

Where am I? : Perspectives in Imagery and the Out-of-Body Experience

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The literature on the out-of-body experience (OBE) is briefly reviewed. The theory is put forward that the OBE is an "illusion of reality." It involves the substitution of the normal input driven model of the external world by an internally generated model in "observer" perspective. The theory predicts that people who have OBEs should be more likely to use observer perspectives in imagery, memory and dreams, should be better able to use different viewpoints and to switch viewpoints when required. Three studies are reported. It was confirmed that OBEs are more likely to use the observer perspective in recall of dreams but not of real-life events. They are better able to switch viewpoints in imagery and report clearer and more vivid images from different viewpoints.

An *out-of-body experience* (OBE) may be defined as an experience in which a person seems to be awake and to perceive the world from a location outside of the physical body. In other words, it seems to the experienter as though he or she has left the body.

Such experiences have been reported from many ages and cultures (Blackmore, 1982a; Shells, 1978). They have been studied (as astral projection or traveling clairvoyance) within early psychological research (Myers, 1903) and more recently within parapsychology (e.g., Blackmore, 1982a; Rogo, 1978) and they form an integral part of the near-death experience recently described by Ring (1980), Sabom (1982) and others (Greyson & Flynn, 1984). They are not, however, confined to near-death or even stressful situations. Indeed, they can occur under circumstances ranging from life-threatening stress (Noyes & Kleitli, 1976; Siegel 1984) to meditation, relaxation or even walking or driving (Blackmore 1984a; Green 1968).

The experience itself varies but typically the experienter suddenly finds himself looking down at his own body lying in bed, or in the crashed car or on the operating table. He does not know how he got there but is totally convinced that "he" is up there, and the body below is unimportant.

The surroundings may look totally convincing or be highly distorted but an almost invariable feature is that they are described as completely "real." People often report that this was not like a dream but like waking reality. Often they claim it affected their beliefs or reduced their fear of death. Here is a simple example; an experience which happened to a woman on holiday in Ireland.

"Suddenly — without any apparent cause, I was aware of being outside my body, looking down from afar at the three of us — a spectator! I believe it only lasted momentarily but it was very real!"

This one happened with no apparent cause, but many seem to be precipitated by acute stress or physical trauma. The following occurred in a hospital during childbirth.

"I woke twice in one night to find myself floating above the body, which I could turn to see, fast asleep in bed. I came into the upright position and found I only had to look at an object and think of approaching for the acceleration toward it to occur. I glided toward a patient... my hearing was acute and I could hear the person's breathing. I could have heard a pin drop. "Sight also was acute.... Since then I'm not afraid of death."

As in this case, experiencers may seem to move around and travel to distant locations. Sometimes they even claim to bring back information, which is obviously important for parapsychology. Many, though not all, seem to have a duplicate body of some sort and many observe themselves as though from outside. Most experiences end abruptly with a sudden transition back to normal perspective. Some people are frightened and relieved to find that it is over while others enjoy and welcome the experience. Some worry that the experience is pathological but there is little evidence that it is related to any kind of psychiatric illness (Blackmore, 1982a; Gabbard & Twenlow, 1985).

OBEs are far from being rare. Surveys show that somewhere between 8% and 25% of the general population claims to have had at least one OBE during their life (e.g., Blackmore, 1984a; Haraldsson et al., 1977; Palmer, 1979). There are no obvious demographic features which distinguish OBEs from others and, indeed, it has proved difficult to find anything which reliably distinguishes them (Blackmore, 1982a; Green, 1968). Some personality differences have been found (Myers, Austin, Grisso, & Nickeson, 1983), but generally OBEs are found to be more rather than less well adjusted than others (Gabbard & Twenlow, 1985).

There are two main approaches to understanding the OBE. First there are the "separation" theories. These include the theory of astral projection which claims that a duplicate "astral body" separates temporarily from the physical body and various other theories involving separation of mind, soul and so on (see Rogo, 1978). Contrasted with these are the so-called "psychological theories" of the OBE. These claim that nothing leaves the body and that the experience must be accounted for in terms of memory, imagination or hallucination. Some of these have little or nothing to say about the possibility of ESP (extrasensory perception) during the OBEs.

