

Near-Death Experiences: Evidence for Survival?¹

V. Krishnan
Tamilnad, India

ABSTRACT

This paper argues that the out-of-body experience (OBE) and other elements of a near-death experience (NDE), as well as the positive affects that accompany them, do not yield conclusive evidence for survival after death. The OBE has features that suggest a physical basis for it, the other elements show the influence of cultural background, and positive affects may simply occur to conserve one's energy and prolong life. Other explanations for near-death elements, such as sensory deprivation, extrasensory perception, and eyeless sight, are addressed.

INTRODUCTION

Various interpretations have been offered for near-death experiences (NDEs) (see Drab [1981] for a brief account). I am concerned here with the view that they hint at survival after death. As I have said elsewhere in a rather piecemeal fashion, I doubt whether such a claim can be made on the basis of the experiences currently cited in support of it (Krishnan, 1978, 1981, 1982). In fact, some of them seem to me to be biological mechanisms that help the experiencer survive. However, I do not hold the view that it is fruitless to look for survival evidence in NDEs or other phenomena. Indeed, there are good reasons for not closing the issue.

Before examining the survivalists' use of the NDE as evidence, let me recall here briefly the NDE's most common elements: an overwhelming feeling of peace and well-being (which serves as an affective background for other experiences, if there are any); an out-of-body experience (OBE); a sensation of floating through darkness or a passage described as a tunnel, etc.; meeting spirits, dead relatives, and religious figures; an encounter with a presence or a brilliant light; a feeling of being in a realm of ethereal beauty; a life review; and a sense of reaching a limit beyond which the experiencer feels that he or she should not go. Upon deciding to return to life or being told to, the experiencer regains consciousness. Very few

*Anabiosis—The Journal for Near-Death
Studies*, Spring 1985, Vol. 5, No. 1
Copyright © 1985 IANDES

experiencers have reported all these elements, and the elements do not occur in any strict sequence.

WEAKNESSES IN THE SURVIVALIST INTERPRETATION

The OBE as Evidence of Survival

The survivalist argument is that the OBE element of an NDE, especially, is strongly suggestive of an afterlife. In this phenomenon the experiencer feels, even though his or her vital signs may be undetectable and eyes closed or covered, that an aspect of himself or herself leaves the physical body and disinterestedly observes it and any events taking place in its vicinity from a position above it. The sense of hearing is often functional as well. According to the survivalist view, this experience means that there is a psychic component in us that can separate from the body, and it is that component that mediates visual and auditory perceptions. Since it seems to function independently of the body, it is conceivable that it may continue to exist even after the disintegration of the body. The other elements of NDEs mentioned above are, in the survivalist interpretation, the experiences of the detached aspect in a postmortem dimension. (Hereafter the near-death elements besides the OBE are together referred to as visionary experiences [VEs] since this term seems to me to be less evaluative than terms like transcendental or hallucinatory experiences.)

The survivalist explanation of the OBE is open to the criticism that whatever veridical information the subject relates after the episode may be based on memories, educated guesses, perceptions made in a semiconscious state, and so on; that is, the NDER visualizes this information in a vivid manner, but does not actually see. Michael Sabom (1982) painstakingly investigated this question. His conclusion was that some of his interviewees could not have reconstructed many of the events they reported from information acquired by normal means; on the contrary, they seemed to see accurately and clearly in some nonordinary way. In my view, it should not be generalized from this finding that all OBEs see accurately, or that all OBEs involve visual experience. At present the term OBE is used to describe almost any experience in which the subject feels that he or she separates from the body and, therefore, there can be varieties or classes of OBEs distinguishable from one another by differences in accuracy of perception, clarity, and so on. For instance, several researchers have noted differences between induced OBEs and single, spontaneous OBEs (e.g., Green, 1968;

Smith and Irwin, 1981). What Sabom's study showed, then, was that there are some OBEs (or a class of OBEs) in which clear and accurate visual perception occurs. In my discussion I have taken into account only this class of experiences.

I suspect that even such cases do not support the survivalist interpretation of the phenomenon. One reason has to do with the position from which the subject says he or she observes. This appears to be nearly always above the level of the body when the experience occurs spontaneously and for the first time. Most of the cases Kenneth Ring and Sabom, for instance, cited are of this kind, and they both noted that the vantage point was above the body (Ring, 1980, p. 46; Sabom, 1982, p. 27). Apparently, judging from accounts where the subject's posture is mentioned, it has no influence on the vantage point. Thus, whether OBEs are walking or sitting (Green, 1968, p. 50), prone (Sabom, 1982, p. 69), or lying on one side (Sabom, 1982, p. 88), it is elevated. It seems that persons falling from a height very rarely have an OBE, but I have come across a survivor of a fall from a coconut tree who felt that he saw himself going down from above his body and the "perceiving self" also moved down with him. As Celia Green (1968, p. 46) noted, subjects very rarely report having viewed their body from a position below it.

