

ANABIOSIS

The Journal for Near-Death Studies

- The Failure of Saganomics:
Why Birth Models Cannot
Explain Near-Death Phenomena *Carl B. Becker*
- Parapsychological Reflections
on Some Tunnel Experiences *C.T.K. Chari*
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- BOOK REVIEW: Adventures in Immortality:
A Look Beyond the Threshold of Death *Kenneth Ring*

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Anabiosis — "A restoring to life from a death-like condition; resuscitation."

Anabiosis—The Journal for Near-Death Studies is a semi-annual periodical whose principal purpose is to publish articles concerned with near-death experiences and allied phenomena. Although the Journal will consider for publication any worthwhile manuscript from professionals or lay persons, it particularly welcomes submissions from scholars, scientists, researchers, and practitioners whose work is concerned with the study of human consciousness as it is affected by the prospect or occurrence of death. The Journal *will* publish articles dealing directly with near-death experiences as well as with such related phenomena as (1) out-of-body experiences; (2) death-bed visions; (3) experiences of dying persons, or those in contact with them, prior to the onset of death; and (4) experiences of persons following the death of another. The Journal *may* publish articles on other topics or experiences if such articles make a definite contribution to the understanding of the experience and meaning of death (for example, experiences suggestive of reincarnation).

Concerning the *types* of articles the Journal will publish, it specifically encourages submissions in the following categories: (1) research reports; (2) theoretical or conceptual statements; (3) papers expressing a particular scientific, philosophic, religious or historical *perspective* on the study of near-death experiences; (4) cross-cultural studies; (5) individual case histories with instructive unusual features; and (6) personal accounts of near-death experiences or related phenomena.

Finally, the Journal invites contributions from professionals and lay persons, whatever their background or orientation, but particularly from persons in the fields of medicine, nursing, psychology, parapsychology, sociology, philosophy, and religion. The Journal is especially interested in soliciting manuscripts (in English) from persons living outside the United States of America. The Journal as such has no commitment to any particular position on or interpretation of near-death experiences (and related phenomena) and specifically encourages an exchange of a variety of perspectives on these issues.

Manuscripts should be submitted in duplicate, typed and double-spaced on 8½ x 11 paper, to: Bruce Greyson, M.D., Box 54, University Hospital, 1405 E. Ann St., Ann Arbor, MI 48109.

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The Journal for Near-Death Studies

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Editor's Foreword

With this issue, I temporarily assume the duties of editor of *Anabiosis* during Dr. Kenneth Ring's leave. I take this opportunity to thank Dr. Ring for his achievement in establishing *Anabiosis* as a respected forum for scholarly discussion and debate concerning near-death experiences, and to assure readers that in his absence I will endeavor to maintain the high standards of scholarship and style established by Dr. Ring.

I believe that our highest priority at this stage in near-death research should remain the publication of new data and methodological concerns regarding near-death and allied experiences, such as the paper by Drs. Twemlow, Gabbard, and Coyne in this issue. However, we also value and intend to publish theoretical speculations and critiques of theory as a stimulus to new research, such as the articles in this issue by Drs. Chari and Becker. It is equally essential to publish review articles, and those exploring the social and personal implications of this area of study; to this end, the current issue contains Dr. Ring's review of an important new book on near-death experiences and attitudes, and the first in a series of periodical literature reviews by myself. Finally, I believe it is critical to continue to publish descriptive case collections and instructive individual cases, such as Dr. Gallagher's paper in this issue, lest we lose sight of the essentials of the phenomena we presume to study.

As always, we welcome your comments, criticisms, and especially your contributions to keep *Anabiosis* a vital forum.

Bruce Greyson

The Failure of Saganomics: Why Birth Models Cannot Explain Near-Death Phenomena

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ABSTRACT

A number of recent studies have tended to demonstrate that deathbed visions of “figures of light” are found in many cultures, regardless of religious training or conviction. In a widely cited hypothesis, Carl Sagan has proposed that this universality is due to man’s recollections of his birth experiences. This paper brings the findings of psychologists and reasoning of philosophers to bear on this question, refuting Sagan’s theory in three areas. (1) If birth analogies render NDEs meaningless, then they also render meaningless the scientific theories that Sagan finds analogous to birth experiences. (2) Newborn babies cannot perceive nor remember well enough to form images of the sort perceived at deathbeds (much research is cited to document this claim). (3) The birth experience is not analogous to NDEs, in several important respects. We may conclude that NDEs are not psychological “replays” of our birth experiences; we must look elsewhere for an understanding of their universality. This question, with all of its philosophical ramifications, is shown to be emphatically open to contributions of empirical research.

In recent years, the study of the question of survival – the continuity of personal consciousness after death – has become increasingly prominent in both psychological and philosophical journals and conferences. There is a growing acceptance that we may formulate meaningful (i.e. falsifiable) hypotheses about the occurrence and nature of survival, and gain some understanding of its possibilities and difficulties, through empirical studies. Clinical as well as anecdotal studies of near-death experiences have become widely known. Deathbed experiences have been popularly characterized as including the feelings of going through a long tunnel towards a “figure of light” and emerging into heavenly fields. The fact that many people have these sorts of experiences is now too widely established to be questioned, but the origins, meanings, and ontological status of these experiences are still widely debated by philosophers and psychologists. Among the most central questions to be answered here is whether the “objects” of these experiences are in any sense “real,” or whether they should better be regarded as purely nonreferential hallucinations lacking both veridicality and meaning.

