RESEARCH ON SPONTANEOUS OUT-OF-BODY EXPERIENCES: A REVIEW OF MODERN DEVELOPMENTS, 1960–1984

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Out-of-body experiences (OBEs) have a long history of observations, discussion and speculation, though systematic research is comparatively recent (for a review see Blackmore, 1982a). For practical purposes, the history of OBE research and conceptualizations in the 20th century[2] may be divided into an old (1900–1959) and a modern period (1960–1984).[3] The old period was focused mainly on case collections, discussion of OBE apparitions and theoretical considerations, as seen in the writings of Bozzano (1934/1937), Hart (1954), Muldoon and Carrington (1951), Myers (1903) and others (e.g., Broad, 1953; Denis, 1901; Muldoon, 1936; Osty, 1930; Tyrrell, 1942/1953). On the other hand, the modern period presents more systematic research both on spontaneous and on experimental studies (for reviews see Alvarado, 1976, 1982; Blackmore, 1982a; Capel, 1978).

This paper will review spontaneous OBE studies published between 1960–1984 with emphasis on research findings and overall patterns. Studies emphasizing OBE phenomenology, but with no systematic presentation of percentage values of the characteristics in question will not be discussed unless they have enough information to obtain a percentage value for comparison purposes (i.e., Crookall, 1961, 1965, 1970; Greene, 1983a; and to some extent Giovetti, 1983; Green, 1968; and Rogo, 1976). Also, theoretical discussions (e.g., Blackmore, 1982a; Greene, 1983b; Palmer, 1978b) and research on near-death experiences (e.g., Green and Friedman, 1983; Greyson and Stevenson, 1980; Ring, 1980; Sabom, 1981) will not be included.

In reading this paper, the reader should have in mind difficulties in comparing the studies here reviewed, since different OBE questions, samples and sampling methods have been used. These problems will be further discussed later.

The following areas and topics will be reviewed: (1) general circumstances and characteristics, (2) demographic correlates, (3) psychological

correlates, and (4) physiological and medical correlates. Suggestions for further research and selected methodological criticisms will also be discussed.

General Circumstances and Characteristics

Incidence

There are 27 studies giving information about OBE incidence in different groups with a range of 8–95 percent of OBE reports (see Table 1). The mean incidence of claimed OBEs was 30 percent. However, it is important to consider the type of sample in relation to OBE incidence. Six of the studies included subjects that certainly deviated from the general population. These were schizophrenic patients (Blackmore and Harris, 1983), marijuana users (Tart, 1971), members of groups interested in psychic experiences like the Association for Research and Enlightenment (Kohr, 1980) and the Churches Fellowship for Psychical Study (Banks, 1962), high and low fantasy proneness subjects (Wilson and Barber, 1983), and members of the Isneg tribe in the Philippines (Murray, 1983). The incidence of OBE in these studies was 42, 44, 50, 51, 88 and 95 percent[4] (see Table 1), far above the rest of the studies. If we omit these studies of special subjects and recalculate the mean incidence in the remaining groups we obtain 21.5 percent.

The importance of the sample studied becomes further demonstrated when we compare (after excluding the above mentioned samples of special participants) the incidence of OBEs in randomly selected samples (14.8 percent) and nonrandomly selected samples (24.1 percent).[5] On the other hand, the incidence of OBEs did not differ importantly between students (22.9 percent) and nonstudents (18.3 percent).[6]

Studies of factors affecting OBE incidence. Blackmore (1981) compared OBE incidence in groups that attended parapsychology lectures, including one on OBEs, with a group having no special knowledge of parapsychology and OBEs. The first group had 13 percent of OBE reports, while the second one had 33 percent.[7]

A further study (Blackmore, 1982b) manipulated the amount of information giving descriptions and general information about OBEs to one group, but not to the other. However, there was no difference in OBE incidence between both groups (18 percent in both groups).

Murray (1983) found marked OBE incidence differences in tribal rural communities (95 percent) and an urban community in the Philippines (10 percent).[8]

TABLE 1

Studies of the Incidence of OBEs

Study	Country	Type of Respondents	Random Sample	Sample Size	OBE Reports	Percentage of: Single OBEs	Multiple OBEs
Alvarado, 1984	USA	Students	No	61[a]	—	19	81
Banks, 1962	England	Members of Churches, Fellowship for Psychical and Spiritual Studies	No	150	51	—	—
Banks, 1962	England	Friends, acquaintances & persons met by the investigator in conferences & other activities	No	50	26	—	—
Blackmore, 1978	England	Students	No	132	11	—	—
Blackmore, 1981	England	Students	No	33	33	18	82
Blackmore, 1982a (p. 61)	England	Students & letters sent to the investigator	No	—[a]	—	47	53
Blackmore, 1982a (p. 61)	England (presumably)	Persons that reported cases to the SPR	No	44[a]	—	60	31
Blackmore, 1982b	Holland	Students	No	192	18	15	85

Blackmore, 1982c (Study I)	England	Students	No	217	13	54	46
Blackmore, 1982c (Study II)	England	Students	No	115	14	44	56
Blackmore, 1983a	England	Students	No	254	29	21	79
Blackmore, 1983b	England	Students	No	98	31	11	89
Blackmore, 1984	England	Persons selected from electoral register records	Yes	321	12	15	85
Blackmore & Harris, 1983	England	Schizophrenics	No	71	42	—	—
Giovetti, 1983	Italy	Respondents to requests for cases in magazines	No	110[a]	—	36	64
Green, 1966	England	Students	No	115	19	—	—
Green, 1967	England	Students	No	380	34	—	—
Green, 1968	England	Respondents to requests for cases in press & radio	No	400[a] (approx.)	—	61[b]	39[b]
Haraldsson et al, 1977; Wiedman & Haraldsson, 1980	Iceland	Persons selected from National Registry Records	Yes	902	8	11[c]	89[c]

TABLE 1 (*Continued*)

Study	Country	Type of Respondents	Random Sample	Sample Size	OBE Reports	Percentage of: Single OBEs	Multiple OBEs
Hart, 1954	USA	Students	No	113	25	—	—
Hart, 1954	USA	Students	No	42	33	—	—
Irwin, 1980	Australia	Students	No	177	12	—	—
Kohr, 1980	USA	Members of Association for Research & Enlightenment	No	406	50	28	72
Murray, 1983	Philippines	Members of Isnag tribe living in remote rural community	Yes (in stratified sample)	80	95	—	—
Murray, 1983	Philippines	Residents of urban area	Yes (in stratified sample)	80	10	—	—
Myers et al, 1983	USA	Students	No	200	23	—	—
Neppe, 1981	South Africa	Members of a women's cultural club	No	57	40	—	—

Palmer, 1979	USA	Townspeople	Yes	354	14	13	87
Palmer, 1979	USA	Students	Yes	268	25	18	82
Poynton, 1975	South Africa	Respondents to newspaper requests	No	122[a,d]	—	56	44
Tart, 1971	USA	Marijuana users	No	150	47	23	21
Twemlow et al., 1982	USA	Respondents to newspaper requests	No	339[e]	—	34	66
Wilson & Barber, 1983	USA	High fantasy proneness, female Ss	No	26	88	—	—
Wilson & Barber, 1983	USA	Low fantasy proneness, female Ss	No	25	8	—	—

[a] Only OB-experients were included.
[b] These percentages are from a group of 302 respondents (Green, 1968, p. 22).
[c] These percentages are from a group of 18 respondents (Wiedman & Haraldsson, 1980).
[d] One-hundred persons sent questionnaires back; some reported more than one experience.
[e] It is reported that out of 420 returned questionnaires, 339 reported OBEs and 81 did not. However, this cannot be considered to reflect incidence since the original request for cases was addressed to OB-experients.

Comments about OBE incidence. It is difficult to give a single incidence figure for OBEs since the studies included in the analysis varied so widely in samples and methods. The available figures must be viewed with caution, since only a few studies have used randomly selected samples, some have used small samples and most have surveyed student populations (see Table 1). These factors limit the value of the figures obtained for any estimate of OBE incidence in the general population.

There are contradictory results regarding the effect of previous OBE information. On OBE incidence, on the other hand, Murray's (1983) findings point towards the importance of cultural differences on OBE incidence.

Frequency of OBE Occurrence

There is a general tendency for a higher frequency of multiple (more than one) OBE reports as compared with single ones (see Table 1). Out of 18 studies[9] single OBE reports have a percentage mean of 29.8, while multiple reports have a mean of 66.5.[10]

Frequency of OBEs in relation to other variables. Green (1968) has reported differences in OBEs related to single and multiple reports, though no statistical tests were performed to assess significance. Multiple OB-experients were found to report having the experience from a state of sleep more frequently (24 percent vs. 12 percent), as well as from relaxation (41 percent vs. 33 percent). Also more frequently reported were changes in the sense of time during the OBE (37 percent vs. 18 percent). In terms of prominence of sensory modality during the OBE, little difference was found between multiple and single reports of sight (92 percent vs. 93 percent), but audition in multiple cases "increased by a factor of 1.7 and those reporting other modalities are multiplied by factors of not less than 2" (p. 68).