Why is the vantage point above the level of the body? If the mediator of out-of-body vision is an element that functions independently of the body, I find no reason why it should position itself only above the body; it seems reasonable to expect instances of observation of oneself from other positions to be no less frequent. For example, in the case of a person undergoing an OBE when sitting or standing or falling from a height, self-observation is possible from the front at eye-level or below it. This is a feature of the OBE that near-death researchers have long overlooked. Carl Jung (1969, pp. 509-511) speculated whether the OBE represented a shift of consciousness from the cerebrum to some other nervous substrate. Recently Gordon Greene (1983) offered an explanation using the hyperspace concept, and Susan Blackmore (1983) suggested that a position above and behind the head might be a convenient place from which to structure imagined places. However, in the light of Georg von Bekesy's (1963, 1967) experiments in another sensory modality, the feeling of observing one's body from a location outside it seems to have a physical basis to it.

Von Bekesy showed that a series of vibrators applied to the forearm will produce a point perception when the phases of vibration are

appropriately adjusted, and when such vibrators are worn on both forearms for some time the point perception suddenly leaps into the space between them; that is, the subject feels that the perception of stimulation is occurring away from the receptor surface. There are some similarities between the experiences of von Bekesy's experimental subjects and OBErs. For instance, many OBErs have said that the change of viewpoint was sudden. Some have observed that they felt they were a point of presence (Green, 1968, p. 36) or a point of consciousness (Moody, 1977, p. 42) in space. Again, a few OBE subjects have reported that their experiences were preceded by a sensation of trembling or vibrating (Moody, 1977, p. 16; Rogo, 1978, p. 17). It is noteworthy that one of the methods of voluntary exteriorization is causing the body to tingle or vibrate (Walker, 1977, pp. 110-111). I imagine that we shall find an answer to the question of an elevated observation point in OBEs when we know how, why, and where in the brain processes similar to those illustrated by von Bekesy occur.

Von Bekesy's experiments also shed light on the feeling, reported by some OBErs, that they were looking down from a great height (e.g., Ring, 1980, pp. 48-49; Sabom, 1982, pp. 27-28) or they were able to move closer to or farther away from the body at will (Sabom, 1982, p. 70). What causes these experiences is an alteration of perspective, and it can happen in the normal state (as distinguished from the out-of-body state). In such cases the vantage point is coincident with the physical eyes, but objects may suddenly appear to be farther away or closer in space than they are. One of the conditions in which this phenomenon occurs is temporal lobe epilepsy. Sometimes it happens even in children in whom no dysfunction has been diagnosed. It has also been found that some individuals have learned to cause their visual field to approach or recede at will (Ferguson, 1975, p. 244). If such changes in perspective happen during an OBE (in which perception of stimulation is projected), the subject will naturally feel that it is he or she who is moving in relation to the visual field (the body and the objects near it).

Another feature of the OBE that strains the separation hypothesis is the similarity of the subject's visual and auditory perceptions to perceptions in these modalities in the ordinary state of consciousness. (These are the two perceptual modalities usually found to be functional in OBErs.) In the ordinary state of consciousness our experience of the environment is limited in the sense that we are not aware of various energy forms such as X-rays, ultrasonics, gamma rays, and so on. It appears that the brain and the senses function as data-

reduction systems (Ornstein, 1975). Now, one would expect that an entity that separates from the body would not suffer from the limitations caused by the senses and the brain. Clearly, OBEs are not free from them, as can be seen from their reports. Their limited experience of the environment could then mean that the visual and auditory processes in the out-of-body state are associated with the body.

Those who suffer from weak eyesight (e.g., Green, 1968, pp. 32-33) and even those who became blind some time after birth (Davis-Cambridge, 1976)² have had OBEs with visual experience. But do congenitally blind persons see in the out-of-body state? It is possible they may have the OBE in the sense of a feeling of leaving the body without visual experience, just as congenitally blind persons may dream without visual experience (Offenkrantz and Wolpert, 1963). I have not come across a reference to a congenitally blind person's OBE in the literature, nor has my letter in *Vital Signs* (Krishnan, 1983) brought one to light. I am beginning to suspect that people born blind may not have out-of-body vision. Should my suspicion prove true, then I think it would be a clear indication that out-of-body vision is associated with the body. It should be noted, however, that if people born blind experience out-of-body vision, it would not automatically strengthen the survivalist interpretation of the OBE, because present knowledge about human vision is incomplete (see below).