Others explicitly treat the OBE as a combination of imagination and ESP (Rogo, 1978).

The separation theories all face enormous difficulties in defining what leaves and specifying how it is able to interact with the physical world so as to perceive it (see Blackmore, 1982a). They do, however, make obvious predictions: for example, all of them predict that OBEs should be able to obtain veridical information from out-of-body locations. Some predict that they ought to be able to affect objects at distant locations and so be detected there. Experiments have attempted to test these predictions since the early days of psychical research (e.g., de Rochas, 1906; see Blackmore 1982a for a review). More recently there have been detailed studies of perception and detection during OBEs. Although there have been a few notable successes (e.g., Tart, 1968) this research has generally been unproductive. Information acquisition seems much like that in other kinds of ESP experiments; occasionally above chance, but not reliably so (Blackmore, 1982b). Also, no reliable detector of an out-of-body presence has been found (Morris et al., 1978). Research continues but so far has not provided the kind of progress which could bring these theories beyond the level of speculation.

This throws the onus onto the "psychological theories." Palmer (1978) treats the OBE as an attempt to reintegrate the body image in the face of a threat to the ego brought about by proprioceptive changes and distortions of the body image. Ehrenwald (1974) considers it a means of denying death and Noyes and Kletti (1976) as derealization in the face of life-threatening danger. Siegel (1980) treats it as purely hallucinatory and Sagan (1979) and Honegger (1983) compare it with the birth experience, an analogy I find less than compelling (Blackmore, 1983a). Both Rogo (1982) and myself (Blackmore, 1982a) have reviewed these theories and argued that all have deficiencies and none can account satisfactorily for the phenomenology of the experience.

It is also very hard to derive specific predictions from these theories. It has been argued that the psychological theories predict that OBEs should have better or more vivid imagery. In fact, OBEs have been found not to differ from others in tests of vividness of imagery or control of imagery (Blackmore, 1983b; Cook & Irwin, 1983). This could be taken as evidence for the separation theories, but some psychological theories also predict this (Blackmore, 1984b). Also, there is evidence that OBEs score higher on a performance-based spatial imagery task (Cook & Irwin, 1983) and have a greater capacity for absorption in inner experiences, as measured by Tellegen's Absorption Scale (Gabbard & Twemlow, 1985; Irwin, 1981; Myers, Austin, Grisso, & Nickeson, 1983). Also, OBEs are more common in those with a "fantasy prone personality" (Myers & Austin, 1986; Wilson & Barber, 1982). However, the theories as they stand do not make sufficiently precise predictions for these findings to have much utility.

An additional problem is that the OBE may not be one unitary phenomenon. It may be that more than one theory is needed to account for the diversity of the experience. However, in the absence of any clear typology of OBEs, we may be best to attempt a theory of them all.

I have recently proposed a psychological theory of the OBE which, I shall argue, can account for the phenomenology of the OBE and make specific and testable predictions (Blackmore, 1984b). This theory starts by asking why our perceptions normally seem "real." It rests on two simple suppositions: First, that the cognitive system has to decide which of its models represents external reality and, second, that it chooses one and only one — the most stable. The most stable model is normally the input-driven one but if this breaks down other models will take over. The OBE is then seen as one result of such a breakdown. It occurs when an internally generated model takes over the role of "reality" from an input based model.

The first point rests on considering how the cognitive system knows what is input and what is internally generated; in other words, how it sets about reality testing. It is clear that input cannot be tagged as such; it is too inextricably bound up with recalled information during input processing. Also, if one asks what units of information could be tagged, there is no obvious answer. Categories change dramatically as information passes through the system. A thing is not the same thing from retina to cortex. So there are no obvious units to be tagged. It makes more sense to suggest that the decision is made at a far higher level. Let us suppose that at any time the cognitive system holds many high level models. Some of these are involved in thinking and imagining but only one represents external reality. How does the system know which is which?