Twemlow, Gabbard and Jones (1982) compared diverse variables of single and multiple cases. There was no difference in the frequency of specific circumstances coinciding with or inducing the OBE. Persons who reported single OBEs experienced significantly more spontaneous OBEs (with no efforts by the subject to have the experience) than those who reported multiple OBEs. OBEs under conditions of emotional stress (themes of loss, mourning and loneliness) were more frequent in multiple OBE reports, but the difference was not statistically significant (34 percent vs. 21 percent). There were significantly more reports of the following OBE phenomenological aspects in multiple than in single OBE reports: (1) a sense of energy, (2) hearing noises, especially roaring noises, (3) feeling vibrations, (4) seeing the body from a distance,

(5) feeling able to pass through objects, (6) being aware of the presence of nonphysical beings and (7) seeing a brilliant light.

Comments about frequency of OBEs. The higher frequency of multiple OBEs as opposed to single ones suggests that persons who have the experience once, may be prone to have it again. There may be several explanations for the difference. For example, repeated experiences may lead to development of OBE skills; also, experience and familiarity in the OB environment may be an important variable. Further investigations of the factors associated with single compared with multiple experiences are needed.

Circumstances of OBE Occurrence

While several investigators have studied the circumstances coinciding with or inducing the OBE, it is difficult to present the findings in an organized and systematic way or to compare them due to differences in questionnaire items and in reporting styles. Eight studies were selected for which comparison was possible. Table 2 presents the results. As a tentative generalization, it should be noticed that conditions of relaxation seem to be more frequent than other conditions. No reliable figures can be given at the moment regarding OBEs in diverse circumstances (e.g., physical activity, near-death, stress).

Circumstances of OBE occurrence in relation to OBE phenomenology. Crookall (1961, 1964) claims there are significant phenomenological differences between natural (N) OBEs (those occurring gradually in conditions such as sleep, illness, exhaustion, near-death, relaxation and normal activities) and enforced (E) OBEs (those occurring suddenly because of drugs, accidents, emotional and physical shocks, suffocation, hypnosis and voluntary induction). Percentage differences are presented by Crookall (1964) to support the claim that reports of N-OBEs have a higher frequency of phenomenological aspects (e.g., seeing the "silver cord" and entities) and better perceptual aspects and feelings than E-OBEs. Crookall did not report statistical analyses to assess the significance of his frequency data, but later analyses (Alvarado, 1981, 1984) did not find significant differences with a single exception.[11] A recent study exploring the hypothetical N vs. E differences failed to find any significant effect, but the small sample size (N = 61) of the study should be taken into consideration in assessing the value of these results (Alvarado, 1984).

Gabbard, Twemlow and Jones (1981) compared the features of OBEs in a group of persons who claimed to have been near death and a group not making such a claim. They found that the former group showed

TABLE 2

Percentages of Circumstances of OBE Occurrence

Study	Active	Resting, Relaxing	Prayer, Meditation	Stress	Sleep	Drugs	Accidents	Hypnagogic State	Illness	Voluntary Induction
Blackmore, 1984	10	59	3	—	—	18[a]	—	—	15[b]	10
Green, 1968	—	—	—	—	12	—	—	—	33	—
Myers et al, 1983	—	—	49[c]	—	—	22	—	—	10	
Palmer, 1975, 1979 (Townspeople)	—	29	10	—	42	13	8	23	10	16
Palmer, 1975, 1979 (Students)	—	35	11	—	46	30	8	32	20	22
Poynton, 1975	12	20	—	—	27	6[d]	—	16	—	—
Twemlow et al, 1982	—	78	26	22	35	14[d]	4	—	14[e]	—
Wiedman & Haraldsson, 1980	—	33	—	—	—	—	—	22	—	—

[a] Described as drugs and medicines.
[b] Migraine and headaches.
[c] This percentage value also includes reports of "relaxing."
[d] Anesthesia.
[e] This includes: cardiac arrest (5 percent), severe pain (6 percent), and high fever (3 percent).

a higher incidence of the following variables: (1) hearing noises during early stages of the experience, (2) feelings of traveling through a tunnel, (3) seeing the physical body, (4) awareness of other beings, (5) awareness of presence of deceased persons close to respondents, (6) seeing a brilliant light.

Comments about circumstances of OBE occurrence. OBEs seem to occur more frequently in conditions of relaxation, although further work certainly is needed to be sure of this generalization. Regarding relationship with specific OBE phenomenology, the comparisons between near-death vs. non near-death OBEs seem promising assuming they can be replicated in further studies.

OBE Phenomenology

The phenomenology of the OBE is another aspect which is difficult to summarize because of problems in comparing the different studies. Different questions and definitions of specific phenomenological aspects complicate the matter. Accordingly, the following review should be read with this in mind. As seen in some of the most detailed OBE phenomenology surveys (e.g., Alvarado, 1984; Blackmore, 1984; Green, 1968; Twemlow et al., 1982), there are so many OBE characteristics that it is difficult to summarize all of them in a review like this one. For this reason, only some variables generally considered important to or characteristic of the phenomena for which comparable data from other studies exist, have been selected for discussion. More detailed references and percentage values for some of the following studies can be found in Table 3.

Getting out and returning to the body. Only a minority of subjects reported having been aware of leaving their physical bodies. The studies including this variable showed 22 percent (Wiedman and Haraldsson, 1980), 35 percent (Alvarado, 1984) and 36 percent (Blackmore, 1982a, p. 61) of reports. This is consistent with Blackmore's (1984) report of 67 percent finding themselves already out and Green (1968) and McCreery (1973) findings that most of their cases did not show any transition (no percentage value reported).

Awareness of returning to the body is associated with frequencies of 42 percent (Alvarado, 1984), 59 percent (Blackmore, 1984), and 67 percent (Wiedman and Haraldsson, 1980). Green (1968) reported that most of her cases did not have sensations of returning to the body.

Observations related to the surroundings and to the OBE state. Eleven studies inquired about the subject's observation of his or her physical body during the experience. The incidence of this variable ranged

TABLE 3

Percentages of OBE Phenomenological Characteristics

Study	Awareness of:		Self-perception:							
	Getting OB	Returning to Body	Physical Body Seen	Cord-like Connection	Another Body	No Body	Other[a]	ESP	Entities	Awareness of connection to body
Alvarado, 1984, in press	35	42	—	0	23	35	13	5	7	23
Blackmore, 1982a, p. 61	36	—	71	—	57	—	—	—	—	—
Blackmore, 1982a, p. 61 (SPR cases)	—	—	72	8	—	—	—	—	—	—
Blackmore, 1982b	—	—	47	—	15	21	26	21	—	—
Blackmore, 1982c	—	—	60	—	20	7	47	40	—	—
Blackmore, 1984	67	59	42	—	72[b]	—	30	18	—	24
Crookall, 1964	—	—	—	20	—	—	—	—	25	—
Giovetti, 1983	—	—	—	1	55	—	45	10	9	—
Green, 1967	—	—	53	—	—	—	—	5	—	—
Green, 1968	[c]	[c]	82	4	—	80	—	—	—	30
McCreery, 1973	[c]	—	—	—	—	—	—	—	—	—
Myers et al, 1983	—	—	—	—	—	—	—	40	—	—
Osis, 1979	—	—	—	—	36	22	14	—	—	—
Palmer, 1979 (Townspeople)	—	—	56	—	—	—	—	15	—	—
Palmer, 1979 (Students)	—	—	62	—	—	—	—	12	—	—
Poynton, 1975	—	—	80	9	75	20	—	28	—	—
Rogo, 1976	—	—	—	—	43	—	—	—	—	—
Twemlow et al., 1982	—	—	—	—	68	—	—	—	36	20
Wiedman & Haraldsson, 1980	22	67	56	—	—	—	—	—	50	39

[a] This includes forms such as clouds, energy patterns, points or globes of light and other forms not included in the other two categories.

[b] This percentage includes reports of "a complete body" (69 percent) and a "different body" (3 percent).

[c] No transition was reported in most cases, but no exact figures are available.

between 42 percent and 81 percent in the different studies, with a mean of 61.8 percent.

A cord-like connection between the physical body and the OB position has a range of 0–20 percent ($\bar{X}$ = 7.0), as seen in six studies. It is of interest to notice that the highest percentage (20 percent) is reported by Crookall (1964), whose cases are taken in large proportion from Spiritualist and psychical research publications, a certainly biased sample. A mean percentage of 4.4 is obtained when Crookall's study is dropped from the analysis (range—0–9 percent).

Regarding the form in which the OB-experient perceived him/herself, reports of other bodies (sometimes similar to the physical body) have a range of 15–75 percent and a mean of 46.4 percent. There were also reports of no body or form at all (range—7–80 percent, $\bar{X}$ = 30.8), and other forms such as lights, energy forms, and points in space (range—13–47 percent, $\bar{X}$ = 29.1).

Reports of ESP or claims of obtaining veridical information paranormally during the OBE showed a range of 5–40 percent and a mean percentage of 19.4. This should be viewed with extreme caution, since no attempts to investigate the cases were reported. There is some evidence, to be discussed later, that percentages of ESP claims made by survey respondents may show lower percentages when more complex and strict questions are used.

