

EXPLORING THE FACTORS RELATED TO THE AFTER-EFFECTS OF OUT-OF-BODY EXPERIENCES

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ABSTRACT

In this exploratory study we investigated the relationship between self-reported changes of attitude after out-of-body experiences (OBEs) and aspects of the OBE. Assuming that the degree of complexity of the OBE would have an impact on the experient, we hypothesized a positive and significant correlation between an after-effect measure and the number of OBE features per participant. Other analyses were conducted in relation to demographic variables and to different features and aspects of the OBE. Eighty-eight OBE cases were obtained in reply to a call for cases published in newspapers, magazines, and on-line discussion boards. Of these individuals, 81% claimed to experience some change due to their OBEs. The results support the hypothesis of a positive and significant relationship between the number of OBE features and the measure of change. We also found positive significant relationships between the measure of change and measures of religiosity, OBE frequency, and OBEs at will. The best predictor of the OBE after-effects was the number of OBE features. Future work could use qualitative methods and test developmental models of the after-effects of exceptional experiences.

INTRODUCTION

One of the concerns of modern psychology is the study of changes of personality, attitudes, values and behaviors as a function of life experiences. This includes the study of variables associated with change in psychotherapy (e.g. Hanna & Ritchie, 1995; Snyder & Ingram, 2000) and the effect of a variety of positive and negative experiences or events (e.g. Harvey, 2002; Heatherton & Weinberger, 1994; Kottler, 2001; Stroebe, Hansson, Stroebe & Schut, 2001). The latter include traumatic experiences such as physical and sexual abuse as well as experiences associated with grief and bereavement. However, the literature also suggests that other human experiences can have important effects on our personality, beliefs, and attitudes. This is true even of something so normal and frequent as the experience of falling in love (e.g. Aron, Paris & Aron, 1995). In addition, studies have been conducted on the influence of altered states of consciousness, and of what some consider to be exceptional human experiences, on psychological changes in individuals. There is a growing literature about the effects of dreams, which includes religious conversion (Bulkeley, 1995) and a classification of the types of impactful dreams people experience (Busink & Kuiken, 1996). Other studies have investigated the transformative effects of psychotropic drugs (Doblin, 1991), of the practice of meditation (Emavardhana & Tori, 1997), and of so-called peak (Lanier, Privette, Vodanovich & Bundrick, 1996) and mystical experiences (Thomas, 1997). The latter two types of experience, and their effects on the transformation of values, were discussed in two important publications by William James (1902) and Abraham Maslow (1964), both of which still serve as a reminder of the importance of studying the after-effects of certain experiences.

Another related area is the impact of parapsychological experiences on people's behaviors, beliefs, and attitudes. These experiences include cases of apparent ESP, apparitions, out-of-body experiences (OBEs), near-death experiences (NDEs), auras, and witnessing a variety of such physical phenomena as the movement of objects without normal contact. Unfortunately, parapsychology as a field of research has largely neglected the systematic study of after-effects of psi experiences. It seems that some current researchers do not think this is part of the subject-matter of parapsychology, and relegate anything that does not deal with the 'reality' of these experiences to psychology or to sociology. This approach to the field separates parapsychology from other behavioral sciences (e.g. psychology, psychiatry, and sociology), in which there is generally a wider conception of subject-matter, and of the range of approaches one can bring to the scientific understanding of one's area of study. This neglect is also unfortunate in that, without knowledge of the parameters of parapsychological after-effects, parapsychologists confine themselves strictly to basic research that has little relevance to the experient's concerns. This lack of interest in such issues is one reason why the area of 'clinical parapsychology' is so underdeveloped, and lacks so much of the basic knowledge that is essential both for an empirical understanding of the problems people present and for the development of strategies to help individuals cope with their experiences (on this topic see Coly & McMahon, 1993; Kason & Degler, 1996).

Such after-effects have been discussed in the context of individual life experiences in a variety of autobiographies which range from such classics as Eileen J. Garrett's *Adventures in the Supernormal* (1949) to more recent articles (e.g. Adler, 1996; Ross, 1996) and book-length discussions (e.g. Grosso, 1992; Harris, with Bascom, 1990). In his well-known survey of psi experiences, John Palmer (1979) presented the prevalence of many types of after-effects in two randomly-selected samples of students and townspeople in an American community. His efforts led to additional work with the same questionnaire (e.g. Usha & Pasricha, 1989; Zangari & Machado, 1996), which showed how common it is to claim changes after psi experiences in the sense of self, in religious values, and in interpersonal relations, among others. According to Kason (Kason & Degler, 1996, Chapter 11) the positive psychological after-effects of parapsychological and other experiences include abandonment of self-destructive habits, re-evaluation of relationships, resolution of psychological problems, absolute belief in the existence of a higher power, loss of fear of death, increased humanitarianism, love and empathy, decreased materialism, and increased spiritual focus. Among the negative after-effects, Kason listed the following: anxiety, confusion, fixation with the experience, fear of losing control, fear of going insane, inexplicable mood swings, intensification of unresolved psychological issues, and emotional distress.

More recent studies have documented and investigated these after-effects—or correlates that may be after-effects—in a variety of ways (Brown & White, 1997; Dinnage, 1991; Kennedy & Kanthamani, 1995a, 1995b; Kennedy, Kanthamani & Palmer, 1994; Milton, 1992; G. Palmer, 1997; Stowell, 1997; R. A. White, 1997d). Perhaps the best known literature of this kind is that reporting studies of effects after NDEs (e.g. Flynn, 1986; Greyson, 1992; Groth-Marnat & Summers, 1998; Ring, 1984; Schwaniger, Eisenberg, Schechtman & Weiss, 2002;

Sutherland, 1995; P. R. White, 1997). Recent studies have attempted to assess the impact of phenomena such as feelings of presence of deceased spouses (Lindstrom, 1995) and of having visions, physical sensations or dreams about one's deceased children (Sormanti & August, 1997).

All these studies suggest that such experiences may be conceptualized as agents of change in people's beliefs and attitudes. In our experience of talking with persons who have had some of these phenomena happen to them, as well as in the experience of others who have investigated these phenomena, individuals tend to talk about the implications of their experiences in spiritual, moral and religious terms. These conversations and interviews add to the growing evidence of the importance of studying these phenomena from the point of view of their life-changing potential. As Rhea White has argued, exceptional experiences "extend the limits of who we *are* and what we perceive reality to be (i.e. what *is*). They extend our human being in ways that enable us to know more and do more" (1997c, p.137). In White's (1997b) view, these experiences "can serve as seeds of new growth which can, if honored and attended to, lead to a sense of connection with others and with life, to a sense of meaning, wonder, and delight" (p.82). Grosso (1992) sees parapsychological and other exceptional experiences as important events that "shatter our routine image of self or soul" (p.143). But whatever the process involved in the effects of exceptional experiences, the fact is that there is enough evidence that such changes occur and that they are important in the lives of the experiencers. It is necessary, now, to conduct further research to try to relate these after-effects to other variables so that eventually we may develop models of parapsychological after-effects which can help to understand better the transformative power of these experiences.

In this paper we present work which explores correlates of changes in attitudes after OBEs. Although the OBE is one of the main components of the NDE, we will focus here on the OBE in a variety of circumstances, not only those which were perceived to have occurred close to death.

