

I appreciate the opportunity to respond to these questions. Dialogue enriches the research process. I wish Morse good luck in his pursuit of greater empiricism in near-death research.

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OBEs in the Blind

To the Editor:

Harvey J. Irwin (1987) suggested that sensory deprivation may not be the fundamental cause of the out-of-body experience (OBE). The reason he cited is that although sensory bombardment and extreme elation do not entail sensory restriction, they facilitate the OBE. He added that these and other OBE-conducive situations promote "a state of strong absorption in the content of one's experience or mentation" (p. 58) and therefore the process of absorption should be considered central to the occurrence of the OBE.

I would like to point out that I (Krishnan, 1985) have indicated how both sensory bombardment and states of intense positive emotions can lead to a decrease in, and invariance of, sensory (that is, information) input to the brain. The important role that the reticular formation plays in reducing information input in situations of sensory deprivation and sensory overload has been emphasized by Donald B. Lindsley (1961). As far as I can see, the net effect of absorption, which involves withdrawal of attention, deliberately or otherwise, from sensory and proprioceptive stimulation (Irwin, 1980), is a reduction of input of information to the brain.

Secondly, I doubt whether we can say with certainty what is central to the occurrence of the OBE in the present state of our knowledge about the experience. It has been studied in depth only from a psychological perspective; until it is studied as well from other perspectives, such as the neurological or biochemical, I think we should suspend judgment.

I appreciate Irwin's thoughtful comments on my suggestion that study of visual OBEs in congenitally blind persons may help us understand whether or not out-of-body vision has a physical basis. I hope his

comments will stimulate research in this area. For my part, I have so far not been able to find an instance of an OBE in a person born totally blind.

We could perhaps approach this question in another way. We might investigate whether or not the veridical out-of-body vision of those with visual defects is disturbed. If it is impaired, it is obvious that out-of-body vision, when it is veridical, does not operate independently of the visual system, and from the kinds of defects that affect out-of-body sight we might gain an idea of the anatomical structures involved in it.

It is not possible to resolve this issue conclusively on the basis of published cases of out-of-body sight in people with a visual disability (e.g., Davis-Cambridge, 1976; Green, 1968, pp. 32-33; Irwin, 1987, Case 3; Ring, 1981, p. 38, footnote). Those cases have not been corroborated independently, and it therefore can be argued that their visual content was hallucinatory. The experience of Juanita Davis-Cambridge (1976), who became blind owing to a hemorrhage into the vitreous humor of her eyes, is nevertheless of interest. She had her OBE unexpectedly in the early hours of the morning and, unlike the respondents of Celia Green (1968) and Kenneth Ring (1981), who claimed clear out-of-body vision despite their weak eyesight, Davis-Cambridge could see herself and her friend lying beside her only as shadowy forms. Was the lack of clarity due to her disability or her room being in darkness? Or was it simply an exceptional case?

Claims of out-of-body vision that have been systematically verified and found veridical (e.g., Sabom, 1982; Clark, 1984) also do not help, as the investigators have not provided any information about the eyesight of the subjects. I would suggest that in future investigations, data on the eyesight of experiencers should be routinely elicited.

I take this opportunity to draw attention to some other aspects of out-of-body vision about which there is also little or no information in the literature. If we fill in these gaps, we may perhaps be able to advance our understanding of this phenomenon.

1. According to many OBErs, they saw their physical bodies and/or surroundings suddenly from a position above the plane of the body. Some experiencers have, however, felt a sensation of falling slowly below the level of the body and then rising above it (Green, 1968, p. 46; Moody, 1977, pp. 33-36). Those experiencers report that, as they were moving up above the body, they could see below them, but it is unclear whether the impression of descending below the plane of the body is accompanied by any visual experience. One subject experienced tac-

tile bodily sensations as he felt that he was crawling on the floor, but had no visual sensations (Greene, personal communication, 1985). This aspect of the OBE requires investigation because if, as a rule, subjects have no visual experience while they seem to be below the body, then an elevated perspective is in some way connected with the mechanism underlying out-of-body vision.

The reason why the vantage point appears to be located above body level has yet to be elucidated, though a number of writers have offered speculations (Blackmore, 1983a, p. 150; Greene, 1983; Irwin, 1985, pp. 130-131; Jung, 1969, p. 509). We may also note that Georg von Bekesy (1967, pp. 127-129) has cited a somewhat similar experience in the auditory modality. He wrote of a person who listened to radio music wearing earphones and always heard the music in back of his head. Over a two-hour session, he showed the man how he could localize the music in front of him or behind him, as he pleased. Bekesy observed that when a person wears well-matched earphones on both ears "the acoustical situation provides a free choice of localizing the imaged sound source in front, within the head, or behind. The determining condition will probably be some early experience relative to the situation."

2. It appears from some accounts of multiple OBEs that although the localization of the vantage point may be peculiar to each experiencer, it is invariant for him or her over several episodes. For example, one of Green's respondents said that she had between 20 and 30 OBEs in the course of five years, and on each occasion she felt that she had seen herself from behind her right shoulder as she worked at her typewriter (Green, 1968, pp. 26-27). Another respondent felt that the viewpoint was always in the far right-hand corner of the ceiling of her room (p. 57). One of Michael Sabom's interviewees observed that in each of his four OBEs he underwent over a ten-year period, his vantage point was from the upper left (Sabom, 1982, pp. 72 & 121).

