OUT-OF-BODY EXPERIENCES AND HALLUCINATORY EXPERIENCES: A PSYCHOLOGICAL APPROACH

ALEJANDRO PARRA

Universidad Abierta Interamericana, Buenos Aires, Argentina

ABSTRACT

In an out-of-body experience (OBE), the "self," or center of awareness, seems to temporarily occupy a position spatially remote from one's body. In support of previous studies, undergraduate students reporting OBEs (N = 132) showed a higher level of cognitive-perceptual schizotypy, absorption, dissociation, fantasy, and hallucination proneness, and visual imagery than did non-OBErs (N = 516). Absorption and cognitive-perceptual schizotypy were the best discriminators for visual and tactile hallucinations $(p \le .001)$. The results support a dissociation model of OBEs. Some persons reported beneficial adaptive effects from their OBEs. Despite the widespread occurrence of anomalous perceptual experiences, including OBEs, in the general population, the term hallucination still has pejorative overtones. The present results are in agreement with other studies in which measures of fantasy proneness seemed to be successful predictors of psychic phenomena (Myers, Austrin, Grisso, & Nickeson, 1983; Wilson & Barber, 1982). Such findings suggest that OBEs may be related to fantasy proneness and cognitive-perceptual schizotypy, which are correlated with each other. Future research should focus on the role of different types of OBEs in personality and cognitive processing.

Irwin (1985) has defined an out-of-body experience (OBE) as an experience in which the "self," or center of awareness, seems to the person having the OBE to temporarily occupy a position spatially remote from the body. This

topic has received a great deal of attention in recent years (Alvarado, 1986; Alvarado & Zingrone, 1999; Irwin, 1985; Palmer, 1979). A surprisingly large percentage of the population appears to have experienced at least one OBE: several surveys have yielded positive response rates in the neighborhood of 15% (e.g., Blackmore, 1984a, 1984b; Palmer, 1979), and the corresponding rate in student samples is 25% (Irwin, 1985; Myers, Austrin, Grisso, & Nickeson, 1983).

Some studies have shown a strong relationship between the incidence of OBEs and psychological variables (Irwin, 1985), especially schizotypy (McCreery & Claridge, 1995), self-efficacy, self-control (Tobacyk, Wells, & Millar, 1998), the personality dimensions of the five-factor model (such as NEO-PI-R; Alvarado, Zingrone, & Dalton, 1996), absorption (Glicksohn, 1990; Irwin, 1980), and dissociative experiences (Gabbard, Twemlow, & Jones, 1981; Myers et al., 1983; Richards, 1991).

Some OBEers report that the exteriorized self has a definite form, called the parasomatic body, or (in occult literature) the astral body. Estimates of the incidence of the parasomatic body vary widely, from 15 to 84% of OBEs (Irwin, 1985). Over 90% of OBEs are visual (Green, 1968, pp. 67-68), often exclusively so. Some OBEers claim that they can control the content of their OBEs. In one survey, Irwin (1985) found that nearly half of his OBEers reported this effect. Such control seems strictly cognitive; that is, the OBE content can be manipulated by directing attention to the desired outcome.

One OBE dimension of obvious relevance in this regard is vividness of visual imagery. There has been some research into the vividness of OBEers' visual imagery, but the issue is by no means resolved. For example, Palmer and Vassar (1974) observed a positive relationship between the veridicality of experimentally induced OBEs and scores on a form of the Betts Questionnaire upon Mental Imagery (QMI; see Sheehan, 1967). It might be expected that if the OBE were simply an imaginal experience, some dexterity in imagery processes would be required in order to conjure up a vivid image of one's own body and of the immediate surroundings as they would appear if observed from a point near the ceiling, as noted above.

Irwin (1981) has also studied the OBE in relation to Tellegen's concept of absorption, which is described as a capacity for episodes of absorbed and "self-altering" attention that are sustained by imaginative representations (Tellegen & Atkinson, 1974). During such episodes, individuals become totally absorbed in their experience, with "a full commitment of available perceptual, motoric, imaginative, and ideational resources to a unified representation of the attentional object" (Tellegen & Atkinson, 1974, p. 269). Irwin (1981) has claimed support for his hypothesis that individuals reporting out-of-body experiences would score high on absorption as measured by the Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974). He also found that persons with high absorption scores were more susceptible to an experimental OBE induction technique

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than those with low scores. The positive relationship consistently found between OBEs and absorption experiences is the first formal link to be established between OBEs and dissociation (Alvarado & Zingrone, 1997; Irwin, 1985). Absorption is generally considered to be the most common of all dissociative experiences (Tellegen & Atkinson, 1974).