OBES AND CHANGES IN ATTITUDES AND VALUES

It has long been known that individuals who have had OBEs say that their outlook on life and their beliefs have changed in many ways. For example, Sylvan Muldoon said clearly that his OBEs gave him direct knowledge of the reality of survival of bodily death (Muldoon & Carrington, 1929, p.316). Crookall (1978, pp.178-189) summarized the testimony of many OB-experiencers regarding the effects of the OBE. He categorized them in terms of those who believed in the existence of a secondary body capable of carrying consciousness, and those who obtained assurance of the idea of survival of bodily death. Our own reading of OBE case collections has uncovered many examples of individuals who say that their OBEs led them to believe in survival of bodily death, or has brought them to alter their beliefs concerning spirituality or human nature (e.g. Bozzano, 1937, pp. 51, 66, 69, 73, 75; Crookall, 1964, pp. 12, 16, 18, 20, 49, 51, 56; Giovetti, 1983, pp.113-119; Muldoon & Carrington, 1951, pp.81, 120, 138). In a recent example, OB-experient Albert Taylor (1998) wrote: "We exist independently of our physical bodies, hence the ability to travel out of the body. For me this has been proof enough that I will survive death's embrace"

(p.95). Perhaps the best general description of OBE after-effects comes from OB-experient Carol Eby (1996, p.240):-

The experience of astral projection has profound effects on ourselves, including our concept of reality, outlook on life, and feelings concerning death. Consciously leaving the body increases our understanding of ourselves, the universe, and our relationship with the universe, but it also raises countless questions and disrupts forever previously held beliefs . . . All of these effects cause permanent changes in one's personal philosophy of life.

More recently, some have investigated these after-effects. Osis (1979) reported that 88% (N = 304) of the OB-experients in his study in the United States experienced what they considered to be beneficial changes after their OBEs. Eleven percent reported no changes, and one percent said they had negative changes. Sixty percent claimed that their daily life improved because of the OBE.

In another study with a representative sample from England, Blackmore (1984) found that 10% of her participants reported changes in beliefs and in other aspects of their lives due to the OBE. However, in a study of a subset of respondents from a representative sample of residents of Iceland, it was found that, out of the 18 individuals interviewed, 56% reported changes in their lives and in their attitudes and beliefs. The rest (44%) did not report such changes (Wideman & Haraldsson, 1980).

Gabbard and Twemlow (1984, p.23) found in the United States that 86% of those who claimed to have had an OBE experienced heightened awareness in their perception of reality, and 78% claimed long term benefits.

Tiberi (1993) reported several OBE after-effects in a study he conducted in Italy. He found that after their OBEs his respondents claimed detachment and serenity about life events (67%), a more serene and detached attitude towards their jobs (57%), more peaceful and harmonious relations with others (54%), more tolerant, amiable and understanding attitudes (44%), less engagement in business (48%), and a decreased interest in wealth (50%). In addition, 63% claimed to have developed belief in life after death after their experiences. Regarding their other beliefs after the OBE, 46% became more interested in religion, 41% felt that their religious beliefs were stronger or had been verified, 57% were affected in their philosophical conceptions about life, and 70% became more interested in knowledge and science.

In a study conducted in Australia in which psychological scales were used, Irwin (1988) found that the OB-experients had higher scores on measures of the acceptance of death and the search for goals in life than those who had not had OBEs. More recently, Brelaz de Castro (1998) found that 40% of the students he surveyed in Brazil said they experienced changes in their lives after their OBEs.

Unfortunately, few researchers have attempted to relate OBE after-effects to other variables. An exception is the Gabbard and Twemlow (1984, p.32) study, which found that those whose OBEs took place in what the experients thought were near-death circumstances reported a higher rate of life changes, and more long-term changes, than those whose OBEs took place in non-near-death circumstances. They also found that OBEs which occurred during periods of calm were significantly and positively related to belief in survival of death.

Tiberi (1993) also attempted to relate OBE after-effects to other variables. He compared OBEs occurring in near-death circumstances to OBEs occurring in non-near-death circumstances. The near-death group reported a significantly higher post-experience percentage of a sense of wisdom, maturity, and balance than the non-near-death group. In addition, Tiberi found some interesting relationships between after-effects and emotions. For example, those who experienced joy during the OBE had a higher frequency of what they felt was an advantage in life because of their newly-acquired knowledge, self-assurance, and happiness than those who did not feel joy. The same was found regarding feelings of serenity, peace and relaxation during the OBE. The experience of love during the OBE was positively related to the observance of moral principles, to feelings of stronger attachment to family, and to an increased interest in religious beliefs after the OBE. These findings suggest that positive mood during the experience is a contributing factor to the production of positive OBE after-effects.

To study the after-effects of the OBE we need to do more than merely note their frequency. It is necessary to study the correlates of these changes, as Gabbard and Twemlow (1984) and Tiberi (1993) have done. That is, we need to start to explore systematically the factors that are related to these changes. Such an approach will eventually allow us to understand more fully the prevalence and variety of the transformations that occur. Eventually we will be in a position to develop empirically a theoretical model that can predict and explain the changes reported after the OBE. In the present study we tried to relate the OBE both to OBE features and to psychological variables. We expected that the complexity of the OBE (measured in terms of the number of features of the experience) would be significantly, and positively, correlated to a measure of change after the OBE. This was inspired, in part, by Greyson's (1992) finding of a significant negative correlation between levels of death threat after an NDE and the frequency of NDE features. It seemed to us that after-effects would be more frequent when the OBE was more complex, because the level of complexity itself would impact on the experient by increasing his or her assessment of the importance and meaning of the experience.

Let us compare, for example, the following two experiences. In the first one, the person felt herself leave her body for a few seconds, saw her body lying down below her, and promptly felt she was coming back into the body. In a second experience, which she felt lasted several minutes, the person thought she traveled to a 'dimension' different from the normal world. She saw a tunnel, lights, and spiritual beings, and heard 'heavenly' music. She also heard voices talking to her before she felt she was coming back to her body. The second experience would probably be more impressive than the first in terms of spirituality, a sense of the possibility of survival of bodily death, and belief in different planes of human existence, among other things. This latter experience might have had its impact because of the sheer number of features, or because of the content of its features. It is one thing to be affected by a high number of features; it is another to be affected by the nature of the features. For example, seeing spiritual entities, hearing voices talking, and entering what looks to the experient to be a 'spiritual' dimension are more suggestive of spirituality and

the like than such features as a sensation of floating. Consequently, the issue becomes not only one of the number of features but of their content. Some of our analyses will explore these differences.

We will also conduct several analyses to explore the potential relationship of the OBE after-effects measure to sex and age and to such psychological variables as absorption and schizotypy. These psychological variables have been found to be related to the prevalence of OBEs (Alvarado & Zingrone, 1997; McCreery & Claridge, 1995), but they have not been studied in relation to after-effects. Because previous OBE studies suggest that after-effects are stronger in near-death circumstances than in other conditions (Gabbard & Twemlow, 1984; Irwin, 1988; Tiberi, 1993), and because there is evidence that the belief that one is close to death may affect the content of the OBE (Alvarado, 2001; Gabbard, Twemlow & Jones, 1981), we will conduct analyses to explore the impact of such a belief during the OBE on the after-effects.

Finally, readers of this report should keep in mind that this research is exploratory. The main purpose of the project was not to study after-effects, but to study OBE features and their interaction with other variables following recommendations outlined by the first author in previous papers (Alvarado, 1984, 1997). The measure of after-effects was included as an afterthought and consequently was shortened as much as possible to fit into the last page of the questionnaire, and is not considered by us to be the best measure possible. Nonetheless, we see our analyses as the beginning of systematic attempts to study factors associated with psychological changes after OBEs that hopefully will be continued with improved methodology and measures.