It can first make use of a powerful constraint (and such constraints are always useful (Marr, 1982) that there is *only one* external reality. So it knows it must choose only one model. What then distinguishes the model based on input? Perhaps most important is that it adequately predicts future input. But what does this mean? It clearly cannot mean an infinite regress of models of future models. Rather, it may mean that input is represented in terms which are relatively invariant through changes in input — such as representing changing input as "a chair falling over" rather than a disconnected series of changing features. This is a particular aspect of the more general characteristic of stability. So let us suppose that the criterion for "reality" is stability. In other words, the cognitive system chooses its most stable model as representing the external world. (Note that the argument would not be greatly altered if some other criterion, such as complexity or coherence, were used instead.)

Normally, of course, the input-driven model is the most stable. If there is any doubt it can always be checked against new input — by looking around, blinking, touching and so on. Also, we cannot choose to swap to

another "reality" because we cannot make any other model a good enough competitor. So we are safely confined to seeing the world of input as "real."

However, under certain circumstances the stability of the input-driven model may be threatened. This may happen when sensory input is reduced, for example, before and during sleep, or when input is confounded with noise induced by drugs, anoxia and so on, or when fear, stress or pain provide incentives for rejecting input. If the input-driven model becomes unstable, its supremacy may be challenged. If some other model is more stable it will *ex hypothesi* take over as reality and seem real.

What happens next depends very much on the nature of the competing model. Obviously, most models involved in daydreaming or thinking would, if they took over, lead to hallucinations and therefore the system should seek to avoid this happening. Interestingly, it is this attempt at avoidance which may actually give rise to an OBE.

When the input-driven model is threatened, the system will presumably normally seek to return to input control. One way of doing this is to reconstruct a model of the remembered surroundings from the top down. If this is an adequate model it will again predict future input and so be stabilized. Normality will be restored. On the other hand, it may not be good enough to predict input. Indeed it is known that many people construct memory images as though from an "observer" perspective (Galton, 1883; Nigro & Neisser, 1983). If such a model is constructed and is sufficiently stable, then it will take over and an OBE will have occurred. In other words, the attempt to return to input control results in a cognitive representation of the surroundings taking over as "reality."

This "observer" model would be incompatible with visual input but it could more easily incorporate auditory input. This may explain what happens in near-death experiences. Residual hearing may be sufficient to provide the information on which to construct a convincing, and partly accurate, representation of what is going on. Reports of patients who "observe" their operations or resuscitation could then be explained without recourse to the paranormal.

This may be especially likely to occur to people who have some facility with using observer viewpoints and those who can readily switch from one to another. It is also likely if there is some reason to prefer an external or observer viewpoint. In cases of severe pain, shock or fear there is a strong incentive to dissociate oneself from the source of the pain. In other words, such stress may help to stabilize the observer viewpoint at the expense of the normal viewpoint. If this viewpoint is more stable, it will seem more real. This motivated switch to a different perspective will be easiest for people who have the skill to switch perspectives at will.

Of course, if at any time the bottom-up input processing can produce a more stable model this will oust the OBE model. There will be a sudden

return to normal perspective and normal "reality."

This approach to the OBE explains how the shift in perspective comes about, why the out-of-body world appears much like the cognitive map (Blackmore, 1978), and why the experience seems so real. It accounts for the sudden shift back to normal perspective and it makes sense of the conditions under which the experiences occur — they often involve either reduced or noisy sensory input.

This theory makes several predictions about the people who should be most likely to have an OBE.

Two things are necessary for an OBE. First the input-driven model must become less stable and, second, the internally generated "observer" model must become more stable. To produce an OBE at will, both processes should be under control, but deliberate OBEs are a very small minority (Blackmore 1984a; Palmer 1979) and I shall not consider them here. For a spontaneous OBE, the input-driven model is destabilized by the circumstances. What is needed is the ability or incentive to construct a stable alternative model, the ability to switch to that model when desired and the ability to become absorbed in that model to the exclusion of others.

Paradoxically, good imagery skills may help to avoid an OBE as much as to bring one about, because they aid the attempt to restore "normality" by constructing a good eye-level model. For this reason the failure to find a positive correlation between imagery skills and the OBE is not surprising.