Furthermore, there is evidence that persons who have reported spontaneous OBEs tend to have a higher level of imaginative/fantasy activity or fantasy proneness than non-OBEers, which is consistent with Wilson and Barber's (1982) characterization of the fantasy-prone personality and may support suggestions by Blackmore (1978) and by Siegel (1980) that OBEs could be hallucinatory fantasies, which would be especially easy for fantasy-prone persons to produce. It is also consistent with the finding that people who are more attentive to their mental processes may be more open to experiencing OBEs (Irwin, 1981) and also to recalling childhood fantasies.

Compared to non-OBEers, OBEers have been found to be substantially superior in their capacity for absorbed mentation (Glicksohn, 1990; Irwin, 1985; Myers et al., 1983). Further, there are indications that OBEers with high absorption capacity are more likely to report a parasomatic form of OBE, as well as sensations at its termination (Irwin, 1985). The association with absorption capacity is compatible with observations that OBEers tend to practice meditation (Palmer, 1979), and have lucid dreams (Irwin, 1988). In addition to their high absorption capacity, OBEers also show a substantial need for absorbing experiences. In a clinical sense, clients who are fantasy prone, become deeply absorbed in events, and have an internalized, curious, intellectual, and stable personality are the most likely to report OBEs (Irwin, 1985).

Fantasy proneness appears to be higher among OBEers than non-OBEers (Myers et al., 1983; Wilson & Barber, 1982). Stanford (1987) has suggested that certain types of fantasy during childhood may correlate differentially with the circumstances of an OBE's occurrence. Wilson and Barber (1982) studied the "fantasy-prone personality" by conducting in-depth interviews with 27 female volunteers who were rated as "excellent hypnotic" persons and 25 female volunteers who were rated as "non-excellent hypnotic" persons. Eighty-eight percent of the participants in the excellent group, compared to only 8% in the comparison group, reported realistic OBEs.

Blackmore's (1978) review of the evidence led her to the conclusion that OBEs should be viewed as hallucinatory fantasies, especially since they seemed to have the following characteristics:

- 1. imaginary perceptions;
- 2. errors in perception;
- 3. perceptual distortions;
- 4. instantaneous travel to other locations; and
- 5. fantasy-like perceptions of the self, such as not having a body.

In another review of the data, Siegel (1980) demonstrated that people need not be confused or delirious to experience hallucinations, and that hallucinations are typically "as real as real," and sometimes "more real than real." Further, Siegel analyzed representative reports of prototypical near-death experiences and provided internal evidence from their content that they should be categorized as hallucinatory fantasies.

Slade and Bentall (Slade, 1976; Slade & Bentall, 1988) have invoked arousal as one of a number of key factors in the etiology of auditory hallucinations. A state of high internal arousal, when it interacts with the individual's current disposition to hallucinate, can be a crucial factor in triggering such hallucinatory episodes. In particular, they suggest that "minimal stress... may trigger hallucinations in highly predisposed individuals while severe stress would be necessary to trigger an experience in a less predisposed person" (Slade & Bentall, 1988).

Some studies which have found positive relationships between the OBE and a variety of hallucinatory and perceptual distortion experiences (Blackmore, 1984a; McCreery & Claridge, 1995). Irwin (1996) has suggested that in normal circumstances, sensory processing of kinesthetic and somaesthetic stimuli serves to maintain the tacit assumption that "consciousness," or the thinking and perceiving self, resides "in" the physical body.

Alvarado and Zingrone (1999) found marginally significant evidence for a positive association between the OBE and scores on the Dissociative Experiences Scale (DES), a widely used measure of dissociation in daily life (Carlson & Putnam, 1993). Using the same scale, Richards (1991) found significant positive correlations between dissociative experiences and both spontaneous and volitional OBEs. One of the items of the DES asks about the experience of standing next to yourself or watching yourself as if you were standing next to your body. Beere (1995) has reported a positive relationship between seeing the body from an outside perspective and the frequency of traumatic experiences. The connection of OBEs and trauma was clearly articulated by Sanders et al. (1989) when they wrote: "Dissociative experiences may occur spontaneously as adaptive responses to extreme or prolonged or inescapable stress, and a person may have become so accustomed to using OBEs as a defense against all sorts of trauma that such responses generalize to situations that are not traumatic, thus explaining the propensity for OBEs long after the original trauma is over."