Reports of diverse types of entities (e.g., deceased persons and unrecognized figures) have a range of 7–50 percent of reports ($\bar{X}$ = 25.4).

Blackmore (1984) studied the visual clarity reported by her subjects. She found that 21 percent said they could see more clearly than usual, 51 percent said they noticed no difference in their vision and 31 percent said their vision seemed dimmer than usual. A comparable study reported percentages of 36 percent, 24 percent, and 14 percent, respectively (Alvarado, 1984). Osis (1979) reported that 79 percent of his respondents claimed "accentuated and detailed" visual perception of objects.

Green (1968) found that sight was the sensory modality more frequently reported in single (93.2 percent) and in multiple (92 percent) OBEs. Using a rating scale from 1 (totally clear and vivid) to 7 (very vague and dim), Blackmore (1982b, 1982c) reported scores of 3.6 and 2.3 for vision. These are the lowest scores obtained for all sensory modalities, but the differences are small and do not seem to be significant.

Green (1968) observed that hearing is the second most frequently reported sensory modality both in single (34 percent) and in multiple (57 percent) OBEs. Blackmore's (1982b, 1982c) respondents also rated

hearing in second place regarding clarity of sensory modalities. Twenty-one percent of Twemlow et al.'s (1982) respondents reported hearing noises in the early stages of the experience, while only 10 percent of Blackmore's (1984) sample reported noises. Four percent of Twemlow et al.'s (1982) total sample (N = 339) reported hearing musical sounds,[12] while Alvarado (1984) reported twice that proportion (8 percent).

Mental processes. The percent who reported feelings of awareness of connections with the physical body range from 20 to 39 percent ($\bar{X}$ = 27.2) across five studies.

Thinking and mental clarity during the OBE was reported to be better than usual by 53 percent and 57 percent (Alvarado, 1984; Green, 1968). In Wiedman and Haraldsson (1980) 39 percent reported their thinking as very clear, or clear, or same as usual.

Better or positive feelings and moods during the experience were reported more frequently in two studies with percentage values of 66 percent (Alvarado, 1984) and 83 percent (Twemlow et al., 1982) respectively.

Comments about OBE phenomenology. The following patterns emerge from the OBE aspects here discussed. Most of the respondents saw their physical body, saw themselves in another body during the experience, and seem to have had a predominantly visual experience. There are some trends indicating an enhancement or positive quality of feelings and moods, as well as indicating a sense of mental clarity during the experience. On the other hand, aspects such as awareness of leaving the body, experiencing ESP, and seeing a cord-like connection with the physical body are not as frequent as they are generally thought to be in the popular and occult-oriented literature.

Demographic Correlates

Sex. Nonsignificant correlations between OBEs and gender have been reported in most of the studies considering this variable (Blackmore, 1982c, 1983a, 1983b, 1984; Blackmore and Harris, 1983; Green, 1966, 1967; Jones, Gabbard and Twemlow, 1984; Myers, Austrin, Grisso and Nickeson, 1983; Palmer, 1979; Wiedman and Haraldsson, 1980). Blackmore (1982b) reported a positive correlation with males and Tart (1971) with females, while Kohr (1980) reported an unspecified correlation with sex in his survey.

Sex and OBE frequency. In his study with marijuana users, Tart (1971) found that males who reported an OBE had more multiple experiences than females.

Age. No significant correlation with age was found in 11 studies (Blackmore, 1982c, 1983a, 1983b, 1984; Blackmore and Harris, 1983;

Jones et al., 1984; Kohr, 1980; Myers et al., 1983; Palmer, 1979; Wiedman and Haraldsson, 1980). Blackmore (1982b) reported that OB-experients were significantly older than nonexperients. Tart (1971) found with his sample of marijuana users that young users reported more OBEs after using the drug than before, as compared with older users.

Age and OBE frequency. Green (1968) found that single OBEs were more frequent in the range of 15–35 years of age and that multiple reports had a higher proportion of childhood cases. No tests of significance were reported.

Race. No significant relationships were reported with this variable by Kohr (1980) and Palmer (1979).

Education. No significant relationships with education level in studies were reported by Kohr (1980), Palmer (1979) or Wiedman and Haraldsson (1980). Jones et al. (1984), however, found that the educational level of OB-experients was higher than that of the general American population, but lower than the comparison nonexperient group. Green (1966, 1967) reported nonsignificant differences in college students between OBE incidence in science and art majors.

Marital Status. Palmer (1979) reported a significant positive correlation between reports and the separated/divorced group of his survey with townspeople. In contrast, Palmer's (1979) study with a student sample, as well as two other studies (Jones et al., 1984; Kohr, 1980) found no significant relationships with this variable.

Politics. An unspecified significant positive correlate between OBEs and attitudes towards politics was reported by Kohr (1980). Palmer (1979) did not find any significant relationship.

Other Variables. Birth order, income, occupation, religiosity and religious denomination have not shown any relationship with OBEs (Jones et al., 1984; Kohr, 1980; Palmer, 1979; Wiedman and Haraldsson, 1980).

Comments about demographic correlates. In general, demographic variables are poor predictors of the OBE. The association between sex, age and OBE frequency reported by Tart (1971) and Green (1968), respectively, deserves further study, but at the moment stand as isolated findings.

Psychological Correlates

Personality Variables

Psychopathology and adjustment. Irwin (1980) found that his sample of Australian students had higher scores on the Stress Reaction Scale of Tellegen's Differential Personality Questionnaire (DPQ) (related to

neuroticism) than the general population. However, no significant differences were found by Jones et al. (1984) between experiencers and nonexperiencers using Caine's Hysteroid Scale.

Irwin (1980) did not find any relationship using part of Tellegen's DPQ on Malevolent World, related to psychoticism. Jones et al. (1984) did not find evidence for an association between OBEs and Eysenck's Psychoticism Scale.

Jones et al. (1984), using the Profile of Adaptation to Life Questionnaire, found that OB-experients were better adjusted than were psychiatric patients and also better adjusted than college students.

Extraversion. Irwin (1980) did not find a significant correlation with three cognitive styles of the DPQ considered to be components of extraversion (Social Potency, Social Closeness and Impulsiveness).

Danger seeking. Jones et al. (1984) found lower danger seeking in OBE-experients using the DPQ, though Irwin (1980) did not obtain significant results. Myers et al. (1983) reported a positive correlation between the "risk taking" factor of the Jackson Personality Inventory and OBEs.

Death anxiety. Jones et al. (1984) and Myers et al. (1983) did not find significant relationships between OBEs and death anxiety as measured by Dickstein's Death Anxiety Scale and a revision of Livingston and Zimet's Death Anxiety Scales, respectively.

Needs. Using the Edwards Personal Preference Schedule, a test measuring diverse need variables, Irwin (1981b) found significant results with achievement, deference and intraception. Comparisons with a control group showed significantly lower levels of achievement and deference, but higher intraception scores. No significant results were found with the following variables: order, exhibition, autonomy, affiliation, succorance, dominance, abasement, nurturance, change, endurance, heterosexuality and aggression.

Myers et al. (1983) also studied need variables of OB-experients using the Jackson Personality Inventory. Out of sixteen variables two showed significant negative correlations (complexity and value orthodoxy) and five had positive correlations (breadth of interest, innovation, responsibility, risk-taking and social participation). A MANOVA also showed significant differences between experients and nonexperients for all variables except innovation and social participation.

Other. The internal dimension of Rotter's locus of control scale was significantly and positively associated with OBEs in a study by Myers et al. (1983). On the other hand, Irwin (1980) did not find significant associations with the following variables of the DPQ: Aggression, Hard Work and Authoritarianism.

Comments about personality variables. More research is necessary before we can assess the consistency and importance of most of the significant correlates between OBEs and personality variables here reported. An important trend is the lack of good evidence to associate OBEs with psychopathology or adjustment problems, or with death anxiety.

Cognitive Variables

Attention. Attention variables have been studied measuring the level of absorption using the DPQ or modifications of it. Significant positive relationships have been reported in four studies (Irwin, 1980, 1981c; Myers et al. 1983), while one study reported chance results (Jones et al., 1984).

Vividness of visual imagery. Blackmore (1984) found a significant positive association between OBE reports and two questions asking for clarity of imagery after following visualization instructions, but the combined scores for both questions did not show significant differences between experiencers and nonexperiencers. Using the Bett's Questionnaire of Mental Imagery, Blackmore (1982c) did not find significant differences between experiencers and nonexperiencers.

Irwin (1980) found less vividness of visual imagery in Australian OB-experients as compared to the general population, using Marks' Vividness of Visual Imagery Questionnaire (VVIQ). A later unpublished study did not find differences in VVIQ scores between experiencers and nonexperiencers (Irwin, 1981a).

Alvarado (1984) used the VVIQ to test for possible visual vividness differences between subjects reporting presence or absence of the following OBE characteristics: (1) natural vs. enforced OBEs, (2) 1–5 vs. +5 OBE reports, (3) clear, bright vs. same/confused, foggy reports of visual perception clarity, (4) improved vs. same/worse reports of thinking and mental clarity. No significant differences were found between the mean VVIQ scores of the different reports nor between means and variance scores as related to sex of the respondents.