METHOD

Participants

The participants were 88 persons mainly born in Great Britain (88%). Sixty-two percent were female. Their ages ranged between 20 and 80 with a mean of 51.76 ($N = 86$, $SD = 14.67$). The mean age of the participants at the time of the OBE was 33.12 with a range from 5–78 ($N = 81$, $SD = 14.98$). A religiosity question had a response scale ranging from 0 to 5. The mean obtained was 1.74 ($N = 82$, Range: 0–4; $SD = 1.31$). For some analyses we worked with a subset of 50 participants (see the procedure section). This subset was mainly female (72%), was mainly born in Great Britain (88%), and had a mean age of 52.37 ($N = 49$, Range: 20–78, $SD = 14.78$). Their mean age at the time of the OBE was 34.59 ($N = 46$, Range: 5–69, $SD = 14.26$).

Questionnaires

OBE Questionnaire. The questionnaire had 77 questions and 16 subquestions on the OBE (a copy may be obtained from the first author). The format of the questions included space to write descriptions of specific features of the only, or the most recent, OBE that the person had experienced. These features included visual and auditory perceptions, kinesthetic sensations, and more general aspects such as the frequency of the OBE, whether the OBE was spontaneous or induced, the circumstance of occurrence, the position and activity of the physical body during the experience, and other variables. The first 11 questions covered demographic variables. The first author developed

the questionnaire following case descriptions and previous questionnaire studies (e.g. Alvarado, 1984; Crookall, 1961, 1964, 1978; Gabbard & Twemlow, 1984; Green, 1968; Muldoon & Carrington, 1929, 1951; Osis, 1979; Poynton, 1975). Some questions required 'yes' and 'no' responses, whereas others involved a variety of ranges indicating the magnitude of some variables, such as the duration of the OBE. The dichotomous questions allowed us to sum up the 'yes' answers to create a count of features, which we called the OBE Feature Index. The Feature Index had a theoretical range from 0 to 45. As the other questions used continuous response scales and therefore did not allow clear 'yes' and 'no' answers, they were not included in the computation of the OBE Feature Index.

OBE After-Effect Questions. Several questions at the end of the OBE Questionnaire probed for changes occurring after the OBE with regard to attitudes towards the nature of human beings, society, God and religious beliefs, the significance and purpose of life, the significance and purpose of death, communication and interaction with others, wealth and material possessions, and a free-response alternative to indicate other possible changes. Respondents were asked to check the question if they had experienced a change in the relevant category. This allowed us to calculate a mean index of change, ranging from 0 to 9. The questions, shortened from those used by Palmer (1979), are given in the Appendix.

A second questionnaire consisted of 62 true and false items that included questions about parapsychological, absorption, schizotypal, and lucid dream experiences. The item order was randomized. The questions are available from the first author. The relevant parts of the second questionnaire were as follows.

Parapsychological Experiences. This consisted of questions about four experiences: waking and dream ESP, apparitions and auras. The questions were worded similarly to those used by Palmer (1979). An index of these experiences was formed by assigning a value of 1 to each experience answered as true. The descriptive statistics of this and the other measures appear in Table 1 in the Results section.

Lucid Dreams. This consisted of a single item: "I have had dreams in which I know during the dream that I am dreaming."

Tellegen's Absorption Scale. (Tellegen & Atkinson, 1974; for psychometric information see Roche & McConkey, 1990). This 34-item scale, developed initially to study spontaneous hypnotic-like experiences with the purpose of exploring correlates of hypnotic susceptibility, is supposed to measure the construct of absorption, a "characteristic of the individual that involves an openness to experience emotional and cognitive alterations across a variety of situations" (Roche & McConkey, 1990, p. 92). These include dissociative episodes and experiences of total attentional involvement, among other experiences. There is independent evidence that OBE prevalence is related to absorption (Alvarado & Zingrone, 1997).

Shortened Schizotypal Personality Questionnaire. (STA—Claridge and Brocks, 1984; for additional psychometric information see Jackson and Claridge, 1991). The STA is part of a longer instrument based on DSM-III criteria for Schizotypal Personality Disorder. It includes questions about magical thinking,

and unusual perceptual experiences, among others. We used 13 items of the original 37. Our selection of items was based on Jackson and Claridge's (1991) analyses. The STA in its original length has been significantly, and positively, related to OBE frequency (McCreery & Claridge, 1995).

Shortened Perceptual Aberration Scale. (Chapman, Chapman & Raulin, 1978). This 35-item 'true' and 'false' instrument was formed from body image disturbance experiences reported by schizophrenics. We used 8 items of the original scale. The items were selected using the analyses conducted by previous researchers (Korfine & Lenzenweger, 1995; Lenzenweger & Korfine, 1992). The PAS in its original length was significantly, and positively, related to OBE frequency (McCreery & Claridge, 1995).

PROCEDURE

The first author mailed letters to the correspondence sections of newspapers in Scotland and to different magazines for spiritual and parapsychological topics published in Scotland and England. The call for cases also appeared in two Internet discussion groups for parapsychological topics. The OBE question printed in these different places was: "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 centre of awareness was at a different place than your physical body?" This question was similar to the one developed by Palmer (1979). Most of the respondents sent in postcards or letters describing their experiences. They were mailed the OBE questionnaire with a stamped addressed return envelope and a covering letter promising confidentiality.

Those participants who indicated in the first questionnaire a willingness to answer further questions were mailed the second questionnaire. Only 50 of these returned usable replies.

ANALYSES

The data were entered into the StatPac Gold 4.5 statistical program. The analyses were conducted with non-parametric tests, mainly chi-squares, Spearman Rank-Order correlations, and the Mann-Whitney U. An effect size (es) for the z-value generated by the Mann-Whitney U program was calculated using the following formula: $es = z/\sqrt{N}$ (Rosenthal, 1991, p.19). In this study we did not apply formal corrections for multiple analyses. Consequently our results should be accepted with caution. It is our hope that our findings will be assessed through replication, and not through statistical corrections.

RESULTS

After-Effect Scores and Frequencies

We obtained 88 questionnaires from individuals who claimed to have had OBEs. As can be seen from Table 1, the scores of the measure of change after the OBE had a mean of 2.77. Table 2 shows the frequencies of the after-effects scores. Eighty-one percent of the participants said they had had at least one change after the OBE. Table 3 shows the percentages of the specific changes reported.

Table 1

Descriptive Statistics of the Measures Used in the Study

Measure	N	Range	Mean	SD	Coefficient α
After-effects	88	0-9	2.77	2.44	0.80
Number of OBE features	88	0-25	8.31	5.08	
OBE frequency*	86	1-8	1.91	1.52	
Deliberate OBE	79	0-4	0.24	0.66	
Religiosity	82	0-4	1.74	1.31	
Knowledge about OBE before the experience	41	0-2	0.41	0.66	
Absorption	50	0-34	20.82	7.54	0.91
Shortened STA	48	0-9	4.04	2.41	0.73
Shortened PAS	50	0-8	2.10	2.13	0.80
Index of parapsychological experiences	50	0-4	2.00	1.37	0.68

Note. The actual response ranges for relevant questions are:-

OBE frequency, 1 (once) - 8 (over 100); *Deliberate OBEs*, 0 (never) - 4 (always); *Religiosity*, 0 (not religious at all) - 5 (extremely religious); *Previous knowledge of OBEs*, 0 (nothing) - 2 (a lot).

* This does not refer to the number of OBEs reported. The measure is formed from scores from 1 to 8 assigned to different frequencies of OBEs in order to conduct correlational analyses.