Schizotypy is a personality trait that, in common with many other traits such as extraversion or neuroticism, is normally distributed in the population (Claridge, 1987). McCreery and Claridge (1995) have investigated the relationship between OBEs and schizotypal traits. These authors found that OBErs scored significantly higher on schizotypy, perceptual aberrations, magical ideation, and synesthesia than did non-OBErs, who scored higher than OBEers on physical anhedonia (the inability to experience pleasure). Wolfradt and Watzke (2005) investigated the differences between OBEer and non-OBEer college students using various measures of schizotypy (e.g., Raine's Schizotypy

Personality Questionnaire), depersonalization, and cognitive styles. Persons who deliberately induced OBEs scored significantly higher on measures of schizotypy, depersonalization, and intuitive thinking than did spontaneous (non-)OBErs.

Hypotheses

Why do some people report out-of-body experiences but not others? To answer this question, six specific hypotheses were tested in this study: Students who report OBEs have a higher capacity for:

- 1. absorption;
- 2. dissociation;
- 3. fantasy proneness;
- 4. kinetic and visual imagery;
- 5. visual and tactile hallucinations; and
- cognitive-perceptual, disorganized, and interpersonal schizotypy than do students who have never had an OBE.

METHOD

Participants

A total of 648 undergraduate psychology students at Faculty of Psychology of the Universidad Abierta Interamericana, 494 (76%) females and 154 (24%) males, ranging in age from 17 to 57 years (M = 25.11, SD = 7.23), were tested.

Materials

Six questionnaires were used to measure cognitive-perceptual experiences and traits:

- 1. The Betts Vividness of Imagery Scale consists of 35 short descriptions rated on a 1–7 scale (Sheehan, 1967). The persons must try to create mental images in seven different sensory modalities: for example, "the sun as it is sinking below the horizon" (visual), and "reaching up to high shelf" (tactile).
- 2. Barrett's Hallucinations Questionnaire consists of 22 short descriptions rated on a 0-5 scale (Barrett, 1993; Barrett & Etheridge, 1992, 1994). It measures the propensity toward hallucinating in six sensory modalities, of which two (visual and tactile) were used in this research.
- The Creative Experiences Questionnaire, which consists of 25 true/false items, measures fantasy proneness (Merckelbach, Horselenberg & Muris, 2001).
- The Tellegen Absorption Scale, which consists of 34 true/false items, measures how frequently people engage in absorbing activities (Tellegen & Atkinson, 1974).

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- 5. The Dissociation Experiences Scale consists of 28 short descriptions rated on a 0-100 scale and measures a variety of dissociative tendencies (Bernstein & Putnam, 1993).
- 6. The Schizotypal Personality Questionnaire (SPQ) which consists of 74 yes/no items, measures three components of schizotypy (cognitive-perceptual, disorganized, and interpersonal; Raine, 1991, 1992; Raine & Baker, 1992; Raine & Benishay, 1995). This experiment uses only the cognitive-perceptual factor because this factor measures perceptual abnormalities. Sample items are: "Have you ever seen things invisible to other people?" and "Are your thoughts sometimes so strong that you can almost hear them?"

The OBE question was taken from Palmer's (1979) survey and was phrased as follows: "Have you ever had an experience in which you felt that 'you' were located 'outside of' or 'away from' your physical body; that is, the feeling that your consciousness, mind, or awareness was at a different place than your physical body? (If in doubt, please answer no.)." Respondents who answered the main question "yes" were then asked about the frequency of their OBEs (never, once, sometimes, frequently), their explanation of them (rational, unknown, paranormal), and how frequently the OBEs had a positive or negative (emotional) impact on them (never, then a 1–7 scale, with 7 as the most positive).

RESULTS

The questionnaire responses from the 132 OBEers who marked "yes" on the OBE question were compared with the responses from the 516 non-OBEers who marked "never" on this question (see Tables 1 and 2).

Hypothesis 1, that OBEers would score higher than non-OBEers for absorption on the TAS, was supported: the mean for OBEers was significantly higher than for non-OBEers (Mann-Whitney U test z = 4.91, p < .001).

Hypothesis 2, that OBEers would score higher than non-OBEers for dissociation on the DES, was supported: the mean for OBEers was significantly higher than for non-OBEers (Mann-Whitney U test z = 4.50, p < .001).

Hypothesis 3, that OBEers would score higher than non-OBEers for fantasy proneness on the CEQ, was supported: the average score for OBEers was significantly higher than for non-OBEers (Mann-Whitney U test z = 5.40, p < .001).

Hypothesis 4, that OBEers would score higher than non-OBEers for kinetic and visual imagery on the Betts Vividness of Imagery Scale, was supported only for visual imagery: the average score for OBEers was significantly higher than for non-OBEers on visual imagery (Mann-Whitney U test z = 2.05, p = .041).