Other Near-Death Elements as Evidence of Survival

In the survivalist view the other near-death elements (VEs) are experienced by the detached aspect in a postmortem realm. One argument for their objective reality rests on the fact that they are essentially similar, unlike hallucinations, which usually vary from person to person. Another claim for their reality (Ring, 1980) derives from the holographic theory of brain functioning. Briefly, this theory states that "primary reality" is composed of frequencies only, and our brains, which function holographically, interpret this domain of frequencies in terms of objects (that is, the physical world). According to Ring (1980), there can be other frequency domains. When consciousness leaves the body, at death or as a result of suitable techniques, it becomes capable of being aware of one or other of the frequency realms. Just as the brain translates the primary reality into objects, so also the detached consciousness interprets the other frequency domains in object terms.

Thus the spirit forms, the light phenomenon, the environments of supernal beauty, etc. are all constructions of the disembodied consciousness. They are therefore as real as the objects of our familiar physical world.

The problem with both interpretations of VEs is that they leave unexplained why the experiencers usually describe the imagery in terms of their respective religion or cultural background. As can be seen from Karlis Osis and Erlendur Haraldsson's cross-cultural study of NDEs (1978, pp. 39, 64), Hindus spoke of seeing temples, Yama (god of death), yamadoots (messengers of Yama), and such elements related to their religion, while Christian imagery such as angels, Christ, and pearly gates predominated in the visions of Christians. The interviewees of both Ring (1980) and Sabom (1982), most of whom were from a Christian background, also, in the main, described the postmortem world in terms appropriate to their religion or culture. In the negative experiences collected by Maurice Rawlings (1979), again, his Christian subjects spoke of hell in terms that accord with the Christian conception of it. Ring (1980, pp. 201-202) as well as Osis and Haraldsson (1978, p. 37) suggested that this relationship between religious background and NDE content is a matter of interpretation; although NDErs see a common reality, their description of it is shaped by their respective belief systems. I find this explanation unsatisfactory. Since these authors seemed to accept that NDErs were capable of identifying some of the apparitions they saw as their close relatives or friends (Ring, 1980, p. 68; Osis and Haraldsson, 1978, pp. 184-185), why did they write that the experiencers were unable to describe other images correctly? I think the question of independence of NDE content from religious and cultural background is unsettled. This is also the subject of a recent study of NDEs by an anthropologist (Counts, 1983).

Osis and Haraldsson seemed to adopt a partially representational approach. According to them, the "take-away apparitions" (those that convey they have come to assist the percipient into a post-mortem dimension, or take him "by-force," as in the Indian sample) are not hallucinations but are entities with a will of their own and, therefore, have objective reality, whereas near-death environments are symbolizations pointing to a postmortem world. The former claim rests on their finding that the occurrence of the apparitions was not determined by the percipients' expectations or wishes. They were seen by those who were well on the way to recovery and were not expecting to die. Further, some patients, upon seeing take-away apparitions, expressed their unwillingness to go with them.

Such apparitions, the authors argued, cannot be interpreted as projected wish-fulfillment imagery.

I doubt whether such findings are sufficient reason for ascribing an objective dimension to the apparitions. The fact that most of those patients who saw them died could mean that the apparitions are conscious manifestations of knowledge of impending death at an unconscious level. They would then appear to be unrelated to the percipients' wishes and expectations.

Hallucination of take-away apparitions is but one way in which intimations of the approach of death can occur. They may also come in dreams, even months ahead of the event (Jung, 1969, pp. 410-411), as a hunch that finds expression in the form of leave-taking (Exton-Smith, 1961), as an urge to set one's affairs in order (Grosso, 1981), and so on. The interpretation of such behavior, which may be noticed even in apparently healthy persons, as an indication of a weakening of the will to live is debatable. Many disease processes can exist in a "silent" state in the elderly (Exton-Smith, 1961). That could mean that the victims may have unconscious knowledge of impending death. Alexis Carrel (1948, pp. 102-103) suggested that warnings of death come from the center of visceral consciousness. According to Morton Lieberman, who has studied the psychological behavior of elderly persons, they may perceive approaching death if they allow themselves to be introspective and contemplative (Fiore and Landsburg, 1976, pp. 63-65).

Just as there can be warnings of the approach of death, there can also be intimations of recovery. I think that it is in this light that hearing a voice in an NDE (mentioned previously) and experiencing images such as a border, a temple with closed gates, an unfinished house, etc. are to be understood.

As for Osiris and Haraldsson's (1978) claim that the near-death environments are symbolizations of the hereafter, their reasons for making it are unclear. Since such visions meet the criteria for which they attribute objective reality to take-away apparitions, why are they treated as symbols? It looks as though the variety and close resemblance of the contents of these visions to earthly forms compelled the authors to a representational interpretation.