More important should be the ability to use alternative viewpoints. Galton long ago pointed out that some people "have the habit of recalling scenes, not from the point of view whence they were observed, but from a distance, and they visualise their own selves as actors on the mental stage" (Galton, 1883, pp. 98-99). A hundred years later Nigro and Neisser (1983) have made the distinction between memories recalled in field perspective (equivalent to Galton's "from whence they were observed") and in "observer" perspective. They showed that the observer perspective is more likely to be used when recalling situations with a high degree of emotion and self-awareness, and when recalling older memories.

We would expect OBEs to be those who commonly use such an "observer perspective" in imagination and thinking, and who can easily switch to this viewpoint when they wish.

Three studies were carried out to test these predictions.

Experiment 1

Method
Subjects. In the first study subjects were 98 psychology students at the University of Bristol. Ages ranged from 18 to 38 with a mean age of 20. There were 39 males and 54 females (5 did not give their sex).

Procedure. The students were given a questionnaire in class. This was in three parts. Part A asked them to recall six scenes: their bedroom, the

Experiment 2

Method

Subjects. There were 135 subjects, tested in four groups. Females comprised 68% and ages ranged from 17 to 94, with a mean age of 43.1 years.

Procedure. The subjects were asked to imagine the room in which they were sitting (various classrooms and libraries) from 4 or 5 different locations. They then had to rate how clear and vivid their image of the room was using a scale from 1 (no image) to 7 (a perfectly clear and detailed image). The locations were at eye level in the doorway, by the ceiling above their own head, by the ceiling above someone else's head, by their feet and at their own eye level. The last of these was used for only 63 of the subjects.

It was predicted that the viewpoint from normal eye level should be the easiest to imagine, followed by that most commonly used in OBEs, that is, above the head.

The subjects were also asked where they normally perceive their "self" or "center of awareness" to be and were asked to try to switch their viewpoint or center of awareness from its normal position to above their head and back, and from their normal position to their feet. They were asked to rate how easily they could do this on a scale from 1 (not at all) to 7 (extremely easily). It was predicted that it would be much easier to switch to a position above the head than to the feet.

Finally they were asked whether at any time during the exercises they either saw their own body from the outside, or seemed to have another body at their imagined location. They were asked whether they had ever had a lucid dream or an out-of-body experience. It was predicted that those who had had OBEs (OBErs) would rate their images from different locations as more clear and detailed, though not their images from the normal eye level viewpoint. It was also predicted that they would more easily be able to switch viewpoints from one position to another.

Results

As expected, the room was easiest to imagine from the subjects' own eye level and most difficult from the feet. However, the second easiest was at eye level in the doorway — not above the head. So this prediction was not confirmed (see Table 1).

As expected, it was much easier to switch viewpoints to a position

Table 1
Mean Scores for Different Imagined Viewpoints (1-7 Scale of Vividness)

Position	\bar{X} (scale 1-7)
Own eye level	4.5
Eye level, doorway	3.8
Above other's head	3.6
Above own head	3.5
At own feet	3.4

layout of their house or flat, the route taken to the university, the last time they were at the seaside, the last time they went to the pub and (with eyes shut) the room they were in at the time. In each case they were asked whether they seemed to see the scene from eye level as they would have seen it at the time, from above as though watching themselves or from some other vantage point. For each scene they were then asked to try to switch to a different viewpoint and asked how easily they could do this (easily, with difficulty or No).

Part B contained questions on visual distortions and Part C on bodily distortions. The results have been reported elsewhere (Blackmore & Harris, 1983). Part C included Palmer's (1979) question on OBEs. Some subjects were also given the space relations test from the Differential Aptitude Test Battery. These results are reported elsewhere (Blackmore, 1983b).

It was predicted that those who had OBEs would more often recall scenes from above, as though watching themselves, and that they would find it easier to switch viewpoints.

Results

Thirty (31%) of the students reported having had at least one OBE. Most (89%) of these had had more than one. There were no significant age or sex differences between OBErs and others ($t = 1.39$, 92 df and chi square = 3.48, 1 df).

The first prediction was not confirmed. There was no difference in the number of scenes recalled as though from above between the OBErs ($x = 2.6$) and others ($x = 2.2$, $t = 1.23$, 95 df).