Control and manipulation of visual imagery. Blackmore (1983b) asked her survey respondents how easily they could change from one viewpoint to another when imagining six memory scenes, finding better abilities in OB-experients than in nonexperients. Gordon's Control of Imagery Questionnaire was used by Blackmore (1982c) in another study, but without significant results.

Cook and Irwin (1983) used Richardson's Necker Cube Fluctuation Test to measure imagery control and found a nonsignificant difference between experiencers and nonexperiencers.

Spatial abilities. Blackmore (1983b) administered the Space Relations

Test from the Differential Aptitude Test battery to respondents of her survey, but obtained no significant differences. Cook and Irwin (1983) found that OB-experients had better spatial abilities than nonexperiencers using a device constructed for purposes of the study.

Fantasy proneness. Wilson and Barber (1983) reported that 88 percent of a group selected for its high fantasy proneness abilities had OBEs compared to 8 percent reported by a low fantasy group.[13] Fantasy proneness was measured by the Creative Imagination Scale and the Barber Suggestibility Scale. This relationship has been confirmed in a study by Myers et al. (1983). Myers and Austrin (in press) also found a positive relationship between high fantasy in OB-experients and reports of other persons seeing or perceiving a presence in the location where the experiencer traveled during the experience.

Other. Irwin (1980) reported nonsignificant findings with the visual and verbal dimensions of Paivio's Ways of Thinking Questionnaire, comparing scores on both dimensions against each other as well as against the general population.

Blackmore (1983b) compared abilities to imagine scenes from eye level or from above, but no significant differences were found between experiencers and nonexperiencers.

Comments about cognitive variables. Absorption and fantasy proneness come out as the strongest correlates with OBEs, although only a few studies have been conducted with these variables to date. No consistent relationship seems apparent with imagery variables such as vividness and control of visual imagery. One study suggests the importance of visual and spatial skills, but replication is needed before the significance of this finding can be evaluated.

Altered States of Consciousness and Related Practices and Experiences

Dream recall. Out of eight studies that consider dream recall, two have shown significant positive correlations to OBEs (Blackmore, 1982b; Kohr, 1980). Six have not obtained significance (Blackmore, 1982c, 1984; Palmer, 1979; Wiedman and Haraldsson, 1980).

Dream vividness. Palmer (1979) reported nonsignificant relationships with dream vividness and OBEs, but other studies have found positive significant correlations (Blackmore, 1984; Kohr, 1980; Palmer, 1979).

Lucid dreams. With one exception (Blackmore, 1982c), all the investigations that included a question about lucid dreams found a significant positive correlation between these and OBE reports (Blackmore, 1982b, 1982c, 1983a, 1984; Irwin, 1983; Kohr, 1980; Myers, 1982; Palmer, 1979; Wiedman and Haraldsson, 1980).

Flying dreams. Out of four studies conducted by Blackmore, two have shown positive correlations between flying dreams and OBEs

(Blackmore, 1982b, 1984) and two have shown nonsignificant results (Blackmore, 1982c, 1983a).

Psychic experiences. Reports of general ESP experiences positively correlated to OBEs in several studies (Blackmore, 1984; Green, 1967; Kohr, 1980; Myers, 1982). Both Palmer (1979) and Wiedman and Haraldsson (1980) reported positive correlations with groups of unspecified psi experiences. Kohr (1980) reported a positive correlation with poltergeist manifestations and Myers (1982) with seeing apparitions. Blackmore (1982c) did not find significant relationships between OBEs and scores obtained in an ESP experiment.

Mystical experiences. Most of the studies considering this variable have reported positive significant results (Blackmore, 1984; Kohr, 1980; Myers et al., 1983; Palmer, 1979; Wiedman and Haraldsson, 1980). Only Palmer (1979) did not find a significant relationship with his sample of townspeople.

Practice of meditation. Positive relationship with this variable have been reported in three studies (Kohr, 1980; Myers et al., 1983; Palmer, 1979). Two studies report nonsignificant results (Palmer, 1979; Twemlow et al., 1982).

Jones et al. (1984) reported that the practice of meditation was significantly associated with a state of mental calmness, joy and peace in the OBE.

Tart (1971) found with marijuana users that meditators reported a higher frequency of OBEs before use of the drug than after as compared to nonmeditators.

Body image distortion. Blackmore and Harris (1983) found that distortions of body image (excluding drug induced effects) were more frequent in OB-experients than in nonexperients of a student sample. A later study (Blackmore, 1984) asked for experiences of changing size, body shaking, turning and floating and found significant positive associations between OBEs and change in size and the experience of floating.

Perceptual distortions. Blackmore and Harris (1983) found that OB-experients reported more perceptual distortions than nonexperiencers, both in a student and in a schizophrenic subjects sample. The difference was significant only with the schizophrenic sample.

In another study, Blackmore (1984) found a significant association of OBEs with seeing with the eyes closed, which may be considered a kind of perceptual distortion.

Hallucinations. Hallucinatory experiences were positively correlated with OBEs in a study by Blackmore (1984). A study with schizophrenic subjects (Blackmore and Harris, 1983) found that those having OBEs had a higher frequency of seeing visions, hearing voices and suffering

from thought interference than nonexperiencers, but the difference reached significance only for seeing visions.

Use of drugs. Palmer (1979) reported a significant positive correlation between the use of drugs and OBEs in his student sample, a finding also reported by Blackmore and Harris (1983). Palmer (1979) did not find such relationship with his townspeople sample, nor did Kohr (1980). Tart (1971) found with his sample of marijuana users that the frequency of OBE experiences after using the drug was higher than that before use of the drug.

Other. Blackmore (1983a) reported significant positive relationships with falling dreams and the ability to control dreams, but not with false awakenings or with the ability to stop dreams. Jones et al. (1984) found that OB-experients who had had previous experience with hypnosis were less frightened during the OBE than those with no experience of hypnosis. Blackmore (1983a) reported no significant relationship with tunnel experiences, but hypnagogic imagery was significantly and positively related to OBEs.

Comments about altered states of consciousness and related practices and experiences. Vivid and lucid dreams, as well as mystical and psychic experiences show strong positive associations with OBEs. Contradictory results have been found with dream recall, flying dreams and the practice of meditation. Other variables like hallucinations, perceptual distortions and falling dreams have been reported to have positive associations with OBEs, but only one study has been published so far on such associations.

Social Psychological Variables

Belief in ESP. Wiedman and Haraldsson (1980) did not find any significant relationship between OBEs and belief in ESP. Alvarado (in press) could not correlate this variable with OBEs since the study dealt only with OB-experients, but reported that 81 percent of the sample believed in ESP before the experience occurred. An attempt was made to correlate the sheep-goat effect with incidence of ESP in the OBE, but the small number of ESP reports (3 cases) did not permit such analysis.

Belief in survival of death. No significant relationship was found between OBEs and belief in survival of death in three studies (Myers, 1982; Palmer, 1979; Wiedman and Haraldsson, 1980). Alvarado (in press) reported that 55 percent of his sample believed in life after death before the OBE.

Other beliefs. Belief in astrology was positively correlated with OBEs in Palmer's (1979) student sample, but not in the townspeople sample. Myers (1982) did not find a significant relationship with this variable.

Palmer (1979) reported no relationships between OBEs and belief in either reincarnation or in the value of parapsychological research. Myers (1982), on the other hand, obtained significant positive associations between these two variables and OBEs.

Aftereffects: General aspects and effects related to daily life. Osis (1979) reported that 88 percent of his OBE sample had generally beneficial changes, while 11 percent had no change and 1 percent had negative changes. Daily functioning was improved for 60 percent of the respondents. There were improvements in social relations (45 percent) and in mental health (50 percent). On the other hand, Blackmore (1984) found only 10 percent of her respondents reported changes in their lives and beliefs.

Wiedman and Haraldsson (1980) reported changes regarding life, beliefs and attitudes (not further specified) for 50 percent of their respondents. In terms of daily activities, 78 percent did not report any effect on work or working abilities, although 17 percent reported an improvement and 5 percent felt their abilities were hindered.

Twemlow et al. (1982) reported that OBEs occurring in conditions of mental calmness had a significantly higher frequency of descriptions of the experience as having dramatic and lasting impact on life and as beautiful and of lasting benefit, than did OBEs occurring in other conditions.

Aftereffects: Attitudes on death, survival of death and religion. Osis (1979) reported that 73 percent of the respondents in his sample had deeper, broader and new meanings in their attitudes on life after death after the OBE. Sixty-seven percent reported a reduction in their fear of death.

A positive correlation was found with multiple OBEs and change of religion (Jones et al., 1984) and with belief in survival with OBEs occurring in conditions of mental calmness (Twemlow et al., 1982).

Comments about social psychological variables. Beliefs correlates seem to be poor predictors of the OBE, though little work has been done on the subject. Interesting findings regarding aftereffects suggest that the OBE may be capable of changing diverse attitudes. However, the reports on these aspects have not been done as systematically as work done with near-death experiences (e.g., Flynn, 1982; Greyson, 1983b; Ring, 1980). This is one of the most neglected areas of OBE research.