According to them, the sense of peace and well-being NDEers feel is the result of extrasensory glimpses of the hereafter (Osiris and Haraldsson, 1978, pp. 138-140). That is a questionable claim, since, as I pointed out earlier, it is uncertain whether they see a common reality—a postmortem world. Ring wrote that these positive affects may be due to consciousness being out of the body and therefore

free from body-based sensations (1980, p. 221). But the question of body/consciousness separation is unsettled. That aside, why is it assumed that absence of any input from the body will engender pleasant feelings? Ring (1980) did not give any reason. It is true that a decrease in sensory input can cause pleasant experiences, but, as we shall see later, the reason may not be the detachment of consciousness from the body.

Other Arguments for Survival

In pointing out some of the weaknesses of the current survivalist interpretation of NDEs, it is not my intention to suggest that these phenomena will not yield any survival hints. If there can be flash-forwards about one's earthly life in NDEs (Ring, 1982), might not we also expect pointers to what might happen to us after death?

I prefer to keep the survival question open. The chief reason is the implication of telepathy, to which several writers have drawn attention (e.g., Jung, 1969, pp. 412-414). Although we do not know how telepathy works, on present evidence its existence cannot be denied. It has been found that one of its characteristics is that it is unconstrained by time or space. If that finding is correct, it could mean that at some level of our being we are not subject to spatio-temporal laws. In other words, we have a collective aspect that does not cease to exist when we, as separate individuals, die. To cite an analogy from the Hindu tradition, we, as separate individuals, are like the waves in an ocean; although the waves disappear, the ocean remains. It is in this sense that I understand survival, at least at present.

Can this view account for apparitions, possession, reincarnation, mediumistic communication, and such phenomena that are believed to suggest survival as separate entities? The answer is that it does not preclude such a form of postmortem existence, but it does imply that this mode can only be temporary, since survival in two ways that are both independent of space and time is unlikely. Anyway, I think we should consider whether all the phenomena currently thought to be survival related have equal significance for the afterlife issue. Take, for example, apparitions. There are different kinds of apparitions: crisis apparitions, apparitions that are seen only at a particular place repeating an action over and over again, those that are not localized but seen in different places, those that are witnessed inside a building but disappear after its demolition or major repairs to the interior walls, those that are collectively seen

but appear to be wearing different apparel to different percipients, and so on. What is the reason for these differences? Without accounting for them, can we regard all types of apparitions as being suggestive of survival?

Ian Stevenson (1977, p. 658) found that a person tends to be reborn near where he died. While, as he suggested, this feature of reincarnation-type cases has predictive value, it seems to me that it also means that the source of information about a past life is in some way bound to place of death. Until we know how, why, and to what it is bound, can we conclude with any degree of certainty that this source is a psychic aspect that exists on its own?³

Possession also seems to share this characteristic of reincarnation. To put it simply, we do not hear of, say, a "Japanese spirit" possessing a person who has never had any contact with Japan.

There have been attempts to find out from spirit controls themselves whether they are independent entities. It cannot be said that they have succeeded. Once in a session with Eileen Garrett a psychologist asked her spirit control Uvani what he had been doing since their last session. The question threw Uvani into confusion (Watson, 1979, p. 288). Does this mean that the spirit came into being only during the session? In other words, was it a construction of the medium? Of her own attempt to establish the reality of spirits, Garrett wrote, "I asked these spirit figures if I was seeing them or if I was seeing what was in my own brain. They answered 'both' " (LeShan, 1969, p. 88).

What I am suggesting is that we should not judge the survival issue solely on the basis of those phenomena commonly thought to be afterlife related. In investigating them, questions such as whether they have a common cause or whether they are different ways of experiencing past events should be kept in mind.

OTHER EXPLANATIONS FOR NEAR-DEATH ELEMENTS

I look upon the OBE, VEs, and the sense of peace and well-being experienced by NDErs this way. They are prevalent in man, so they are very likely to serve a purpose. I do not see in the NDEs known at present any hint that their purpose is to give the subjects glimpses of an afterlife; rather, they seem to me to be biological devices with a protective function.