The second prediction was confirmed. Subjects were given a score from 0 to 12 for ability to switch viewpoints (i.e., 0, 1 or 2 for each of six questions). OBErs had a significantly higher score than others ($x = 10.0$, $x = 9.0$, $t = 2.02$, 95 df $p < .05$).

Discussion

OBErs clearly differed from others in their ability to switch viewpoints, but not in their preferred use of the observer viewpoints. There might be several reasons for this. For example, an OBE typically involves viewing the present surroundings from above. Only one of the six questions concerned present surroundings. The others concerned recall of prior events and this might involve different processes. Also, the questions only asked about the preferred viewpoint. They did not establish whether the students could use the observer viewpoint if requested. Ability to use different viewpoints may be more important than preference. The second study was therefore designed to find out how easily subjects could imagine their present surrounding from a variety of different viewpoints.

above the head (mean rating, 3.7) than to one at the feet (mean rating, 2.1). During these various exercises 22% of the subjects claimed that they saw themselves from the outside and 15% that they had another body in their imagined location.

The most common position of normal center of awareness was behind the eyes (65%). The next most common positions, the top of the head and the forehead, took only 6% of subjects each (see Table 2).

Table 2
Location of "Self" or "Center of Awareness"

Behind eyes	65%	Neck	2%
Whole body	10%	Heart	1%
Forehead	6%	Other	11%
Top of head	6%		

Twenty-two per cent of the subjects reported having had at least one OBE. This is close to the incidence obtained in previous random surveys (see Blackmore, 1982a, for a review).

As predicted, the OBEs showed considerably more ability at the imagined viewpoints exercises. For all positions combined, OBEs rated their images as clearer and more detailed (see Table 3). When the four positions used by all subjects are pooled, OBEs scored significantly higher than non-OBEs ($t = 1.71$ 52 df $p = .047$ 1-tailed). Interestingly, the biggest difference between OBEs and non-OBEs was in the ability to imagine the room from a position on the ceiling above their own head.

Table 3

Comparison of OBEs and Non-OBEs for Vividness of Imagery from Different Viewpoints

	Mean rating — Scale 1-7		
	OBEs	Non-OBEs	p (1-t)
Eye level, doorway	4.1	3.7	<.05
Above other's head	4.1	3.4	
Above own head	4.2	3.3	<.01
At own feet	3.5	3.4	
TOTAL	15.8	13.8	<.05

OBEs were also significantly better at switching from one viewpoint to another, and again the effect was largest when switching from the normal position to one above the head (see Table 4), ($t = 2.72$ 60 df $p = .0045$ 1-tailed).

Table 4

Are OBEs Better at Switching Viewpoints?

	Mean rating — Scale 1-7		
	OBEs	Non-OBEs	p (1-t)
To above own head	4.5	3.4	<.01
To own feet	2.7	1.9	

Discussion

From this study it was confirmed that OBEs are better at using different viewpoints in imagination, and at switching from one position to another. However, the common OBE viewpoint, above the head, does not seem to be particularly easy to imagine.

From these two studies it now appears that OBEs do not prefer to use an observer viewpoint in recall, but if asked to imagine it will report more vivid images than non-OBEs. This might imply that OBEs occur when circumstances make an observer viewpoint preferable and happen to people who are able to switch to that viewpoint (whether or not they normally use it).

In this light it would be interesting to know what circumstances do promote use of an observer viewpoint. If it is used as an escape from unpleasant events we would expect it to be used during recall of unpleasant rather than pleasant scenes. The third study tested this. Rather than use the possibly stressful recall of unpleasant events, dream recall was used. Viewpoints were tested for recall of a variety of real-life events and dreams.

Experiment 3

Method

Subjects. Subjects were 187 students, mostly school sixth formers but also some university and adult education students. Ages ranged from 17 to 75, but most were 17 to 20. There were 98 females and 89 males.

Procedure. Subjects were given a questionnaire about their dream life and asked whether they had ever had an OBE. They were then asked, in a way similar to that used in Nigro and Neisser's (1983) study, to remember seven events, to write brief descriptions of these events and then to say whether they imagined them as though from the position of an observer (who would see themselves in the scene) or from a position as they would have seen it looking from where their eyes were. There were three "real life" situations to recall (first thing this morning, this time last Sunday and this time on Christmas Day) and four dreams (last night's, last week's, the best and worst dreams they could remember).