General Comments about Psychological Variables

A pattern across psychological correlate studies seems to be positive relationships with variables emphasizing internal attention states, or sensitivity to internal cognitive processes such as intraception, internal locus of control, absorption, fantasy proneness, lucid and vivid dream-

ing. Simple imagery measures, as well as simple measures of beliefs do not seem to be related to the OBE in important ways, but further research may change the present perspective.

Physiological and Medical Correlates

Migraine. Green (1967) reported that 11 percent of her sample admitted having suffered from migraine headaches. Irwin (1983) reported significant positive associations between OBEs and migraine headaches in three out of four surveys. However, further analyses suggest that the association may be artifactual because of correlations with lucid dreaming. Correlations of lucid dreams and OBEs with migraine showed stronger relationships for lucid dreams (.90) than for OBEs (.22). As Irwin wrote: "Apparently the association between OBEs and migraine is due almost entirely to the tendency of people who do not have lucid dreams to be both nonOBEers and free from attacks of migraine" (p. 94).

Form of Birth. Blackmore (1983a) explored possible differences in OBE incidence between persons born by Caesarean and those born in a natural way, to test Honegger's (1983) hypothesis that specific aspects of the experience represent a fetal origin of the OBE (tunnel experiences, cord connections, vibrations). However, OBEs and tunnel experiences did not correlate with form of birth.

Comments about physiological and medical correlates. There is no good evidence for associations between migraine headaches or form of birth. Further studies should be conducted with these and other variables such as illnesses and hereditary factors.

Suggestions for Future Research

Replication and Extensions. Most of the studies showing positive correlations should be replicated and extended along further lines, since systematic research with spontaneous OBEs is only at the beginning stage. Replication is needed for important correlates such as absorption, fantasy proneness and internal locus of control. Also, further work should explore mental health variables in more detail as well as the aftereffects of OBEs. Also valuable would be studies of aspects of OBE phenomenology as they relate to single and multiple reports and to precipitating circumstances such as near-death experiences. I would also like to encourage the exploration of interaction effects such as the effect on OBE phenomenology of sex and circumstances coinciding with or causing the experience and sex and imagery scores. This will give us more reliable information about OBE characteristics and about how the experience relates to other variables.

The surveys I have reviewed also show the need for improved methods of sampling the populations studied. As can be seen in Table 1, only six of the studies reviewed used random samples. The use of randomly selected samples representative of the general population should be more widely used. The study of OBEs in special groups such as mental patients and religious cults or groups is also important since their OBEs could show important differences with those of other groups related to specific beliefs, practices and conditions. In this context crosscultural OBE studies may be especially important.

More attention could be given to trying to identify and verify ostensible paranormal aspects of the OBE, such as ESP on the part of the subject or the appearance to someone else as an apparition. Here I would advise not taking at face value positive responses to a simple ESP question asking only if the respondent "went" somewhere and obtained information of any event occurring there, as done in previous research (Alvarado, 1983). In this context it is important to notice that a study I conducted (Alvarado, in press) found a marked decrease in ESP reports when, in addition to a general ESP question, the subject was asked if he verified that the information obtained was veridical and to write a description of the experience. Several respondents, as shown by the description of the experience, answered the question positively including aspects not possible to verify (e.g., mystical-like experiences) and not following instructions to ignore experiences occurring close to the body. The percentage fell from 33 percent to the initial general question, to 5 percent. This shows the importance of personal interviews or at least of the use of more detailed and critical ESP questions.

Methodological Criticisms

Lack of standardized operational definition of the OBE. Efforts should be directed to the development of a more rigorous definition of the OBE than the simple experiential definition of Palmer (1979) and others (e.g., Blackmore, 1982a; Green, 1968; Twemlow et al., 1982). Such definitions, as Tart (1974b) says, are too broad and they may include "several different types of experiences, some of which run along various kinds of continua" (p. 116). The problem here is that we may be trying to look for psychological and other correlates not with a single experience, but with different types of them. Previous researchers have had problems in accepting positive responses to a general OBE question from reading a description of the experience. Irwin (1980, 1981a) decided to exclude five cases from his survey because they only reported "reductions in bodily awareness, but with no mention of feelings of

exteriorization of consciousness as such" (1981, p. 119). This reduced the initial 20 percent of OBE reports to 12 percent. Green (1960, p. 107; 1966, p. 360) also mentioned similar problems.

Palmer (1978a) has argued for the initial use of a simple experiential definition saying that later research may explore different possible types or subtypes of OBEs. It seems to me that we have reached a stage where such research should be done. Following the example set by near-death experiences researchers, we could try to develop questionnaires that assign scores to define the experience in an operational way considering previously determined criteria (e.g., Ring, 1980). Scales should be developed using factor analysis techniques or correlations between diverse OBE characteristics that may identify consistent phenomenological characteristics or clusters that may be of help in developing an operational definition of OBEs of general acceptance (see Greyson, 1983a, for an example of a near-death experience scale developed along these lines and the work of Noyes and associates with responses to life threatening danger: Noyes, Hoenk, Kuperman and Slymen, 1977; Noyes and Slymen, 1978–79).

Also following the lead of NDE researchers, we could classify various levels of depth and complexity of OBE cases regarding stages or general phenomenological components through the use of scales and questionnaires (Kohr, 1983; Ring, 1980). It may be of interest to compare different levels of OBEs (e.g., complex or deep vs. simple or not deep) in relation to variables found to be positively correlated with the experience such as lucid and vivid dreams, absorption and fantasy proneness. Perhaps certain OBEs (more complex or deeper ones?) may show more consistent correlations or higher magnitude effects with specific variables than other types of OBEs.

Developments along this line will present an operational definition of the experience easy to follow and comparable across studies, due to increased control over the type of reports accepted for inclusion in our studies.

Lack of standardized OBE questionnaire. Similar to the lack of an operational definition of the OBE is the lack of a standardized questionnaire that allows proper comparison of OBE phenomenology between studies. Most studies use different questionnaires and group the data in different ways, making difficult strict comparisons of the frequencies of diverse OBE characteristics such as seeing a cord-like connection between the OB self and the physical body, ESP, OB self-perception and many other variables.

Importance of personal interviews with survey respondents. Most of the studies here reviewed did not interview the respondents personally,

but relied only on questionnaire responses. Interviews may sometimes introduce biases and misinterpretations, but they can be extremely useful (with or without a questionnaire) in clarifying questions for a respondent and assuring that he or she has correctly understood them. As previously mentioned, I found (using a written description of the experience, not an interview) in the case of ESP reports positive answers that did not follow the initial instructions. In interviewing ND-experients who have previously filled out a detailed questionnaire, I have found on some occasions that I can clarify some responses or correct misunderstandings through the interview.

Concluding Remarks

Although much research has to be done in order to fully understand the OBE as a human experience, it is interesting to see that our knowledge of it (taking into consideration the limiting factors discussed in the previous section), especially regarding incidence, OBE phenomenology and psychological and demographic correlates, has advanced somewhat, especially in the last five years or so. The difference is certainly appreciated when we compare our present knowledge with the reviews of spontaneous OBE research in the 1930s (Bozzano, 1934/1937) and in more recent periods (Blackmore, 1978; Eastman, 1962; Tart, 1974a). It is to be hoped that this trend will continue and that more efforts will be directed to test for OBE models and theories as well as the various hypotheses suggested in recent literature, since this will help to make sense of the diverse correlates reviewed in this paper.

NOTES

1. I wish to thank Ian Stevenson and Nancy L. Zingrone for useful suggestions for the improvement of this paper.

2. For material relevant to 19th century ideas about OBEs see Gurney, Myers and Podmore, 1886; Jung-Stilling, 1808/1851 and Owen, 1860.

3. A paper now in preparation will discuss OBE research in a historical perspective presenting a more detailed chronology and periods of research.

4. The low fantasy prone group is the exception, with an OBE incidence of 8 percent (Wilson and Barber, 1983).

5. Only four studies with randomly selected samples are included here.

6. Only six studies with nonstudent participants are included here.

7. Blackmore did not present a statistical analysis of the difference, but this can be done from information in the report: χ^2 (1) = 10.60, $p < .005$.

8. An analysis done using information presented in the report reveals a statistically significant difference: χ^2 (1) = 112.5, $p < .001$.

9. One of Blackmore's (1982a, p. 61) case collection studies is not included in the analysis due to lack of information regarding actual frequencies.

10. The difference is statistically significant using a Wilcoxon matched pair signed rank test which maintains the identity of the individual studes ($t = 30.5$, $p < .02$). I am

grateful to Debra H. Weiner and Nancy L. Zingrone for their suggestions and for conducting computer analyses of my data.

11. E-OBEs had a higher frequency of reports of an earthly environment than N-OBEs (78 percent vs. 31 percent, $p < .001$).

12. These are my calculations, according to information in the report.

13. No test of significance was reported, but analyses done using information presented in the report reveal significant results: χ^2 (1) = 29.88, $p < .001$.

