases can be phenomenologically more complex as commented in *Slate*^[56] and elsewhere.^[57]

Dr. Sam Parnia – University of Southampton study

In the fall of 2008, 25 UK and US hospitals began participation in a 3 year study, co-ordinated by Dr. Sam Parnia and **Southampton University**. Following on the work of Van Lommel in the Netherlands, the study aims to examine near-death experiences in 1,500 cardiac arrest survivors and so determine whether people without a heartbeat or brain activity can have documentable out-of-body experiences.^[58]

Astral projection

Astral projection is a **paranormal** interpretation of **out-of-body experience** that assumes the existence of one or more non-physical planes of existence and an associated body beyond the physical. Commonly such planes are called *astral*, *etheric*, or *spiritual*. Astral projection is often experienced as the spirit or astral body leaving the physical body to travel in the spirit world or astral plane.^[59]

Evidence for objective reality of projection on to the etheric plane (a near-copy of the physical plane) is sometimes suggested when people, such as patients during surgery, describe OBEs in which they see or hear events or objects outside their sensory range (for instance, Pam Reynolds reported experiencing an OBE during brain surgery and described a surgical instrument she had not seen previously, as well as conversation that occurred while she was under anesthesia).^[60]

Skeptics such as Susan Blackmore have disputed whether anything leaves the body during an OBE.^[61]

See also

- Lucid dreaming

- Alice in Wonderland syndrome
- Dissociation
- Depersonalization
- Depersonalization disorder
- Hallucinations in the sane
- Hypnagogia
- Macropsia
- Nightmare
- Galantamine
- Bilocation

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External links

- OBE in the science mainstream news
- Website of OBE author William Buhlman
- Out-of-body and Near-death experiences Articles, videos and discussions on out-of-body and near-death experiences.
- An in-depth psychological and philosophical analysis of OBEs and self-perception
- "Out-of-Body Experience (OBE)" – from the *Skeptic's Dictionary*
- "How To Use Waking Sleep Paralysis To Induce OBEs" at Youtube

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