It is difficult to judge from the literature whether an invariance of spatial relationship between physical body and vantage point is a common feature of multiple OBEs, as the subjects have not been asked specifically about it; the observations cited above were made voluntarily. If future research

reveals that that invariance is a consistent feature, we need to explore what that signifies.

3. A few OBErs have said that they saw the physical body as a mirror image. As Irwin pointed out (1985, pp. 90–93), it is unclear whether the experiencers used the term “mirror image” as a metaphor for “identical replica” or whether they meant that the body looked laterally reversed. His conclusion, based on the scant data available on this feature, was that the subjects most likely perceived the body without right-left reversal. But then, in the experimental situation, the OBE adepts Stuart Blue Harary (Rogo, 1978, p. 185, footnote) and Ingo Swann (Mitchell, 1987, p. 72) have on occasion exhibited mirror vision with respect to some of the targets they identified. The possibility of lateral reversal cannot therefore be ruled out.

Some questions arise in this connection. Why is it that lateral reversal occurs only at times? What is the reason for mirror vision? Neither Harary nor Swann seem to have seen their physical bodies in mirror image. Does that mean that only elements other than the physical body are seen in that way? Fresh data need to be collected and examined to find answers to these questions. In attempting to account for mirror vision, we may keep in mind the finding from animal experiments that lateral reversal is a characteristic of transfer of visual information from one brain hemisphere to the other (Noble, 1966).

4. There is no indication in OBE accounts of experiencers making mistakes in the perception of the physical body. The deviations from actuality that are sometimes reported pertain to the subjects’ physical surroundings or their self-image, or parasomatic form. For example, some OBErs have seen in the physical environment objects that were not actually there. But there does not seem to be an instance of an experiencer having made such errors of commission in viewing the body, such as seeing it in clothing that he or she was not wearing at the time of the OBE. If the physical body observed by the OBEr is of subjective origin, as several writers have suggested (Blackmore, 1983b; Irwin, 1985; Siegel, 1980), is it not likely that departure from reality in some detail or other will sometimes occur? I would suggest investigating the accuracy of out-of-body vision of the body itself.

5. The target detection experiments conducted in the past by inducing OBEs in experimental subjects were designed to investigate whether they could identify target objects located away from their immediate vicinity. Those subjects have not been very successful at identifying distant targets (Blackmore, 1983, Chapter 18; Irwin, 1985, pp. 53-73), but did they see their physical surroundings as, for instance, many OBErs interviewed by Sabom did? There is hardly any information in this regard in the experimental reports. I think experimental subjects should be tested for their near perception as well, with target materials kept near them but out of their visual fields. If they score positively on both tests, we can compare their near and distant out-of-body vision in respect to accuracy, clarity of vision, number of details observed, etc. That may provide a basis for considering whether perception of near and remote objects is mediated by the same mechanism.

We may also study comparatively the near and far out-of-body vision of those who report moving to a distant physical location after witnessing events near their bodies, provided their remote perceptions can be corroborated. Kimberly Clark (1984) verified the distant perception of a cardiac arrest patient and found it to be veridical, but she does not appear to have checked the patient's near out-of-body vision.

6. Out-of-body vision arising during electrical stimulation of certain areas of the brain has not been studied to determine whether subjects see anything outside of their visual field. This omission should be repaired.

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H. J. Irwin Responds

To the Editor:

V. Krishnan's letter contains a number of interesting observations but I will focus here on comments pertaining directly to my own research.

It would appear that Krishnan and I basically are in agreement on the course of sensory information processing during an OBE. A minor

misunderstanding evidently has arisen from our different interpretations of the term "sensory deprivation." Like other psychologists I take sensory deprivation to entail a circumstance in which stimuli impinging on the individual's sense organs are both minimal and unchanging. It was under that definition of the term that I suggested that sensory deprivation might not be the fundamental cause of the OBE. Krishnan on the other hand wants to include sensory bombardment and extreme elation under the rubric of "sensory deprivation" because these situations also are known to be associated with decreased "input to the brain." What both Krishnan and I are saying here is that the OBE is characterized by an attenuation of sensory information processing by the brain and that this may be due either to the low level of stimuli impinging on the sensory receptors or to inhibition of the flow of sensory information at the level of the reticular system. I have depicted this process in terms of the cognitive construct of absorption (Irwin, 1985), but it is of course equally legitimate to seek to formulate it in a neurophysiological context. The current advantage of the absorption model is that there are hard data on individual differences in both the capacity and the need for absorbed mentation and on the pertinence of these individual differences to the OBE.

For reasons educed in my original paper (Irwin, 1987) I do not believe the perceptual quality of OBEs of people with partial visual deficits will substantially illuminate the nature of the OBE. It is on that ground that visual OBEs in those totally blind from birth are of such theoretical interest. In this regard I would like to acknowledge a letter from Henry W. Pierce (personal communication, February 13, 1988) drawing my attention to an apparent OBE experienced by the totally blind and deaf woman Helen Keller (1972, p. 71). Keller very briefly describes her impression that her "soul" had visited Athens while her body had been sitting quietly in her library. Some researchers might be inclined to argue that this case supports the ecsomatic theory of the OBE, but unfortunately for this view Keller's account does not make any reference to *visual* sensations during her experience. The case therefore can be accommodated also by some form of imaginal theory, particularly one that takes cognizance of kinesthetic and somaesthetic imagery (Irwin, 1985).

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