BIBLIOGRAPHY

Alvarado, C. S. "Experiencias ecsomáticas: Revisión de la evidencia experimental moderna." *Psi Comunicación*, 1976, *2*, 7–17.

Alvarado, C. S. "Phenomenological differences between natural and enforced out-of-body experiences: A re-analysis of Crookall's findings." *Theta*, 1981, *9*, 4, 10–11.

Alvarado, C. S. "ESP during out-of-body experiences: A review of experimental studies." *Journal of Parapsychology*, 1982, *46*, 209–230.

Alvarado, C. S. "ESP and out-of-body experiences: A review of spontaneous studies." *Parapsychology Review*, 1983, *14*, 4, 11–13.

Alvarado, C. S. "Phenomenological aspects of out-of-body experiences: A report of three studies." *Journal of the American Society for Psychical Research*, 1984, *78*, 219–240.

Alvarado, C. S. "ESP and out-of-body experiences: An attempted analysis." *Research Letter* (Parapsychology Laboratory, University of Utrecht), in press.

Banks, F. *Frontiers of Revelation*. London: Max Parrish, 1962.

Blackmore, S. J. *Parapsychology and Out-of-the-Body Experiences*. Hove, East Sussex, England: Transpersonal Books, 1978.

Blackmore, S. J. "A Survey of OBEs." In W. G. Roll, J. Beloff, and J. McAllister (Eds.), *Research in Parapsychology 1980*. Metuchen, NJ: Scarecrow Press, 1981.

Blackmore, S. J. *Beyond the Body*. London: Heinemann, 1982. (a)

Blackmore, S. J. "Have you ever had an OBE?: The wording of the question." *Journal of the Society for Psychical Research*, 1982, *51*, 292–302. (b)

Blackmore, S. J. "Out-of-the-body experiences, lucid dreams and imagery: Two surveys." *Journal of the American Society for Psychical Research*, 1982, *76*, 301–317. (c)

Blackmore, S. J. "Birth and the OBE: An unhelpful analogy." *Journal of the American Society for Psychical Research*, 1983, *77*, 229–238. (a)

Blackmore, S. J. "Imagery and the OBE." In W. G. Roll, J. Beloff and R. A. White (Eds.), *Research in Parapsychology 1982*. Metuchen, NJ: Scarecrow Press, 1983. (b)

Blackmore, S. J. "A postal survey of OBEs and other experiences." *Journal of the Society for Psychical Research*, 1984, *52*, 225–244.

Blackmore, S. J., and Harris, J. "OBEs and perceptual distortions in schizophrenic patients and students." In W. G. Roll, J. Beloff and R. A. White (Eds.), *Research in Parapsychology 1982*. Metuchen, NJ: Scarecrow Press, 1983.

Bozzano, E. *Les Phénomènes de Bilocation*. Paris: Jean Meyer, 1937. (First published in Italian in 1933).

Broad, C. D. "Phantasms of the living and of the dead." *Proceedings of the Society for Psychical Research*, 1953, *50*, 51–66.

Capel, M. "Las experiencias extracorporales: Revisión de la casuística y algunas aportaciones explicativas." *Psi Comunicación*, 1978, *4*, 49–71.

Cook, A. M. and Irwin, H. J. "Visuospatial skills and the out-of-body experience." *Journal of Parapsychology*, 1983, *47*, 23–35.

Crookall, R. *The Study and Practice of Astral Projection*. London: Aquarian Press, 1961.

Crookall, R. *More Astral Projections*. London: Aquarian Press, 164.

Crookall, R. *Intimations of Immortality*. Cambridge: James Clark, 1965.

Crookall, R. *Out-of-the-Body Experiences: A Fourth Analysis*. New Hyde Park, NY: University Books, 1970.

Denis, L. "Psychologie expérimentale: Phénomènes d'extériorisation et de dédouble-

ment." In P. Janet (Ed.), *IV^e Congrès International de Psychologie.* Paris: Félix Alcan, 1901.

Eastman, M. "Out-of-the-body experiences." *Proceedings of the Society for Psychical Research,* 1962, *53,* 287–309.

Flynn, C. P. "Meaning and implications of NDE transformations: Some preliminary findings and implications." *Anabiosis,* 1982, *2,* 3–14.

Gabbard, G. O., Twemlow, S. W. and Jones, F. C. "Do near death experiences occur only near death?" *Journal of Nervous and Mental Disease,* 1981, *169,* 374–377.

Giovetti, P. *Viaggi Senza Corpo.* Milano: Armenia, 1983.

Green, C. E. "Analysis of spontaneous cases." *Proceedings of the Society for Psychical Research,* 1960, *53,* 97–161.

Green, C. E. "Spontaneous paranormal experiences in relation to sex and academic background." *Journal of the Society for Psychical Research,* 1966, *43,* 357–363.

Green, C. E. "Ecsomatic experiences and related phenomena." *Journal of the Society for Psychical Research,* 1967, *44,* 111–131.

Green, C. E. *Out-of-the-Body Experiences.* London: Hamish Hamilton, 1968.

Green, J. T. and Friedman, P. "Near-death experiences in a Southern California population." *Anabiosis,* 1983, *3,* 77–95.

Greene, F. G. "Multiple mind/body perspectives and the out-of-body experience." *Anabiosis,* 1983, *3,* 39–62. (a)

Greene, F. G. "The out-of-body experience, extrasomatic or intrasomatic phenomenon? A non-Euclidian higher space approach." *Journal of Religion and Psychical Research,* 1983, *6,* 159–180. (b)

Greyson, B. "The near-death experience scale: Construction, reliability, and validity." *Journal of Nervous and Mental Disease,* 1983, *171,* 369–375. (a)

Greyson, B. "Near-death experiences and personal values." *American Journal of Psychiatry,* 1983, *140,* 618–620. (b)

Greyson, B. and Stevenson, I. "The phenomenology of near-death experiences." *American Journal of Psychiatry,* 1980, *137,* 1193–1196.

Gurney, E., Myers, F. W. H. and Podmore, F. *Phantasms of the Living.* (2 vols.) London: Trubner, 1886.

Haraldsson, E., Gudmundsdottir, A., Ragnarsson, J. L. and Jonsson, S. "National survey of psychical experiences and attitudes towards the paranormal in Iceland." In J. D. Morris, W. G. Roll and R. L. Morris (Eds.), *Research in Parapsychology 1976.* Metuchen, NJ: Scarecrow Press, 1977.

Hart, H. "ESP projection: Spontaneous cases and the experimental method." *Journal of the American Society for Psychical Research,* 1954, *48,* 121–146.

Honegger, B. "The OBE as a near-birth experience." In W. G. Roll, J. Beloff and R. A. White (Eds.), *Research in Parapsychology 1982.* Metuchen, NJ: Scarecrow Press, 1983.

Irwin, H. J. "Out of the body down under: Some cognitive characteristics of Australian students reporting OOBEs." *Journal of the Society for Psychical Research,* 1980, *50,* 448–459.

Irwin, H. J. Correspondence. *Journal of the Society for Psychical Research,* 1981, *51,* 118–120. (a)

Irwin, H. J. "The psychological function of out-of-body experiences: So who needs the out-of-body experience?" *Journal of Nervous and Mental Disease,* 1981, *169,* 244–248. (b)

Irwin, H. J. "Some psychological dimensions of the out-of-body experience." *Parapsychology Review,* 1981, *12,* 4, 1–6. (c)

Irwin, H. J. "The association between out-of-body experiences and migraine." *Psi Research,* 1983, *2,* 2, 89–96.

Jones, F. C., Gabbard, G. O., and Twemlow, S. W. "Psychological and demographic characteristics of persons reporting out-of-body experiences." *Hillside Journal of Clinical Psychiatry,* 1984, *6,* 105–115.

Jung-Stilling, J. H. *Theory of Pneumatology.* New York: J. S. Redfield, 1851. (First published in German in 1808).

Kohr, R. L. "A survey of psi experiences among members of a special population." *Journal of the American Society for Psychical Research,* 1980, *74,* 395–411.

Kohr, R. L. "Near-death experiences, altered states, and psi sensitivity." *Anabiosis,* 1983, *3,* 157–176.

McCreery, C. *Psychical Phenomena and the Physical World.* New York: Ballantine Books, 1973.

Muldoon, S. *The Case for Astral Projection.* Chicago: Ariel Press, 1936.

Muldoon S. and Carrington, H. *The Phenomena of Astral Projection.* London: Rider, 1951.

Murray, D. *A Survey of Reported Psi and Psi-Related Experiences in the Philippines among the Isnag of the Kalinga-Apayao Province, and Sampaloc Residents in Manila.* Master's thesis, John F. Kennedy University, 1983.

Myers, F. W. H. *Human Personality and Its Survival of Bodily Death.* (2 vols.) New York: Longmans, Green, 1903.

Myers, S. A. *Personality Characteristics as Related to Out-of-Body Experiences.* Master's thesis, Saint Louis University, 1982.

Myers, S. A. and Austrin, H. R. "Distal eidetic technology: Further characteristics of the fantasy-prone personality." *Journal of Mental Imagery,* in press.