Examples of Descriptions of Changes

The following are examples of descriptions written by the respondents about what they felt the OBE meant to them. These were replies to the 'Other' option of the after-effects questions.

1. Material and wealth mean nothing. Be a good person. Not afraid of death. Appreciate nature.

2. I think the tunnel we go down connects us to the next life. It is a journey we must make alone, like the journey into this world at birth. I felt if I hadn't been pulled back while in the tunnel I'd have entered the light at the end. I am no longer afraid to die. Material wealth and possessions don't matter. You can't take it with you. We won't go until our time has come. We are all precious to God.

3. Possession of a physical body is only a temporary event.

4. It's frightening but amazing. I believe we each have a soul. I also believe

we must be here for a purpose but I don't know what. I'm still unsure whether it's religious—skeptical about this.

5. It rather tended to make you feel there was probably an after-life.

6. I do not believe that we 'die'. I believe that we continue but in another area.

Table 2

Frequency of After-Effects Scores

Scores	N	Percent
0	17	19.3
1	20	22.7
2	9	10.2
3	11	12.5
4	11	12.5
5	8	9.1
6	2	2.3
7	4	4.5
8	5	5.7
9	1	1.1

Table 3

Frequency of Specific Changes After the OBE

Item	N	Percent
Yourself, who you are	74	61
The nature of human beings	74	42
Society	74	15
God, religious beliefs	74	39
Life, its meaning and purpose	74	51
Death, its meaning and purpose	74	51
Communication and interaction with others	74	30
Wealth and material possessions	73	21
Other (miscellaneous)	68	22

Demographic Variables and After-Effect Scores

There were no significant relationships between the after-effect scores and age at the time of answering the questionnaire ($r_s = -0.13$, $N = 86$, $p = 0.22$), nor age at the time of the OBE ($r_s = -0.04$, $N = 81$, $p = 0.74$). There was no significant difference between the after-effect scores of men ($N = 33$, $M = 2.91$, $SD = 2.63$) and women ($N = 54$, $M = 2.74$, $SD = 2.36$, Mann-Whitney $U = 916.50$, $p = 0.82$, $es = 0.02$). However, religiosity scores were significantly and positively related to after-effect scores ($r_s = 0.32$, $N = 82$, $p = 0.004$).

OBE Features and After-Effect Scores

Table 4 shows the correlations between OBE variables measured using continuous response scales and after-effect scores. The best predictor was the OBE Feature Index, followed by quality of thinking during the OBE, deliberate OBEs, and frequency of OBEs.

Table 4

Spearman Rank Order Correlations Between After-Effects Scores and Aspects of the OBE

Aspects of the OBE	N	r_s	p
OBE Feature Index	88	0.44	0.00001 (1-t)
OBE frequency	86	0.22	0.04
Deliberate OBEs	79	0.24	0.03
Duration	67	0.14	0.26
Speed leaving body	79	0.02	0.89
Distance from physical body	77	0.11	0.34
Quality of vision	79	-0.14	0.22
Quality of thinking and mental clarity	82	0.28	0.01
Degree of relaxation	74	-0.11	0.36
Degree of separation	81	0.19	0.10
Speed of movement	61	0.10	0.42
Control of movements	68	0.20	0.10
Sense of solidity	78	0.04	0.76
Sense of time	78	-0.10	0.37
Speed on return	69	0.02	0.84

Notes. Except for the OBE Feature Index, all the analyses are two-tailed. The ranges for each variable were as follows: *Duration*, 1 (1-30 seconds) - 8 (over 3 hours); *Speed leaving body*, 1 (slowly, gradually) - 4 (rapidly, suddenly); *Distance from the physical body*, 1 (less than 1 to 6 inches away) - 8 (other countries/far away); *Quality of vision*, 1 (clear, bright - 3 (confused, foggy); *Quality of thinking and mental clarity*, 1 (worse) - 3 (improved); *Degree of relaxation*, 1 (more relaxed than usual) - 5 (not relaxed at all); *Degree of separation*, 1 (little separation) - 4 (complete separation); *Speed of movement*, 1 (very slowly) - 7 (instantly); *Control of OBE movements*, 0 (not at all) - 3 (always); *Sense of solidity*, 0 (not solid at all) - 6 (more solid than usual); *Sense of time*, 1 (standing still) - 4 (faster than usual); *Speed on return*, 1 (slowly, gradually) - 4 (rapidly, suddenly). The data for OBE frequency and for deliberate OBEs appear in Table 1.

The significant correlations shown in Table 4 were recalculated without the cases which took place when the informant thought that he or she was near death. As can be seen in Table 5, two still reached significance, the correlation with the OBE Feature Index and OBE frequency.

Table 5

Spearman Rank Order Correlations Between After-Effects Scores and Aspects of the OBE (without Near-Death OBEs)

Aspects of the OBE	N	r_s	p (2-t)
OBE Feature Index	59	0.35	0.01
OBE frequency	58	0.26	0.05
Deliberate OBEs	51	0.13	0.35
Quality of thinking and mental clarity	57	0.24	0.07

Table 6 shows contrasts of the after-effects scores in relation to presence and absence of specific OBE features. The table includes only the analyses significant at the 0.01 level. A total of 39 analyses were performed in this section. Those reaching the 1% level, all of which were positively related to the after-effect scores, were: entering into different surroundings, seeing lights, seeing spiritual entities, having feelings of energy, having feelings of all-knowing and understanding, and experiencing a shock to the physical body on return.

Table 6

OBE After-Effects Scores in Relation to Specific OBE Features

Feature	Mean After-Effects Scores				Mann-Whitney U	p (2-t)	es
	Yes	N	No	N			
Different surroundings	4.60	20	2.44	52	262.00	0.001	0.38
Saw lights	4.08	26	2.24	54	367.00	0.001	0.38
Saw spiritual entities	4.64	14	2.34	64	205.50	0.002	0.36
Felt energy	4.08	24	2.30	57	375.00	0.001	0.36
Feeling of all-knowing and understanding	4.48	21	2.39	54	275.50	0.001	0.40
Shock on return	3.88	17	2.28	60	291.50	0.01	0.31

Note. This table includes only the analyses significant at the 1% level.

The analyses listed in Table 6 were recalculated by removing those OBEs in which the informant thought he or she was near death. The results, shown in Table 7, were all statistically significant.

Circumstances of OBE Occurrence and After-Effect Scores

The participants who believed that their OBEs took place while they were close to death obtained a mean after-effect score of 3.18 ($N = 22$, $SD = 1.97$),

while those who did not perceive their experiences to occur close to death obtained a mean of 2.66 ($N = 59$, $SD = 2.50$). The difference was not significant (Mann-Whitney $U = 526.50$, $p = 0.19$, $es = 0.14$).

Table 7

OBE After-Effects Scores in Relation to Specific OBE Features (without near-death OBEs)

Feature	Yes	Mean After-Effects Scores			Mann-Whitney U	p (2-t)	es
		N	No	N			
Different Surroundings	5.22	9	2.36	42	75.50	0.01	0.39
Saw lights	3.86	14	2.26	42	168.50	0.02	0.32
Saw spiritual entities	4.40	8	2.33	45	86.00	0.02	0.32
Felt energy	4.12	17	2.10	39	174.00	0.01	0.38
Feeling of all-knowing and understanding	4.20	10	2.52	42	122.50	0.04	0.28
Shock on return	3.71	14	2.28	40	176.00	0.04	0.28

Table 8 shows comparisons of the frequency of specific after-effects in terms of perceived closeness to death. None of the analyses was significant.