Sensory Deprivation

Studies of humans in conditions of sensory deprivation⁴ show that a sustained level and variety of input of information to the brain is necessary to maintain normal awareness (e.g., Kubzansky and Leiderman, 1961). It appears there are “built-in” mechanisms for this purpose, the most easily recognizable one being the mind’s propensity to “wander.” When there is a decrease in sensory input, perceptual anomalies and so on can occur. It is even conjectured that if all input, both external and internal, could be stopped completely, the brain would cease to function (Watson, 1976, pp. 96-97). Since an organism is a self-regulative system, it is conceivable that the brain attempts to increase input when it falls below the normal level. One of the ways in which the brain may do this is by creating its own input, that is, by hallucinating. Harmon Ephron and Patricia Carrington (1966), for instance, have shown why hallucinations can be considered in this light—as replacement phenomena. In my view, VEs, except for the life review, are of this nature. (The life review appears to be a different order of experience from the other near-death elements in that it is triggered by the suddenness of a threat to life [Noyes and Kletti, 1977; Ring, 1980].) The veridical OBE, in which visual perception in a large measure similar to physical sight occurs, may be another means of providing input.

This interpretation raises many questions. Are the situations in which the OBE and other near-death elements occur marked by sensory deprivation? If they are, why doesn’t everyone who comes near death experience them? How does an OBEr see?

Several investigators have noted that sensory deprivation is one of the situations in which the OBE can happen (e.g., Eastman, 1962; Twemlow, Gabbard, and Jones, 1980; Greyson and Stevenson, 1980; Noyes, 1979). They have not suggested a causal connection, but I think there is a correlation. An indication is the feeling of “time standing still,” which many NDErs have reported. According to Robert Ornstein (1969), for example, periods when the input of sensory information is low will result in less information being processed per unit of clock time than normal, and consequently perceived time will be slow by comparison. When the input of information is fast, perceived time runs fast by comparison with clock time. As some physicists would say, there is no time divorced of events.

As to how sensory deprivation may occur in OBE/NDE contexts, a few illustrative examples follow. During the dying process there can

be sensory deprivation due to progressive deterioration of the sense organs and nervous system and/or environmental isolation. Reduction of information input also takes place during meditation, another context in which the OBE/NDE elements may occur, because the essence of meditation is restriction of awareness to a single, unchanging source of stimulation (Ornstein, 1975). Positive or stressful emotions, when they are overpowering, may trigger the OBE/NDE elements, because in these states "one extremely powerful motive or one strong preoccupation momentarily towers over all other purposes" (White, cited in Shor, 1972); in other words, a narrowing of the stimulus field occurs. Both Margaret Eastman (1962) and Celia Green (1968, p. 29) cited cases of the OBE associated with positive emotions. Hallucinogens interfere with the level of information input, not necessarily by decreasing synaptic transmission through raising the resistance to the passage of electrochemical impulses; they may increase synaptic transmission, thus causing disruption of orderly input of information, and jam the circuits (West, 1975). Procedures that cause sensory overload may also jam the circuits (Miller, 1960) and thus reduce information input.

It is true that everyone who faces a life-threatening situation does not undergo out-of-body or near-death experiences. One reason may be that tolerance for sensory deprivation, like the pain threshold, varies from person to person. Besides, the OBE and NDE may be only two of the many ways in which an individual reacts to sensory deprivation.

Extrasensory Perception

As for accurate perceptions during the OBE, we have seen why the proposal that a detached aspect may be the mediator is unhelpful. An alternative explanation is extrasensory perception (ESP). But two facts about ESP argue against that. One is that an elevated vantage point is not a typical feature of ESP, as it is of out-of-body vision. The other is that visual ESP is seldom, if ever, as clear as out-of-body vision (Rogo, 1978). ESP may, however, be associated with the OBE or other near-death elements, since one of the psi-conducive conditions is sensory deprivation (Honorton, 1978).

Sight Without the Eyes

If neither ESP nor the separation hypothesis can account for

out-of-body vision, how does the subject see? I think we might look for an answer in cerebral mechanics. My reasons for this suggestion, mentioned earlier, are the similarity of out-of-body vision to physical sight, the elevated vantage point, and von Bekesy's (1963) experimental demonstration that perception of tactile stimulation can seem to be occurring outside the body.

A physical basis to out-of-body vision would imply sight without the use of the eyes, since many OBEs have taken place during clinical death. In one of the cases investigated by Sabom (1982, p. 65), the patient, undergoing surgery, was covered from head to foot with several sheets. Still he saw the events near him. Eyeless sight does sound impossible, but I think we should suspend disbelief because our present knowledge about human vision, despite brilliant advances, is by no means complete. For instance, it is still an unsettled question whether humans have more than two visual systems (cortical and tectal) (Furst, 1979, p. 68). For another example, in an attempt to make a vision-substitution system for the blind, it has been found that tactile stimulation can produce images of objects (White, Saunders, Scadden, Bach-Y-Rita, and Collins, 1970). The equipment used translates images of objects, using a TV camera, into a vibratory pattern on the back of the subject. The subject, blind or sighted, can identify the objects with some practice. When the camera is kept fixed, the subject feels the objects to be on his or her back, and when the camera is moved to scan the visual displays, the subject perceives the objects to be in front of him in visual space. Whether such "skin sight" represents a challenge to the doctrine of specific nerve energies is unclear (Furst, 1979, pp. 69-70, 222).