Myers, S. A., Austrin, H. R., Grisso, J. T. and Nickeson, R. C. "Personality characteristics as related to the out-of-body experience." *Journal of Parapsychology,* 1983, *47,* 131–144.

Neppe, V. N. "A study of the incidence of subjective paranormal experience." *Parapsychological Journal of South Africa,* 1981, *2,* 1, 15–37.

Noyes, R., Hoenk, P. R., Kuperman, S. and Slymen, D. J. "Depersonalization in accident victims and psychiatric patients." *Journal of Nervous and Mental Diseases,* 1977, *164,* 401–407.

Noyes R. and Slymen, D. J. "The subjective response to life threatening danger." *Omega,* 1978–79, *9,* 313–321.

Osis, K. "Insiders' view of the OBE: A questionnaire survey." In W. G. Roll (Ed.), *Research in Parapsychology 1978.* Metuchen, NJ: Scarecrow Press, 1979.

Osty, E. "Le vision de soi." *Revue Métapsychique,* 1930, No. 3, 185–197.

Owen, R. D. *Footfalls on the Boundary of Another World.* Philadelphia: J. B. Lippincott, 1860.

Palmer, J. "The out of body experience." Unpublished manuscript, 1975.

Palmer, J. "ESP and out-of-body experiences: An experimental approach." In D. S. Rogo (Ed.), *Mind Beyond the Body.* New York: Penguin Books, 1978. (a)

Palmer, J. "The out-of-body experience: A psychological theory." *Parapsychology Review,* 1978, *9,* 5, 19–22. (b)

Palmer, J. "A community mail survey of psychic experiences." *Journal of the American Society for Psychical Research,* 1979, *73,* 221–251.

Poynton, J. C. "Results of an out-of-the-body survey." In J. C. Poynton (Ed.), *Parapsychology in South Africa.* Johannesburg: South African Society for Psychical Research, 1975.

Ring, K. *Life at Death.* New York: Coward, McCann and Geoghegan, 1980.

Rogo, D. S. "Aspects of out-of-the-body experiences." *Journal of the Society for Psychical Research,* 1976, *48,* 329–335.

Sabom, M. *Recollections of Death.* New York: Harper and Row, 1981.

Tart, C. T. *On Being Stoned.* Palo Alto, CA: Science and Behavior Books, 1971.

Tart, C. T. "Out-of-the-body experiences." In J. White (Ed.), *Psychic Exploration.* New York: G. P. Putnam's Sons, 1974. (a)

Tart, C. T. "Some methodological problems in OOBE research: Comments on the symposium." In W. G. Roll, R. L. Morris and J. D. Morris (Eds.), *Research in Parapsychology 1973.* Metuchen, NJ: Scarecrow Press, 1974. (b)

Twemlow, S. W., Gabbard, G. O. and Jones, F. C. "The out-of-body experience: A phenomenological typology based on questionnaire responses." *American Journal of Psychiatry,* 1982, *139,* 450–455.

Tyrrell, G. N. M. *Apparitions.* London: Gerald Duckworth, 1953. (First published in 1942).

Wiedman, K. D. and Haraldsson, E. "Some results concerning reported OBEs in Iceland." Unpublished manuscript, 1980.

Wilson, S. C. and Barber, T. X. "The fantasy-prone personality: Implications for understanding imagery, hypnosis, and parapsychological phenomena." In A. A. Sheikh (Ed.), *Imagery: Current Theory, Research, and Application.* New York: John Wiley, 1983.

DISCUSSION

SCHOUTEN: I was very pleased to hear the latest comments about the methodological problems involved in OBE research. But it also created some doubt in me with regard to the previous part of your paper. I think, indeed, that in these studies, the definitions are so bad and the questions are so uncertain, that you finish with a frequency range of 80 or 95 percent. Then my conclusion is that there is probably so much response bias in answering the questions that I doubt whether you can draw any conclusions from this sort of study in the first place. I would advise, as you said, that these studies should check on the stories. Researchers should apply their own criteria of what an OBE should be, instead of leaving it to subjects to fill in.

I think measuring the OBE is very difficult, but also measuring many of the other variables is done in a very weak way. What surprised me is that so little skill is used in measuring other variables. That means that if you combine both, you end up with a mess. That is why I think that many conclusions that you draw from these theories actually are very weakly based. My question is why didn't you try to make a split at least in quality levels of these studies? You lump them all together, but I am not familiar with many. I can well imagine that you might say that, at least according to some criteria for measuring variables, you can discriminate between better quality studies and lower quality studies.

ALVARADO: I thought about doing that, but I found so much variety in these studies that it seemed to me that I would end up with so few studies it would have been even more difficult to make a generalization from them. But I agree with your points. All the summaries that I have been presenting here may be questioned. We may not be measuring the same sort of OBEs or even taking into account the other variables, as you were saying. I agree with that and in the paper I mention some problems. I just wanted to present what we have now. There seem superficially to be a few correlations, but we should try to find these same correlations with more operationalized definitions using random

samples. If we still find those same patterns, then we will be able to accept them and say that we have made a considerable advance. But that lies in the future.

PALMER: Let me say a little bit in defense of the "naive" definition of the OBE, which I think has been treated rather naively. What I am referring to is defining the out-of-body experience operationally in terms of a simple question, such as whether the subject had an experience that really led him to conclude at the time that he was out of the body. This is the definition that I used in our Virginia survey, and I used it for a very specific and conscious purpose.

The question that led me to my research was what kinds of experiences led people to think they were out of their bodies? In the context of that objective I think it was a very good question to ask. I agree with you that it would be good perhaps to develop a scale around that question and also to supplement it with interviews. There are certain limits in the kind of study we were doing which made that impossible, but I think it is of value, that it is a good thing to do.

Let me be a little bit critical of some of the other attempts to define out-of-body experiences. We have all kinds of criteria, such as "it is only an out-of-body experience when you see your body," "it is only an out-of-body experience when the quality of the experience is like normal vision." There are all kinds of these criteria and I find all of them arbitrary. In other words, I don't see a rationale for defining the out-of-body experience in that particular way. For example, do we really want to exclude an experience which otherwise looks like any other out-of-body experience just because the person left his body too quickly to look back? That does not make sense to me. What I am suggesting is not so much that we necessarily adopt the same definition or approach that I did, but rather that we have some *rationale* for defining out-of-body experiences and not do it arbitrarily.

When you define OBEs more narrowly of course you are going to get a lower incidence of reports, as for example in Blackmore's study. But, from *my* point of view, all Blackmore did was bias her sample. She said that the subject should not be concerned with how he reacted to his experience, but only that parapsychology has defined it this way. Therefore, you can say you have had an out-of-body experience only if you conform to our definition. Now again, if that is your purpose, fine, but I don't see anything problematic about the fact that you get a lower incidence of reports. That seems quite natural.

It is true that when you take a broad definition like mine you may get clusters of qualitatively different kinds of experiences. What those are is an empirical question. I think through techniques such as factor

analysis you should determine *empirically* what the appropriate clusterings and classifications are and not try to define those in advance in terms of arbitrary criteria. For example, in our study we looked at the relationship between the kinds of circumstances in which out-of-body experiences occurred and the characteristics of those experiences. You cannot address such questions adequately if you eliminate from your sample at the outset the full range of potential experiences.

ALVARADO: I agree with that. In fact, in part of my paper I mention factor analysis and mention what has been done on these lines with depersonalization experiences. I am very much against persons who have defined the OBE subjectively, that they have to see the physical body, they have to have ESP or they have to see the silver cord. I think that is arbitrary. The OBE should really be defined with techniques that allow us to be more objective and to get at what is really characteristic of the experience. I am very much in favor of that. The other point I would like to make is not really contrary to what you are saying, it is just that I would like to know what we really mean by an OBE. Perhaps we can classify an OBE as of the first or of the second type. Can there be a simple OBE that has only the sensation of being out of the body? Will that be the same as an OBE that also includes ESP, or travel to distant locations or dimensions or seeing of deceased entities? Is it fair to compare both of them? That is an empirical question. I would like to see if, for example, fantasy proneness correlates for both types of experiences or if the more complex one has higher fantasy scores than the simple one. In that way in the long run we will be able perhaps to talk about different sub-types of OBEs or different aspects of the experiences, and be more sure of what we are measuring across studies. Every investigator should be clear how he or she is defining the OBE, at what level of experience or what characteristics he or she is including in the OBE definition, so that we may have really good comparisons among all these studies and not lump everything together, since we may be measuring different levels of experiences.

WEINER: I find your review very useful, very interesting. I have a question on a specific point and this has to do with the phenomenological differences between the reports from persons who have single out-of-body experiences and those who have multiple ones. I am wondering if in your review you came across any information that would tell us whether there is a developmental process in those people who have had multiple out-of-body experiences? In other words, are their first experiences similar to those of people who report only one experience and then other characteristics develop later on or is it the case that right from the beginning these people are experiencing dif-

ferent kinds of phenomenological events? If the latter is true, we might be able to use that information to identify people who are likely to have multiple experiences.