Table 8

Comparison of Frequency of Specific After-Effects in Near-Death and non-Near-Death OBEs

Specific after-effects	ND OBEs ($N = 21$)	Non-ND OBEs ($N = 49$)	χ^2 (1)	p	phi
Yourself, who you are	57%	61%	0.10	0.75	0.04
Your view of human nature	43%	41%	0.03	0.87	0.02
Society	10%	14%	0.30	0.59	0.07
God, your religious beliefs	43%	37%	0.23	0.63	0.06
Life, its meaning and purpose	57%	49%	0.39	0.53	0.07
Death, its meaning and purpose	62%	47%	1.32	0.25	0.14
Communication and interaction with human beings	33%	27%	0.33	0.56	0.07
Material wealth and possessions	23%	18%	0.27	0.60	0.06

We categorized participants according to whether they answered 'yes' or 'no' to the question: "When you had your experience, were you passing through any specific events such as feeling particularly happy or sad about life, feeling sure or uncertain about yourself, dealing with personal gain or personal loss, feeling that life was meaningful or lacking in meaning, or anything else you consider important?" Fifty percent of the respondents answered 'yes' and 50% answered 'no' to the question ($N = 74$). Those who said 'yes' ($N = 37$, $M = 3.43$, $SD = 2.62$) obtained a higher mean after-effect score than those who said 'no' ($N = 37$, $M = 2.16$, $SD = 1.80$). The difference was significant (Mann-Whitney $U = 504.00$, $p = 0.05$, $es = 0.23$).

Another analysis concerned the potential effect of a measure of previous knowledge about OBEs (for descriptive statistics of this measure see Table 1) on the after-effect scores. The results were not significant ($r_s[82] = -0.04$, $p = 0.69$). To control for the effect of OBE frequency (because knowledge of OBEs may come from previous OBEs), we also limited our analysis to those individuals who had had only one OBE. The correlation was not significant ($r_s = 0.07$, $N = 41$, $p = 0.68$).

Psychological Variables and After-Effect Scores

These analyses were conducted with the subset of respondents that returned the second questionnaire ($N = 50$). The mean of the after-effect scores for these 50 participants was 3.08 (Range: 0-9, $SD = 2.26$, coefficient $\alpha = 0.74$). The only significant correlational analyses were those of the index of after-effects with the index of parapsychological experiences ($r_s = 0.29$, $N = 50$, $p = 0.04$) and with Tellegen's Absorption Scale ($r_s = 0.31$, $N = 50$, $p = 0.03$). Non-significant effects were obtained with the schizotypal experiences measures, STA ($r_s = -0.06$, $N = 48$, $p = 0.70$) and PAS ($r_s = 0.13$, $N = 50$, $p = 0.35$).

Out of 49 respondents, 82% claimed to have had lucid dreams. Those with lucid dreams obtained an after-effect mean score of 3.40 ($N = 40$, $SD = 2.31$), as compared with a mean of 1.78 ($N = 9$, $SD = 1.86$) for the non-lucid-dreamers (Mann-Whitney $U = 105.50$, $p = 0.05$, $es = 0.27$). The low number of non-lucid-dreamers dictates caution in the interpretation of this result.

DISCUSSION

Since this study was not originally designed to evaluate after-effects, we must present the following qualifications. It was not a prospective study, so it is possible that responses concerning the after-effects of the OBE will relate not to OBE-related changes, but to changes with other explanations that have been attributed to the OBE because of the context in which the questions were asked. Such a response bias may have inflated the frequency of endorsement of after-effects presented in Table 3. Another potential problem of the questionnaire was that the after-effect questions should have been more detailed, addressing, for example, the nature of the specific changes (e.g. whether they were positive or negative). But regardless of these problems, and of the exploratory nature of the project, we believe our study has produced some useful results, especially in terms of the analyses that have not previously been performed on the features of the OBE.

We found no significant differences between after-effects scores in the near-

death and non-near-death conditions (henceforth ND and NND), although there was a weak trend favoring the ND group. The same may be said of the specific after-effects examined in Table 8. The measure of deliberate OBEs showed a lower correlation when the ND cases were removed (see Table 5). But the rest of the analyses showed slightly lower effect sizes than those obtained in the combined ND/NND analyses in Table 4. In the same way, the analyses reported in Table 7 showed effect sizes similar to those presented in Table 6. While there were reductions in the effect size in the analyses, our impression is that the belief of being near death does not account for the significance. Of course, the analyses used in this study may not have been particularly sensitive to the contribution of the belief of being near death, a problem that could be corrected using higher sample sizes and multivariate techniques. As seen in Table 3, our study shows that our participants said they experienced many changes. However, the overall scores were low (for the whole sample, $M = 2.77$, $SD = 2.44$; for the subsample, $M = 3.08$, $SD = 2.26$), because the actual range of scores ran from 0 to 9. In the present study 81% of respondents said they experienced at least one change. This is consistent with the high percentages of after-effects reported by Gabbard and Twemlow (1984), and by Osis (1979).

Our exploration of correlates of change after the OBE shows that, of the significant analyses, the one which related to the number of OBE features also obtained the highest effect size ($r_s = 0.44$). It is logical that there would be a positive and significant relationship between the number of OBE features and the after-effect scores. If someone remembers an OBE as a complex and dramatic experience, it is reasonable to expect this to have more impact than a simpler experience with a low number of features. In our attempt to explore whether the more transcendental or 'supernaturalistic' features (e.g. seeing spiritual entities) were associated with higher rates of after-effect scores than the more mundane ones (e.g. seeing the physical body), we ran the OBE features used in the feature index through factor and cluster analysis to see if we could classify them empirically into two different groups. Unfortunately the program could not perform either analysis on account of the high ratio of features to cases in the data set. Our analyses of the particular OBE features in relation to the after-effect scores that obtained the highest effect sizes suggest that many of the features may be considered to be transcendental in the sense of being suggestive of other realms or realities (see Table 6). The features in question were: entering into different surroundings ($es = 0.38$), seeing lights ($es = 0.38$), seeing spiritual entities ($es = 0.36$), having feelings of energy ($es = 0.36$), and having feelings of all-knowing and understanding ($es = 0.40$). However, our analyses are only slightly suggestive of the importance of these particular features. Further analyses could be performed with factor or cluster analysis once a larger set of OBE cases can be obtained.

The impact of particular features may not depend on their 'other-worldly' aspect, as in seeing spiritual entities, passing through tunnels or hearing voices. Perhaps the impact of some features is more a function of breaking with the usual, of showing that daily physical aspects of reality can be transcended. For this we do not necessarily need features suggestive of different realities. Something unusual, such as seeing the physical body, or seeing or passing

through objects, can also have a strong impact without carrying eschatological implications. Perhaps this is why those who felt a shock to their physical body at the end of the experience obtained higher after-effect scores than did those who did not experience a shock (see Table 6). A shock does not suggest the existence of different realities or dimensions but may reinforce the belief of being actually 'out-of-the-body' in the sense that 'something' coming back 'entered the body' at the end of the experience. Consequently, the issue may be more complex than previously discussed.

Regardless of whether the influential aspect is the glimpse of some 'final' reality (the 'other world' element), or merely the dramatic component (something that it may not be possible to separate out), it is important to include in our studies OBEs with a wide variety of features. They should range from experiences with few and less dramatic features, to experiences with many elements, including dramatic or impressive features. It could well be misleading to pay attention only to those OBEs with many features, or only to the OBEs of individuals who have had many experiences, such as the experiences popularized in the autobiographical literature (e.g. Muldoon & Carrington, 1929; for an OBE during an NDE see Eadie, with Taylor, 1994). The present study, and a different one (Alvarado & Zingrone, 1999), show that the average number of OBE features per experience is actually quite low. But the accounts of special individuals, or of individuals who have had many experiences, seem to be much higher in the number of features. In other words, the experiences reported in most autobiographies are not representative of OBEs in general, and this fact should be considered when assessing after-effects.