For a third example, sighted children (up to the age of 15 years) can be trained to see without using their eyes or any external aid (Grinberg-Zylberbaum, 1983).⁵ This phenomenon, called extraocular vision, follows the same laws of perspective, contrast, acuity, etc. as retinal vision. In addition, one of the experimental subjects could simultaneously see not only what was in front of her but also what was behind her and at her sides. (This is similar to the 360-degree vision reported by some OBEs.) Some children were able to see inside the body of others and describe the location and dimensions of the scars of bone fractures several years old. Grinberg-Zylberbaum, while offering a psychophysiological explanation for extraocular vision, suggested that the phenomenon may not involve the cerebral structures commonly associated with vision.

Compounding the mystery of vision are the finding that light enters the brains of mammals directly (not only through the visual

system) (Ferguson, 1975, p. 9; Van Brunt, Shepherd, Wall, Ganong, and Clegg, 1964) and speculations about the legendary third eye, the pineal body (Floyd, cited in Talbot, 1981, pp. 56-57).

Emotions as Protection

Most NDErs describe the feeling of their experiences with words like peace, tranquillity, joy, etc. It is noteworthy that these emotions are experienced not only in situations that are patently life threatening, such as an accident; they can also be induced. Down the ages various techniques have been employed for the purpose. Some of them used in India, for example, are hyperventilation alternating with prolonged withholding of breath, constriction of the carotid arteries, obstruction of the larynx by bending the tongue backward, and suspension by the feet for a prolonged period. No matter what the technique employed, it can be seen that the purpose is to restrict the supply of oxygen to the brain. Thus these methods constitute a threat to life. It appears that there is a biological reason why danger to life produces a feeling of peace.

Russian researchers have found from experiments with dogs that were brought to terminal states by bleeding that those animals that were quiet or asleep when they began to die stood a better chance of recovery than those that were in a state of excitement before dying (Watson, 1976, pp. 67-68). The reason is said to be that a calm frame of mind helps to conserve an organism's energy reserves, while excitement and such states deplete them. Lyall Watson (1976) suggested that the beautiful visions and transcendental feelings of a person falling from a great height could then have survival value; they increase the person's chances of recovery from injury or even clinical death. Watson's suggestion could also apply to other life-threatening situations.

Unpleasant experiences in people close to death have also been reported. These may be visions of demonic creatures threatening the subject, "hell," and the like, or the subject may only feel a sense of acute fear or panic. Several investigators found them to be rare (e.g., Greyson and Stevenson, 1980; Lindley, Bryan, and Conley 1981; Moody, 1977a; Osis and Haraldsson, 1978; Ring, 1980; Sabom, 1982), but Rawlings (1979) claimed they might be as frequent as pleasant experiences. Ring (1980) contested that view, pointing out Rawlings's conceptual and methodological weaknesses. In Watson's (1976) hypothesis, however, very few who have negative

experiences are likely to survive, so the incidence of hellish experiences would appear to be small. But if positive affects are a biological device with survival value, as Watson conceived them to be, would the device fail to operate as often as Rawlings suggested? The data on negative experiences are too meager to formulate an explanation. However, a possibility we might consider is whether they are caused by failure or malfunctioning of the mechanisms that create positive experiences. For instance, if endogenous morphine-like substances are the explanation for positive feelings near death, then the presence of certain drugs in the body could block their release (Lindley, Bryan, and Conley, 1981). In multiple NDEs the trend is usually from bad to good experiences (Rawlings, 1979, pp. 100-103; Ring, 1980, p. 249; see Bush, 1983, for exception). Does such a trend mean that self-correction can sometimes occur? Anyway, negative experiences do take place and require further study.

CONCLUSION

I do not even imagine that what I have said about NDEs and survival is the last word on them. Many questions remain to be addressed. The reasons for the different responses to a threat to life (ranging from absence of any NDE to a large number of them, positive or negative) and the factors underlying the various near-death images are some of them. Above all there is the puzzle of out-of-body vision. The experiments of von Bekesy (1963) and Grinberg-Zylberbaum (1983) may help explain some aspects of it, but not all. For example, they do not explain why, if a man is bending over an OBER, the latter sees only the back of the person and not his face. My main object in this article was to point out certain aspects of NDEs that, to my knowledge, have not received much critical attention. In my view, they indicate that there are good grounds for looking for a naturalistic explanation for these phenomena. Some researchers have already made a beginning in this direction (e.g., Carr, 1982; Greyson, 1982; Lindley, Bryan, and Conley, 1981; Noyes, 1979). On the basis of their work I think that a major result of NDE research will be a greater understanding of the various mechanisms the human organism has evolved to overcome a threat to life and to adapt to the situation that arises when survival efforts have to be given up. This knowledge will no doubt have practical applications. Another result, I hope, will be knowledge of how an OBER sees, which may even lead to a means of giving sight to the blind.