First of all it was predicted that the more recent events would be less often recalled in observer perspective and, second, that bad dreams would more often be recalled in observer perspective. The main prediction was (as in Experiment 1) that those who had had OBEs would more often use the observer perspective in all these recall tasks.

Results

The different recall situations differed markedly in the proportions of viewpoints used (see Table 5). As predicted, the most recent event (this morning) was least often recalled in observer perspective (14%). Also, as predicted, the worst dreams were far more often recalled in observer

perspective than the best dreams were (34% and 23%, respectively).

Table 5
Use of Viewpoints in Recall and Dreams

	% Recall	% Observer Viewpoint
RECALL		
This morning	89	14
Last Sunday	95	43
Christmas Day	95	46
DREAMS		
Last night	36	31
Last week	58	33
Best dream	58	23
Worst dream	88	34

Of the subjects, 50% reported having had an OBE. This presented a problem in that it is much higher than the figure found in previous surveys and may be artificially inflated by the inclusion of other kinds of experience. Alternatively, it could be that school children do have more OBEs. To check this a further questionnaire was sent to all the school children who reported OBEs, asking them to describe their experience in more detail. On the basis of this questionnaire, only 38 (23%) were classified as OBEs, many answering that they had not had such an experience after all. This is much closer to previous survey figures. There was no sex difference between OBEs and others ($\chi^2 = 0.32$ 1df).

To compare the use of viewpoints in recall, subjects were given a score according to whether they more often used the observer or own viewpoint. This was obtained by subtracting the number of memories in each perspective and dividing by the total. There was no correlation between this score and whether or not OBEs were reported ($r = .07$).

However, a difference is seen when the recall tasks are taken separately. For each of the recall tasks, the percentage of people using an observer viewpoint (out of those giving unambiguous viewpoints) was compared for OBEs and others. The results are shown in Table 6. For the recall of

Table 6
Percentage of OBEs and Others Using the Observer Viewpoint in Recall and Dreams

	% Observer Perspective OBEs	Non-OBEs
RECALL		
This morning	10	14
Last Sunday	39	42
Christmas Day	42	41
DREAMS		
Last night	39	27
Last week	40	24
Best dream	32	13
Worst dream	34	26

real-life events there are no differences, but OBEs consistently recalled dreams more often in observer perspective than did non-OBEs.

Discussion

Several of the predictions were confirmed. As expected, unpleasant dreams were more often recalled in observer perspective. This provides support for the idea that perspective is used as an escape from unpleasant situations and so may precipitate an OBE.

The main prediction was confirmed for dream recall. It appears that OBEs do not more often use an observer viewpoint in recall of real-life situations, but they do more often use it in dream recall. This is consistent with the negative findings of Experiment 1 and shows the importance of testing for different kinds of tasks. It would now be useful to look at viewpoints in a wider variety of imagery and memory tasks.

Summarizing the results of the three studies we can now conclude that OBEs are better than others at switching from one viewpoint to another (especially to the viewpoint above the head), more proficient at producing clear and detailed images from different viewpoints, and tend to use the observer viewpoint in dream recall. The findings that the easiest switch is to a viewpoint above the head, and that an observer viewpoint is more often used in recalling unpleasant dreams, tend to confirm the analysis of OBEs presented here.

A general problem is that all these studies are retrospective. An alternative interpretation is that people's imagery abilities and preferred viewpoints are altered by having an OBE (whatever the explanation of that experience may be). This can only be studied by comparing imagery before and after an OBE, which is difficult, though not impossible, to do. Clearly, much further research is needed to explore the relationships between imagery and the OBE.

Conclusion

The study of visual illusions contributed a great deal to our understanding of perception (Gregory, 1966). The OBE may now be seen analogously, as an illusion of "reality." The experience itself is no less "real" than any other experience and may even feel more so, but judged against the physical stimulus it is, just like visual illusions, in error. And, just like visual illusions, the error may provide an insight into the normal processes at work. The research reported here confirms the value of treating the OBE this way and suggests that the OBE may teach us how we normally make our perceptual world seem real.

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