We also found low but significant positive correlations between the after-effect scores and the measures of OBE frequency ($r_s = 0.22$), and deliberate OBEs ($r_s = 0.24$). These correlations may be related to the impact of repeated exposure to OBEs. The more exposure one has to OBEs the more one changes. This suggests that changes or after-effects are not static one-time occurrences, but part of a process that takes time, and that can be affected by such variables as repeated exposure to the experience of finding oneself outside of the physical body.

Other interesting positive correlations were found between the after-effect scores and ratings of quality of thinking during the OBE ($r_s = 0.28$), and passing through a special emotional or life situation when the person had the OBE ($r_s = 0.23$). We did not analyze this result further because the descriptions associated with positive replies were very general and difficult to classify. However, most of the replies referred to such positive things as happiness, and to such negative ones as sadness and personal problems. The question about clarity of thinking may be related to positive mood during the experience, suggesting that this emotion may affect the after-effect scores. Perhaps positive emotions during the experience cause positive after-effects because the person remembers the OBE as a pleasant experience. This is consistent with Tiberi's (1993) findings described in the introduction to this paper. The life situation question suggests that emotions, or existential concerns, may be related to after-effects. The OBE may be a resource the person may use to ameliorate his or her life situation if it occurs in a negative context, or to react to overwhelming positive emotions in other contexts.

The correlation with religiosity ($r_s = 0.32$) is interesting but difficult to explain. It may be considered that a high degree of religiosity determines the reaction of a person to his or her OBE. For example, it is possible that the individual already has predispositions for interpreting an experience such as the OBE in religious or metaphysical terms. Or perhaps the OBE influences religiosity so that individuals with higher change scores may become more religious due to their interpretation of the experience. How to determine which is the case is part and parcel of the ambiguities of correlational research. In addition, the measure of religiosity refers to the respondent's religiosity at the time of answering the questionnaire, not at the time of the OBE.

Like the correlation with religiosity, the significant correlation between after-effects and absorption ($r_s = 0.31$) may have different interpretations. Perhaps the potential for absorption experiences has changed as a result of the OBE. On the other hand, and assuming the correctness of Irwin's (1985) OBE model in which absorption is seen as a cognitive skill of basic importance in the production of the initial OB sensation and of other OBE features, perhaps an openness or vulnerability to behavioral changes is related to or caused by high absorption functioning.

Finally, the positive correlation of after-effect scores with psi experiences ($r_s = 0.29$) is consistent with previous findings which suggest that those who have OBEs also have a variety of psi experiences such as waking and dream ESP, among others (e.g. Alvarado & Zingrone, 1999; Alvarado, Zingrone & Dalton, 1998-99; Blackmore, 1984; Palmer, 1979), and with the results of studies that suggest that the frequency of psi experiences increases after an NDE (e.g. Atwater, 1988; Greyson & Stevenson, 1980; Ring, 1984; Sutherland, 1995). However, our findings do not allow us to conceptualize psi experiences as after-effects of OBEs. It is possible that such experiences preceded or co-existed with the OBE.

Future research could improve the way after-effects of the OBE are measured, by using standardized instruments which test attitudes towards death and other existential issues (see, for example, the instruments used by Greyson, 1992 in an NDE study and by Irwin, 1988 in an OBE study). Such measurements could also be taken from a control group of individuals with matched demographics who have not had an OBE. In this way we may assess better whether the OBE was important for the reported after-effects. In addition, the assessment of OBE after-effects could take place not only by using information obtained from the participant, but also from information obtained from independent sources, such as from individuals in the experient's social circle (spouse, offspring, siblings, and close friends).

The study of the after-effects of OBEs (and of other exceptional experiences) is in its infancy. We still know very little of either the short- or long-term effects of an OBE. Why are some individuals not affected, or only slightly affected, when others are affected to a dramatic degree? Could there be genetic predispositions or cognitive processes (e.g. hypnotic susceptibility, dissociation, or absorption potential), or life experiences (e.g. positive and negative childhood experiences, trauma in later life) that affect the way the experience was triggered and later interpreted? One possibility for further research is to explore causal models in which childhood experiences (positive

and negative) are factors that contribute to the development of our potential for absorption, dissociation, or hypnotic susceptibility, and which, in turn (and possibly interacting with experiences occurring later in life as well), have predisposed the individual to be open both to such experiences as OBEs and to higher rates of after-effects.

Are there differences in the way after-effects of an OBE are assimilated, so that some go forward in different ways and others develop only slightly or in such a way as to suggest that in some individuals the process of transformation is arrested or dwarfed, as Sutherland's (1995) study of the effects of near-death experiences suggests? Maybe the family environment is relevant, in that individuals that have the OBE in a context of disbelief, or of devaluing exceptional experiences, experience more integration problems than those who are in supportive environments (e.g. a family used to psi experiences, or one engaged in spiritualist or in New Age practices). Such variables as these may help us to account for the different degrees of change found in our study participants.

There is no doubt that more research is needed before we can reach an understanding of the transformation potential of OBEs. These studies have many clinical implications, among them the relationship of the after-effects to changes induced through psychotherapy, and the need to counsel and assist persons affected by OBEs so they may both integrate their experiences into their lives, and explore the meaning of their experiences in terms of their own goals and life context. It would be useful to remember here that some people may experience negative after-effects, and that such negative reactions may develop into conditions similar to post-traumatic stress disorder.

We hope that our results will be followed up by other researchers. But in continuing this line of research we should be aware that the quantitative and atomistic level of analysis used in this study is not the only way to proceed.

For example, assuming the process of change after an OBE takes time to be assimilated, and is not an instantaneous process which occurs when the experience ends, studies such as ours tell us nothing about how the participants have dealt with integrating their experiences over the course of time nor at what stage of integration they may have been at the moment of completing the questionnaire. Future studies may try to consider these issues, but such problems remind us that in studying human lives it is essential to deal in depth with biographical narratives, following methods developed by sociologists and other social scientists (Denzin, 1989). These case studies would allow us to study potential changes in the context of an individual's life, something difficult to do using more traditional quantitative analyses such as the ones presented in this paper. Sutherland's (1995) study of the types of change experienced after near-death experiences, as well as the case studies presented by Gabbard and Twemlow (1984) and P. R. White (1997), are examples of this approach. Atwater's (1988) study is a particularly useful examination of NDEs, which uses the autobiographical approach and interviews with other experiencers to show the difficulties encountered in the process of integrating NDEs into one's life. Future work could also test Brown's (1997a, 1997b, 2000) and R. A. White's (1997a) model of integration of exceptional human experiences. These views draw our attention not only to an exceptional or anomalous experience and its effects, but to the possibilities and problems an individual encounters

in conceptualizing, integrating, and developing the meaning of the experience in order to understand it and to live all its transformative aspects. This 'Exceptional Human Experience Process' (EHE Process), to use Rhea White's (1997a) term, involves five stages. In this model the person (1) has the initial experience (encountering something unexplained that clearly has great transformative potential); (2) seeks to cope with the initial experience (looking for new ideas and people with similar experiences); (3) finds herself or himself 'between worlds' (trying to balance the old way of thinking and newly acquired perspectives); (4) finds him- or herself living out a 'new' way of seeing the world (finding it easier to act on what was learned through experience in the initial event); and (5) finds a new way to think and experience the world (in which he or she not only accepts and becomes comfortable with the new outlook, but so integrates this into life that new habits and/or a sense of having a 'calling' arises (such as the practice of meditation, or the need to provide service to others). Structuring future studies to test this model would help us tap into the transformation process as it occurs in the context of the experiencers' lives. One first step, of course, would be to validate the EHE Process empirically by studying the lives of different individuals who have had OBEs. It should be possible to conduct in-depth biographical studies similar in scope to the best published NDE autobiographies (Atwater, 1988; Harris with Bascom, 1990), but to do so using the outlines of the EHE process (Brown, 1997a, 1997b, 2000; White, 1997a) as an organizing theoretical principle. At this point we suggest that, although the integration of the experience is probably shaped by later life developments, such aspects as the complexity of the OBE and the individual's potential for dissociation or absorption may be related to specific patterns that emerge from the stages in the EHE Process.