NOTES

1. I wish to express my thanks to the Institute of Psychophysical Research, Oxford, England, for lending me several of their publications.
2. I am indebted to Glen O. Gabbard, M.D., The Menninger Foundation, Topeka, Kansas, for this reference.
3. There is an ancient branch of astrology in India known as *nadi* astrology, which can perhaps be used in reincarnation research. The *nadis* are, roughly, ready-made horoscopes constructed for different days of birth along with their readings in a highly condensed form. According to some *nadi* astrologers, some details relating to past lives (such as place and year of birth, names of parents, etc.) are found in some *nadis*. If this is indeed the case, investigation on the basis of *nadi* readings may throw some light on the reincarnation phenomenon. It may not, however, help confirm the belief that it is a psychic factor existing in a free state that reincarnates. (The possible use of *nadi* astrology in reincarnation research was suggested to me by Swami Shaktidhara, Nidagalluhalli, Karnataka, India.)
4. Researchers in the field are not agreed on the use of the term sensory deprivation on the ground that it lacks conceptual and descriptive accuracy. It is used here in the general sense of reduced patterned information input to the brain.
5. I am grateful to F. Gordon Greene for sending me Grinberg-Zylberbaum's paper.

REFERENCES

- Blackmore, S. Are out-of-body experiences evidence for survival? *Anabiosis*, 1983, 3, 137-155.
- Bush, N. E. The near-death experience in children: shades of the prison-house reopening. *Anabiosis*, 1983, 3, 177-193.
- Carr, D. Pathophysiology of stress-induced limbic lobe dysfunction: a hypothesis for NDEs. *Anabiosis*, 1982, 2, 75-89.
- Carrel, A. *Man, the Unknown*. West Drayton, Middlesex, England: Penguin, 1948.
- Counts, D. A. Near-death and out-of-body experiences in a Melanesian society. *Anabiosis*, 1983, 3, 115-135.
- Davis-Cambridge, J. Parapsychology, a perspective on dying? *Suicide and Life-Threatening Behavior*, 1976, 6, 179-188.
- Drab, K. J. Unresolved problems in the study of near-death experi-

- ences: some suggestions for research and theory. *Anabiosis*, 1981, 1, 27-43.
- Eastman, M. Out-of-the-body experiences. *Proceedings of the Society for Psychological Research*, 1962, 53, 187-309.
- Ephron, H. S., and Carrington, P. Rapid eye movement sleep and cortical homeostasis. *Psychological Review*, 1966, 73, 500-526.
- Exton-Smith, A. N. Terminal illness in the aged. *The Lancet*, 1961, 2, 305-308.
- Ferguson, M. *The Brain Revolution*. New York: Bantam, 1975.
- Fiore, C., and Landsburg, A. *Death Encounters*. New York: Bantam, 1976.
- Furst, C. *Origins of the Mind*. Englewood Cliffs, NJ: Prentice-Hall, 1979.
- Green, C. E. *Out-of-the-Body Experiences*. Oxford: Institute of Psychophysical Research, 1968.
- Greene, F. G. Multiple mind/body perspectives and the out-of-body experience. *Anabiosis*, 1983, 3, 39-62.
- Greyson, B. Organic brain dysfunction and near-death experiences. Paper presented at the American Psychiatric Association 135th annual meeting, Toronto, 1982.
- Greyson, B., and Stevenson, I. The phenomenology of near-death experiences. *American Journal of Psychiatry*, 1980, 137, 1193-1196.
- Grinberg-Zylberbaum, J. Extraocular vision. *Psychoenergetics*, 1983, 5, 141-158.
- Grosso, M. Toward an explanation of near-death phenomena. *Anabiosis*, 1981, 1, 3-26.
- Honorton, C. Psi and internal attention states: information retrieval in the ganzfeld. In B. Shapin and L. Coly (Eds.), *Psi and States of Awareness*. New York: Parapsychology Foundation, 1978.
- Jung, C. G. *The Structure and Dynamics of the Psyche*. London: Routledge and Kegan Paul, 1969.
- Krishnan, V. Life after death? *Times of India*, Feb. 12, 1978.
- Krishnan, V. Near-death experiences: reassessment urged. *Parapsychology Review*, 1981, 12 (4), 10-11.
- Krishnan, V. Out-of-the-body vision. *Parapsychology Review*, 1982, 13 (2), 21-22.
- Krishnan, V. OBEs in the congenitally blind. *Vital Signs*, 1983, 3 (3), 13.
- Kubzansky, P. E., and Leiderman, P. H. Sensory deprivation: an overview. In P. Solomon, P. E. Kubzansky, P. H. Leiderman, J. H. Mendelson, R. Trumbull, and D. Wexler (Eds.), *Sensory*