ALVARADO: I don't know if anyone has done something really systematic on that. I believe Celia Green has some information. I do not remember the exact details. I think that should be explored more systematically. I was thinking at one time to do phenomenological comparisons in that way, because I think it is a very interesting line of research. I think it may be logical to expect richer experiences in terms of phenomenology, more variety in the multiple experiences than in single experiences. Perhaps that will be the case. We should try to test that to see if that is actually what is happening.

MORRIS: First, a brief suggestion. On the definition problem, perhaps it would be helpful for you to code your studies in accordance with the researcher's definition and then include that as a variable, if you do that with some estimate of how likely it is that the researchers actually communicate their definition to the subjects.

Secondly, have there been any studies of OBE proneness? In other words, working with groups of people who have not yet had an out-of-body experience, taking measures from them to see whether or not you can get any that turn out to have predictive value. You might even be able to take groups of people who have and have not reported out-of-body experiences from whom common measures have been taken some time in the past to see which measures would predict successfully. Has that been done or anything like it?

ALVARADO: No, not that I know of. I don't know of any study that has used that approach.

MORRIS: It is important because some of the strong correlates you have found seem to be of an experientially powerful nature. One possibility is that the correlates are all engendered by the out-of-body experience rather than the other way around or rather than becoming a third factor.

ALVARADO: Yes, I agree.

HEARNE: One highly anomalous aspect of many OBE reports to me is the fact that the visual perspective is often very unusual. This is high in the air, a perspective that is rare in peoples' experience and their repertoire of memory images. I think there must be a reason for this. I would like to suggest a possible cause for this phenomenon and I would appreciate your comments. It could be the result of a perceptual contrast effect. You will know that if you perceive a repetitive stimulus such as a spinning wheel or pressure on the arms, when that stimulus is removed a strong opposite after perception is experienced. And we

have a constant source of stimulation in our gravity sense in our inner ears. Is cortical arousal high so that visual imagery is experienced? Of course, the whole of our visual perception is based on active imagery. And yet the very important gravity sense is removed and it is not surprising that the sensation of ascending would result. In that case I would hypothesize that the condition producing a rapid cutoff of the gravity sense would give a more marked sensation of ascending. Perhaps it is feasible to perform such a study medically. I wonder if you have come across that idea?

ALVARADO: I have seen in the literature an explanation in terms of changes in the inner ear, but not as detailed as you are putting it. I do not know if anyone has tried to consider that in a formal study.

HEARNE: No, I think we have this gravity sense all the time. It overwhelms our visual sense. You know if you have got a sensation of falling, it dominates everything else. I think the sudden removal of gravity would even in wakefulness cause you to have a sensation of rising. So many people report flying up in the air, off the ceiling or something like that. I think it is a possibility. I think it might be possible to perform an experiment medically.

ALVARADO: You mean to induce the experience?

HEARNE: To induce an experience by somehow knocking out this gravity sense. I have got another point I would like to make later about a method I have got of inducing such experiences. I would like your comment on that later on.

BENOR: I would be interested in your comments on motivational factors in OBEs. In healing it is interesting to note that sometimes when the healer is deliberately sending distant healing the healee perceives the presence as an out-of-body observation of the healer. There are some reports of the healee sending a letter or intending to visit a healer and having the OBE prior to contacting the healer, which seems to indicate either a time displacement or an ability to telepathically summon the healer. I would be interested in your observations on occurrences of that sort.

ALVARADO: Well, that seems to be related to OBE apparitions. It is part of the literature of the paranormal aspects of the OBE. There are many reports of apparitions of the OBEr going to certain places. It is difficult to say in terms of motivation what is going on there. Many persons in the past have claimed that they can induce the experience when they concentrate extremely hard. Some of them are very much motivated to go to certain places or do a certain task. But I think that what we have here are merely anecdotal accounts. It is very difficult to assess the role of motivation and if the other person has something

to do with these apparitions. It may make a difference if the person is thinking about the one projecting or not. From what I know from the literature I do not think we have enough information to make any decision on that. That is one of the areas I mentioned briefly that I think we should explore more.

GIESLER: I have two points. My first point has to do with the definition problem. I want to emphasize the way that you depicted it as opposed to the point John Palmer was making. And that has to do with the need to define and be sure of what exactly we mean by phenomenologically simple versus complex. It is essential that everything is understood by respondents so that when you ask a question regarding an "OBE," the respondent knows exactly what *you* are talking about. I think that Morris's point about coding for specific studies will be very helpful in that regard. But I wanted to point out that once you get out of our culture you have big problems. If you do cross-cultural studies, you want to be able to translate the system of coding or exactly what it is you mean by the OBE. Our whole conceptualization of something like OBE or psi is culture bound, so that once you get out of our culture, you will need to take that into account, as when, for instance, you discuss the Philippine study or any others. Thus, whether outside, or within our own culture, the issue of definition is crucial. I think that if you could intensify your interviews, you would be able to modify and refine your definition of OBEs and learn how to communicate your questions about OBEs better.

My second point gets into cross-cultural studies. You did not mention Dean Sheil's cross-cultural study of OBEs, did you?

ALVARADO: No.

GIESLER: Basically, he sampled out of what are called the human relations area files (HRAF) hundreds of societies and looked to see according to ethnographers the nature of and how many OBEs were reported. But there is a caution in what he did that I think can apply to what you are doing. For example, he said that the Isnag tribe reports no instance of OBEs. But that conclusion was based on what, in terms of OBE research, was a methodologically very weak study. After all, for the ethnographer of the Isnag, finding out whether there were OBEs or not was completely tangential to his research orientation. Nevertheless, Dean Sheils used that ethnographer's report as part of his evidence. However, when Dianne Murray, as you mentioned, went to the Philippines, she carried out a very specific, concentrated study, methodologically much stronger than the one the ethnographer would have done, and found a 95 percent incidence of OBEs in that case! So the point that is coming from Sheils' cross-cultural study is that if you

have some data derived from a weak methodology and other data on the same group derived from a strong methodology, perhaps that can explain why you have low incidence or high incidence of OBEs reported in any particular group. Hence, in the case of cross-cultural studies, the problem is clear, but we might also go back to any studies that pertain only to the United States, for instance, to see whether it is not methodology that accounts for the differences in incidence.

ALVARADO: I can agree with that. In none of these studies that I reviewed has there been any sort of personal interview and even less the more intensive structured approach that you are proposing. But if we limit it only to the questionnaire, we can see that some of these questions are very simple, such as "Have you traveled outside your body?" and that is it. Others are qualified in ways such as "Do not answer things close to the physical body." In terms of method, I think that may be similar to what you are saying.

GIESLER: Is it possible to have something such as Dr. Sheils was getting at, providing studies that you feel would be low methodologically and strong methodologically?

ALVARADO: I think probably it will be possible.

MISHLOVE: The question about OBEs which is really of greatest interest to me is one that I didn't really feel was addressed in your paper and that is whether or not OBEs are psi conducive. I know there have been a number of experimental studies that have attempted to get at that issue. I should think that in the spontaneous cases you would have some way to measure whether veridical psi experiences or apparent psi experiences were reported. The other issue that comes up for me, Carlos, that seems very striking in going over your findings, is that there were two very strong effects. One is the fantasy proneness results of Barber and Wilson and the other is Dianne Murray's differentiation between the Isnag tribe living in the country and the Philippinos in Manila. That would suggest to me, if those findings held up, that a large part of the OBE experience is a result of fantasy and suggestion. I think it would be interesting, therefore, to try and differentiate those effects, fantasy and suggestion as psi conducive states as opposed to what is typically called an OBE experience. Could you comment on that?

ALVARADO: I have some information on the percentages of ESP reports and so forth, that I did not cover for lack of time. I think that most of the modern studies on ESP have been mainly descriptive, such as what percentage have OBEs. Practically no one that I can remember has tried to actually check for evidentiality, whether the testimony really holds. There have been no attempts, except for something that

I tried to do, that I could not even do for a small sample size—to correlate ESP with other variables. ESP in the OBE may relate to extraversion or to fantasy proneness. I don't know if anyone has tried to do that. I tried for the sheep/goat effect, but I could not even make an analysis because I ended with only three ESP reports and you can do nothing with so small a sample.

The other point was . . .

MISHLOVE: Well, factoring out fantasy proneness and suggestibility.

ALVARADO: Is your question about how do we explain the experience?

MISHLOVE: I do not know if I was exactly asking a question. I just wanted to highlight those two findings as being the strongest ones that I observed in your survey and I think of great theoretical importance.

ALVARADO: Some persons say that this is clear evidence for a psychological interpretation of OBEs, and some psychological models say that everything is fantasy and hallucination. These types of findings may be supportive of that idea. On the other hand, even Harvey Irwin, who has been practically the one person who made the start of the whole cognitive approach to OBEs in modern times, has argued that even when we have significant correlations with a variable such as absorption, that does not mean that we can explain the OBE as hallucination or imagination. It may be that, if we accept externalization models, such as astral projection, we need a skill of attention or absorption to get together our internal resources, and then do the projection. He has argued that his correlations may be neutral according to each model, but that is very individual. We can argue both ways perhaps.