We hope that qualitative biographical studies will be combined with statistical approaches—such as our study—in order to bring the study of the after-effects of these experiences into parapsychology, in the same way that psychologists and psychiatrists currently study the effects of such experiences as physical trauma and bereavement. This will not only enrich parapsychology, but will help the field contribute more effectively to the concerns of clinicians, and, more importantly, to the existential questions that face us as human beings.

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REFERENCES

- Adler, O. N. (1996) Experiences from my lifelong journal. *Exceptional Human Experience* 14, 154-185.
- Alvarado, C. S. (1984) Phenomenological aspects of out-of-body experiences: a report of three studies. *JASPR* 78, 219-240.
- Alvarado, C. S. (1997) Mapping the characteristics of out-of-body experiences. *JASPR* 91, 15-32.
- Alvarado, C. S. (2001) Features of out-of-body experiences in relation to perceived closeness to death. *Journal of Nervous and Mental Disease* 189, 331-332.
- Alvarado, C. S. and Zingrone, N. L. (1997) Relación entre la experiencia fuera del cuerpo y la absorción: estudios con participantes puertorriqueños y norteamericanos. *Revista Argentina de Psicología Paranormal* 8, 249-261.
- Alvarado, C. S. and Zingrone, N. L. (1999) Out-of-body experiences among readers of a Spanish New Age magazine. *JSPR* 63, 65-85.
- Alvarado, C. S., Zingrone, N. L. and Dalton, K. S. (1998-99) Out-of-body experiences, alterations of consciousness and the Five-Factor Model of personality. *Imagination, Cognition and Personality* 18, 297-317.
- Aron, A., Paris, M. and Aron, E. N. (1995) Falling in love: prospective studies of self-concept change. *Journal of Personality and Social Psychology* 69, 1102-1112.
- Atwater, P. M. H. (1988) *Coming Back to Life: The After-Effects of the Near-Death Experience*. New York: Dodd, Mead.
- Blackmore, S. J. (1984) A postal survey of OBEs and other experiences. *JSPR* 52, 225-244.
- Bozzano, E. (1937) *Les Phénomènes de Bilocation*. Paris: Jean Meyer. [First published in Italian, 1934]
- Brelaz de Castro, J. F. (1998) Experiencias fuera del cuerpo: una encuesta sobre estudiantes universitarios en Brasil. *Revista Argentina de Psicología Paranormal* 9, 11-27.
- Brown, S. V. (1997a) The EHE process: the objective standpoint. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 51-52.
- Brown, S. V. (1997b) Preliminary map of the EHE process. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 92-95.
- Brown, S. V. (2000) The exceptional human experience process: a preliminary model with exploratory map. *IJP* 11, 69-111.
- Brown, S. V. and White, R. A. (1997) Triggers, concomitants, and after-effects of EHEs: an exploratory study. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 150-156.
- Bulkeley, K. (1995) Conversion dreams. *Pastoral Psychology* 44, 3-11.
- Busink, R. and Kuiken, D. (1996) Identifying types of impactful dreams: a replication. *Dreaming: Journal of the Association of the Study of Dreams* 6, 97-119.
- Chapman, L. J., Chapman, J. P. and Raulin, M. L. (1978) Body-image aberration in schizophrenia. *Journal of Abnormal Psychology* 87, 399-407.
- Claridge, G. and Brocks, P. (1984) Schizotypy and hemispheric function: I. Theoretical considerations and the measurement of schizotypy. *Personality and Individual Differences* 5, 633-648.
- Coly, L. and McMahon, J. D. S. (eds.) (1993) *Psi and Clinical Practice*. New York: Parapsychology Foundation.
- Crookall, R. (1961) *The Study and Practice of Astral Projection*. London: Aquarian Press.
- Crookall, R. (1964) *More Astral Projections: Analyses of Case Histories*. London: Aquarian Press.
- Crookall, R. (1978) *What Happens When You Die*. Gerrards Cross: Colin Smythe.

- Denzin, N. K. (1989) *Interpretive Biography (Sage University Paper Series on Qualitative Research Methods, Vol. 17)*. Newbury Park, CA: Sage.
- Dinnage, R. (1991) Psi and religious experience. *JSPR* 57, 355–359.
- Doblin, R. (1991) Pahnke's 'Good Friday experiment': a long-term follow-up and methodological critique. *Journal of Transpersonal Psychology* 23, 1–28.
- Eadie, B. J. with Taylor, C. (1994) *Embraced by the Light*. New York: Bantam.
- Eby, C. (1996) *Astral Odyssey: Exploring Out-of-Body Experiences*. Main Beach, ME: Samuel Weiser.
- Emavardhana, T. and Tori, C. D. (1997) Changes in self-concept, ego defense mechanisms, and religiosity following seven-day Vipassana meditation retreats. *Journal for the Scientific Study of Religion* 36, 194–206.
- Flynn, C. P. (1986) *After the Beyond: Human Transformation and the Near-Death Experience*. Englewood Cliffs, NJ: Prentice-Hall.
- Gabbard, G. O. and Twemlow, S. W. (1984) *With the Eyes of the Mind: An Empirical Analysis of Out-of-Body States*. New York: Praeger Scientific.
- Gabbard, G. O., Twemlow, S. W. and Jones, F. C. (1981) Do near-death experiences occur only near death? *Journal of Nervous and Mental Disease* 169, 374–377.
- Garrett, E. J. (1949) *Adventures in the Supernormal*. New York: Garrett.
- Giovetti, P. (1983) *Viaggi senza Corpo*. Milano: Armenia.
- Green, C. E. (1968) *Out-of-the-Body Experiences*. London: Hamish Hamilton.
- Greyson, B. (1992) Reduced death threat in near-death experiences. *Death Studies* 16, 523–536.
- Greyson, B. and Stevenson, I. (1980) The phenomenology of near-death experiences. *American Journal of Psychiatry* 137, 1193–1196.
- Grosso, M. (1992) *Soulmaker: True Stories from the Far Side of the Psyche*. Norfolk, VA: Hampton Roads.
- Groth-Marnat, G. and Summers, R. (1998) Altered beliefs, attitudes, and behaviors following near-death experiences. *Journal of Humanistic Psychology* 38, 110–125.
- Hanna, F. J. and Ritchie, M. H. (1995) Seeking the active ingredients of psychotherapeutic change: within and outside the context of therapy. *Professional Psychology: Research and Practice* 26, 176–183.
- Harris, B., with Bascom, L. (1990) *Full Circle: The Near-Death Experience and Beyond*. New York: Pocket Books.
- Harvey, J. H. (2002) *Perspectives on Loss and Trauma: Assaults on the Self*. Thousand Oaks, CA: Sage.
- Heatherington, T. F. and Weinberger, J. L. (eds.) (1994) *Can Personality Change?* Washington, DC: American Psychological Association.
- Irwin, H. J. (1985) *Flight of Mind: A Psychological Study of the Out-of-Body Experience*. Metuchen, NJ: Scarecrow Press.
- Irwin, H. J. (1988) Out-of-body experiences and attitudes to life and death. *JASPR* 82, 237–251.
- Jackson, M. and Claridge, G. (1991) Reliability and validity of a psychotic traits questionnaire (STQ). *British Journal of Clinical Psychology* 30, 311–323.
- James, W. (1902) *The Varieties of Religious Experience*. New York: Longmans.
- Kason, Y. and Degler, T. (1996) *A Farther Shore: How Near-Death and Other Extraordinary Experiences Can Change Ordinary Lives*. Toronto: HarperPerennial. [First published in 1994]
- Kennedy, J. E. and Kanthamani, H. (1995a) An exploratory study of the effects of paranormal and spiritual experiences on people's lives and well-being. *JASPR* 89, 249–264.
- Kennedy, J. E. and Kanthamani, H. (1995b) Association between anomalous experiences and artistic creativity and spirituality. *JASPR* 89, 333–343.