Hypothesis 5, that OBEers would score higher than non-OBEers for visual and tactile hallucinations on Barrett's Hallucinations Questionnaire,

Table 1. Out-of-Body Experiences: Descriptive Data

OBEers (N = 132 (20.3)	
Gender: Males	N = 38 (28.8)
Gender: Females	N = 94 (71.2)
Age range	18–57 yrs
(M-SD)	27.04 - 7.79
Non-OBEers ($N = 516 (79.7)$	
Gender: Males	N = 116 (22.7)
Gender: Females	N = 396 (77.3)
Age range	17 – 54 yrs
(M-SD)	25.20 - 7.06

Note: Figures in parentheses are percentages of the sample or subsample.

Table 2. Out-of-Body Experiences of OBEers: Frequency, Emotional Impact, and Explanation

	N (%)		
Frequency			
Once	54 (40.9)		
Sometimes	71 (53.8)		
Frequently	7 (5.3)		
Explanation			
Rational/Explicable	39 (29.5)		
I do not know	61 (46.2)		
Paranormal/Unexplained	32 (24.2)		
Emotional Impact			
$M(1-7)^a - SD$	3.17-1.94		

^a1 = negative to 7 = positive emotional impact

was supported: the average score for OBEers was significantly higher than for non-OBEers for both visual (Mann-Whitney U test z = 4.13, p < .001) and auditory (Mann-Whitney U test z = 4.61, p < .001) hallucinations.

Hypothesis 6, that OBEers would score higher for schizotypy than non-OBEers on the cognitive-perceptual, disorganized, and interpersonal factors of the SPQ, was supported only for the cognitive-perceptual factor (Mann-Whitney U test z = 5.17, p < .001).

The results of these hypothesis tests are presented in more detail in Table 3.

Table 3. Results of Psychological Measures Comparing **OBEers and Non-OBEers**

Variables	Groups	М	SD	U	z
TAS	Non-OBEers ^a OBEers	23.31 30.20	13.24 13.06	11255.50	4.91***
Amnesia (DES)	Non-OBEers ^a OBEers	9.88 11.16	10.63 10.44	19745.50	1.66
Absorption (DES)	Non-OBEers ^a OBEers	30.74 36.74	16.90 16.31	17443.00	3.32**
D/D DES)	Non-OBEers ^a OBEers	6.38 12.28	9.57 13.55	15253.00	5.04***
DES (Total)	Non-OBEers ^b OBEers	22.69 28.06	11.54 11.72	11729.50	4.50***
CEQ	Non-OBEers OBEers	31.40 40.80	15.22 15.95	10702.50	5.40***
QMI-KI	Non-OBEers OBEers	13.86 12.84	6.73 6.18	15009.00	1.61*
QMI-VI	Non-OBEers OBEers	12.60 11.43	6.73 5.97	14512.00	2.05**
CEQ-VH ^c	Non-OBEers OBEers	1.46 3.31	2.39 4.47	12600.50	4.13***
CEQ-TH ^c	Non-OBEers OBEers	1.36 3.69	2.02 3.58	11991.00	4.61***
SPQ-CP	Non-OBEers OBEers	7.17 10.41	4.67 4.83	10971.00	5.17***
SPQ-I	Non-OBEers OBEers	8.12 7.50	4.79 4.60	15385.00	1.28*
SPQ-D	Non-OBEers OBEers	5.39 6.04	3.49 3.63	14631.50	1.95*

Note: D-SPQ = Disorganized schizotypy; I-SPQ = Interpersonal schizotypy; CP-SPQ = Cognitive-perceptual schizotypy; DES = Dissociation (Amnesia, Absorption and Depersonalization/Derealization); TAS = Absorption; CEQ = Fantasy Proneness; KI = Kinetic Imagery; VI = Visual Imagery; VH = Visual Hallucinations; TH = Tactile Hallucinations

^an = 516 ^bn = 132

cScored as yes/no (1/0) p < .05, **p < .01, ***p < .00 (all p values are two-tailed). Test's alpha level = .005

Absorption was the best discriminator for both visual, F(2, 498) = 81.08, p < .001, and tactile, F(2, 498) = 88.44, p < .001, hallucinations. When the effect of absorption was removed for visual hallucinations, cognitive-perceptual schizotypy became a significant discriminator, and when the effect of cognitive-perceptual schizotypy was removed for tactile hallucinations, absorption turned out to be a significant discriminator. Similarly, a second probit regression showed that the CP-SPQ was a significant predictor of OBE group membership, whereas the other subscales of the SPQ were not. No other variables discriminated between OBEers and non-OBEers. These results suggest that, in addition to the dominant predictor (schizotypy), a second dimension (absorption) may underlie the differentiation of the two groups.