- Deprivation*. Cambridge, MA: Harvard University Press, 1961.
- LeShan, L. *Toward a General Theory of the Paranormal*. New York: Parapsychology Foundation, 1969.
- Lindley, J. H., Bryan, S., and Conley, B. Near-death experiences in a Pacific northwest American population: the Evergreen study. *Anabiosis*, 1981, 1, 104-124.
- Miller, J. G. Information input overload and psychopathology. *American Journal of Psychiatry*, 1960, 116, 695-704.
- Moody, R. A. *Life After Life*. Bombay: India Book House, 1977a.
- Moody, R. A. *Reflections on Life After Life*. New York: Bantam, 1977b.
- Noyes, R. Near-death experiences: their interpretation and significance. In R. Kastenbaum (Ed.), *Between Life and Death*. New York: Springer, 1979.
- Noyes, R., and Kletti, R. Panoramic memory: a response to the threat of death. *Omega*, 1977, 8, 181-194.
- Offenkrantz, W., and Wolpert, E. The detection of dreaming in a congenitally blind subject. *Journal of Nervous and Mental Disease*, 1963, 136, 88-90.
- Ornstein, R. E. *On the Experience of Time*. New York: Penguin, 1969.
- Ornstein, R. E. *The Psychology of Consciousness*. New York: Penquin, 1975.
- Osis, K., and Haraldsson, E. *At the Hour of Death*. Bombay: India Book House, 1978.
- Rawlings, M. *Beyond Death's Door*. New York: Bantam, 1979.
- Ring, K. *Life at Death*. New York: Coward, McCann and Geoghegan, 1980.
- Ring, K. Precognition and prophetic visions in near-death experiences. *Anabiosis*, 1982, 2, 47-74.
- Rogo, D. S. Introduction: analyzing the phenomenon. In D. S. Rogo (Ed.), *Mind Beyond the Body*. New York: Penguin, 1978.
- Sabom, M. *Recollections of Death*. New York: Harper and Row, 1982.
- Shor, R. E. Hypnosis and the concept of generalized reality-orientation. In C. T. Tart (Ed.), *Altered States of Consciousness*. New York: Anchor, 1972.
- Smith, P., and Irwin, H. Out-of-body experiences, needs and the experimental approach: a laboratory study. *Parapsychology Review*, 1981, 12 (3), 1-4.
- Stevenson, I. Reincarnation: field studies and theoretical issues. In B. B. Wolman (Ed.), *Handbook of Parapsychology*. New York:

- Van Nostrand Reinhold, 1977.
- Talbot, M. *Mysticism and the New Physics*. New York: Bantam, 1981.
- Twemlow, S. W., Gabbard, G. O., and Jones, F. C. The out-of-body experience: I. Phenomenology. Paper presented at the 1980 annual meeting of the American Psychiatric Association, San Francisco.
- von Bekesy, G. Interaction of paired sensory stimuli and conduction in peripheral nerves. *Journal of Applied Physiology*, 1963, 18, 1276-1284.
- von Bekesy, G. *Sensory Inhibition*. Princeton: Princeton University Press, 1967.
- Van Brunt, E. E., Shepherd, M. D., Wall, J. R., Ganong, W. F., and Clegg, M. T. Penetration of light into the brain of mammals. *Annals of the New York Academy of Sciences*, 1964, 117, 217-224.
- Walker, B. *Beyond the Body*. London: Routledge and Kegan Paul, 1977.
- Watson, L. *Lifetide*. London: Hodder and Stoughton, 1979.
- Watson, L. *The Romeo Error*. London: Coronet, 1976.
- West, L. J. A clinical and theoretical overview of hallucinatory phenomena. In R. K. Siegel and L. J. West (Eds.), *Hallucinations: Behavior, Experience, and Theory*. New York: Wiley, 1975.
- White, B., Saunders, F. A., Scadden, L., Bach-Y-Rita, P., and Collins, C. C. Seeing with the skin. *Perception and Psychophysics*, 1970, 7, 23-27.

Requests for reprints to:

V. Krishnan
"Ajit"
9/16 Lloyd Road
Cook Town
Bangalore
Karnataka 560 005
India