- Kennedy, J. E., Kanthamani, H. and Palmer, J. (1994) Psychic and spiritual experiences, health, well-being, and meaning in life. *JP* 58, 353-383.
- Korfine, L. and Lenzenweger, M. F. (1995) The taxonomy of schizotypy: a replication. *Journal of Abnormal Psychology* 104, 26-31.
- Kottler, J. A. (2001) *Making Changes Last*. New York: Brunner-Routledge.
- Lanier, L. S., Privette, G., Vodanovich, S. and Bundrick, C. M. (1996) Peak experiences: lasting consequences and breadth of occurrences among realtors, artists, and a comparison group. *Journal of Social Behavior and Personality* 11, 781-791.
- Lenzenweger, M. F. and Korfine, L. (1992) Confirming the latent structure and base rate of schizotypy: a taxometric analysis. *Journal of Abnormal Psychology* 101, 567-571.
- Lindstrom, T. C. (1995) Experiencing the presence of the dead: Discrepancies in 'the sensing experience' and their psychological concomitants. *Omega: Journal of Death and Dying* 31, 11-21.
- Maslow, A. (1964) *Religion, Values, and Peak Experiences*. Columbus: Ohio State University Press.
- McCreery, C. and Claridge, G. (1995) Out-of-the-body experiences and personality. *JSPR* 60, 129-148.
- Milton, J. (1992) Effects of 'paranormal' experiences on people's lives: an unusual survey of spontaneous cases. *JSPR* 58, 314-323.
- Muldoon, S. J. and Carrington, H. (1929) *The Projection of the Astral Body*. London: Rider.
- Muldoon, S. J. and Carrington, H. (1951) *The Phenomena of Astral Projection*. London: Rider.
- Osis, K. (1979) Insider's view of the OBE: a questionnaire study. *RIP* 1978, 50-52. (Abstract)
- Palmer, G. (1997) Disclosure and assimilation of exceptional human experiences: meaningful, transformative, and spiritual aspects: a research summary. *Exceptional Human Experience, Special Issue: Background Papers II 15 (1)*, 162-163. (Abstract)
- Palmer, J. (1979) A community mail survey of psychic experiences. *JASPR* 73, 221-251.
- Poynton, J. C. (1975) Results of an out-of-the-body survey. In Poynton, J. C. (ed.) *Parapsychology in South Africa*, 109-123. Johannesburg: South African Society for Psychical Research.
- Ring, K. (1984) *Heading Toward Omega: In Search of the Meaning of the Near-death Experience*. New York: William Morrow.
- Roche, S. M. and McConkey, K. M. (1990) Absorption: nature, assessment, and correlates. *Journal of Personality and Social Psychology* 59, 91-101.
- Rosenthal, R. (1991) *Meta-Analytic Procedures for Social Research (revised edition)*. Newbury Park, CA: Sage.
- Ross, M. L. S. (1996) The questioning journey to acknowledged meaning. *Exceptional Human Experience* 14, 187-242.
- Schwaniger, J., Eisenberg, P. R., Schechtman, K. B. and Weiss, A. N. (2002) A prospective analysis of near-death experiences in cardiac arrest patients. *Journal of Near-Death Studies* 20, 215-232.
- Snyder, C. R. and Ingram, R. E. (eds.) (2000) *Handbook of Psychological Change: Psychotherapy Processes and Practices for the 21st Century*. New York: John Wiley.
- Sormanti, M. and August, J. (1997) Parental bereavement: spiritual connections with deceased children. *American Journal of Orthopsychiatry* 67, 460-469.
- Stowell, M. S. (1997) Precognitive dreams: a phenomenological study. Part I. Methodology and sample cases. *JASPR* 91, 163-220.
- Stroebe, M. S., Hansson, R. O., Stroebe, W. and Schut,? (eds.) (2001) *Handbook of Bereavement Research: Consequences, Coping, and Care*. Washington, DC: American Psychological Association.

- Sutherland, C. (1995) *Reborn in the Light: Life After Near-Death Experiences*. New York: Bantam. [First published in 1992]
- Taylor, A. (1998) *Soul Traveler: A Guide to Out-of-Body Experiences and the Wonders Beyond*. New York: Dutton. [First published in 1996]
- Tellegen, A. and Atkinson, G. (1974) Openness to absorbing and self-altering experiences ('absorption'), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology* 83, 268-277.
- Thomas, L. (1997) Late-life effect of early mystical experiences: a cross-cultural comparison. *Journal of Aging Studies* 11, 155-169.
- Tiberi, E. (1993) Extrasomatic emotions. *Journal of Near-Death Studies* 11, 149-170.
- Usha, S. and Pasricha, S. (1989) Claims of paranormal experiences. II. Attitudes toward psychical research and factors associated with psi and psi-related experiences. *NIMHANS Journal* 7, 151-157.
- White, P. R. (1997) The anatomy of a transformation: an analysis of the psychological structure of four near-death experiences. *Journal of Near-Death Studies* 15, 163-185.
- White, R. A. (1997a) The EHE process: the subjective standpoint. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 49-50.
- White, R. A. (1997b) How to write an EHE autobiography. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 81-83.
- White, R. A. (1997c) My EHE odyssey: an ongoing process of formulation. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 137-138.
- White, R. A. (1997d) The spontaneous development of moral consciousness and reverence for all life. *Exceptional Human Experience, Special Issue: Background Papers II* 15 (1), 157-160.
- Wiedman, K. D. and Haraldsson, E. (1980) Some results concerning reported OBEs in Iceland. Unpublished manuscript.
- Zangari, W. and Machado, F. R. (1996) Survey: incidence and social relevance of Brazilian university students' psychic experiences. *EJP* 12, 75-87.

APPENDIX

After-Effect Questions

Has your experience influenced or changed any of your feelings or attitudes towards (CHECK ALL THAT APPLY):-

- Yourself, who you are ?
- Your view of human nature ?
- Society ?
- God, your religious beliefs ?
- Life, its meaning and purpose ?
- Death, its meaning and purpose ?
- Communication and interaction with human beings ?
- Material wealth and possessions ?
- Other ? (please specify)

(COMMENT ON ANYTHING RELATED TO THIS QUESTION)