Frequency of OBEs broke down as follows: once, 40%; sometimes, 5%; and frequently, 53%. The frequency with which OBEs had emotional impact was (M=3.17) in a 1-7 scale, with 7 as the most positive. To explore sex differences, the data were split into males/females and OBEers/non-OBEers. Then the numbers of persons who obtained scores at or above the mean were compared to the numbers who obtained scores below the mean, using Fisher's exact probability test. The sex differences in OBE occurrence were nonsignificant, both for the total sample and for males and females separately.

DISCUSSION

A theoretical model that might account for the present results is that of the "happy schizotype" (McCreery & Claridge, 1995), who is functional in spite of, or perhaps even in part because of, his or her anomalous experiences. The term hallucination has pejorative overtones because of its almost exclusive association with mental illness or abnormal states such as extreme fatigue. However, the apparently widespread occurrence of anomalous perceptual experiences such as OBEs in the normal population, and sometimes in apparently normal states, suggests that such experiences are not necessarily signs of mental illness. It is interesting that some participants reported beneficial effects from OBEs, such as reduction in short-term stress, or even apparently adaptive alterations in their long-term outlook on life.

In support of previous studies, the results showed a higher level of cognitive-perceptual schizotypy, absorption, dissociation, fantasy and hallucination proneness, and visual imagery in OBErs compared to non-OBErs. The findings suggest that, in particular, the cognitive-perceptual aspects of schizotypy, such as disturbances in the sense of self, certainty of self, and self-awareness, are essential characteristics of persons who have had an OBE. The results also support the dissociation model of OBEs, which assumes that underlying dissociative processes such as absorption and fantasy proneness are associated with OBEs. Irwin (1985) has suggested that the OBE is characterized by a disruption of the normal body sense, which leads to somaesthetic sensations.

The percentage of persons reporting OBEs in this study is very close to that in Palmer's (1979) random survey in Virginia. Wolfradt and Watzke (2005) found that a group of 333 non-OBErs were less likely to report OBEs than a group of 39 OBEers to a highly significant degree, mirroring the results of the present study.

Such data are consistent with Claridge's (1985, 1987) distinction between schizotypy as a long-term personality trait, or set of traits, and schizophrenia as a distinct psychological breakdown for which a high level of schizotypy is only one of the predisposing factors. Claridge (1985), in fact, has stressed the positive side of schizotypy, if not of schizophrenia itself, suggesting that a moderate degree of schizotypy may even be of adaptive value. This positive nature of schizotypy, he argues, results in the survival of whatever genes give rise to it, despite the low fertility rates in diagnosed schizophrenics. The incidence of OBEs in the present study is 20%. Although higher than the incidence found in studies using samples representative of the general population (e.g., Blackmore, 1984a; Palmer, 1979), it is typical for surveys with college students. For example, in an early study, Hart (1954) reported an OBE frequency of 33% among college students, and other such studies have reported percentages of 31% (Blackmore, 1987; Zangari & Machado, 1996), 30% (Alvarado & Zingrone, 1997), 29% (Glicksohn, 1990), and 28% (Gómez Montanelli & Parra, 2005; Irwin, 1996). As in previous studies (for a review, see Irwin, 1985), we did not find significant relationships between OBE incidence and sex, age, or religiosity.

This study demonstrates the viability of adopting a psychological approach to better understand the OBE. It is tentatively concluded that the constellation of interrelated factors that make up the "fantasy-prone personality" (Wilson & Barber, 1982) constitutes a psychological predisposition for the OBE. The results of this study also support the view that OBEs of the type described in this article may have important implications for therapy. Many therapists still regard a client who reports OBEs (or other possibly paranormal experiences) as either mentally ill or deluded. For this reason, fantasy-prone persons, fearing ridicule, often do not tell anyone about their experiences (Gómez Montanelli & Parra, 2003).

Finally, the present results are in agreement with other studies in which measures of fantasy proneness seemed to be successful predictors of psychic phenomena (Myers et al., 1983; Wilson & Barber, 1982). Such findings suggest that OBEs may be related to fantasy proneness and cognitive-perceptual schizotypy, which are correlated with each other. Future research should focus on the role of different types of OBEs in personality and cognitive processing.

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Direct reprint requests to:

Alejandro Parra Facultad de Psicología Universidad Abierta Interamericana Buenos Aires, Argentina e-mail: rapp@fibertel.com.ar