The earliest of the attacks against the veridicality of near-death experiences (NDEs) was the allegation that NDEs simply reflect the religious beliefs of the people who experience them. Empirical studies have refuted this claim from several standpoints. Agnostics and atheists have had visions of “heaven” or religious figures, while devout churchgoers expecting judgment or purgatory found none (Ring, 1980). The cultural expectations that (a) there is no life after death, or (b) pain is as likely as pleasure in the next world (especially for sinners or non-believers) were simply not reflected in NDEs either (Ring, 1980). So NDEs cannot be written off as mere projections of one’s beliefs, desires, or cultural training. The cross-cultural uniformity among Christians, Jews, and Hindus also seems to indicate that more than a cultural image is being seen here; there are elements of broad similarity among many near-death experiencers (Kalish, 1979).

Astronomer Carl Sagan, famous for his studies of Venus, believes that he has the solution to this universality of NDEs. He asserts that the death experience is likely to produce common images of light and tunnels because we have all been through tunnels into light before — at birth. This leaves an indelible imprint on our brains that is replayed during the traumatic moments when we face death. In Sagan’s words:

The only alternative, so far as I can see, is that every human being, without exception, has already shared an experience like that of those travelers who return from the land of death: the sensation of flight; the emergence from darkness into light; an experience in which, at least sometimes, a heroic figure can be dimly perceived, bathed in radiance and glory. There is only one common experience that matches this description. It is called birth (1979, p. 304).

Sagan goes on to reduce all religion and speculative science to an analogue of the birth experience. He sees the *satori* or *nirvana* of Eastern religions as no more than a desire for a return to the warm, selfless, undifferentiated state inside the womb. He asks whether “Western fascination with punishment and redemption [might not] be a poignant attempt to make sense of perinatal Stage 2.” In Sagan’s summary:

If religions are fundamentally silly, why is it that so many people believe in them? . . . The common thread is birth. Religion is fundamentally mystical, the gods inscrutable, the tenets appealing but unsound because, I suggest, blurred perceptions and vague premonitions are the best that the newborn infant can manage. It is rather a courageous if flawed attempt to make contact with the earliest and most profound experience of our lives (1979, p. 309).

Finally Sagan goes on to analogize scientific theories about the universe to the birth experience: steady state theories are analogous to the womb state; oscillating universe theories are analogous to the uterine contraction state; the Big Bang theories are analogous to birth into an ever-widening world. He concludes that our "perinatal" experiences may determine not only our NDEs but our psychiatric predispositions to scientific cosmologies (Sagan, 1979).

A number of things need to be said about Sagan's theory, since it appears superficially seductive and is couched in striking language in a best-selling book. It is trivially true that everything is either in a steady state, shrinking, or growing; thus, everything can be analogized to uterine states, contractions, and birth. But this does not mean that there is any real connection between uterine states and whatever is analogized to them. Sagan shows gross naïveté in equating cosmological and psychological models, and then attempting to reduce them both to analogies of the birth experience. Apparently the only source for his flights of analogistic imagination is the work of Stanislav Grof, who found some analogies among mystic, drug, and NDE consciousnesses, particularly in their "vision of light" (1975). Grof, while seeking causal explanations for NDEs within brain functions, is careful not to reduce NDEs to nonreferential hallucinations. On the contrary, he leaves open the possibility that changes in brain chemistry set up altered states of consciousness that give access to alternate realities not recognized in our ordinary waking states of mind (cf. Ring, 1980). Grof allows that NDEs and other altered states of consciousness may show us something about other realities, but Sagan crudely reduces all such visions to foggy-headed attempts to remember our own births. This reduction is invalid for three reasons:

(1) There is a further consequence of Sagan's theory, which even he would reject. Sagan says that since NDEs are analogous to the birth experience, they can be reduced to memories of birth, and therefore have no independent [ontologically real] referents. He also says that the universe studied by astronomers is analogous to the birth experience, and that the Big Bang theory he accepts may be a superimposition of our birth memories on our views of the universe. But if such analogies make NDEs non-referential, they should render his Big Bang theories equally non-referential. If they make NDEs into meaningless delusions, then they should also make the Big Bang theory a meaningless delusion. By Sagan's own line of reasoning, science is not finding the truth about the universe, nor do laws of science refer to anything but projections of the birth experiences of the leading scientists. Sagan almost admits this himself when he says:

I suppose it is too much to hope that the originators of the Steady State hypothesis were born by Caesarean section. But the analogies are very close (1979, p. 313).

He tries to find psychological origins for all of his opponents' theories without realizing that the same criticisms must apply to himself, if true. If his theory is true, all the highly touted objectivity of science and scientists is a myth, reducible to the manner of their births and the predilections born thereof.

(2) More scientifically, infants simply cannot perceive anything well enough for Sagan's theory to hold true. The key point in Sagan's analogy between birth and NDEs is that both include the vision of "some godlike figure surrounded by a halo of light — the Midwife or the Obstetrician or the Father" (1979, p. 306). But if newborn infants do not perceive such figures of light, then it is impossible to ascribe NDEs to such infantile perceptions. To examine this claim, we need to turn to the results of extensive studies of infant perception and memory. The limitations on infant perception are indeed substantial, for at birth, many neurons are not in their proper layers, and there are no Nissl bodies or neurofibrils, little chromophil or myelin, and macula are still underdeveloped (Maurer, 1975). Studies have demonstrated visual limitations in numerous areas:

(a) Newborns cannot see in the sense of distinguishing figures in any significant degree (Rugh and Shettles, 1971). Even infants a month old show no response to a difference of less than a 70 percent contrast between dark and light (Braddock and Atkinson, 1979). They cannot focus nor fixate, and when they attempt to do so, they take in only a very small fragment of a total image for only a very short time (Dayton, Jones, Aiu, *et al*, 1964; Dayton, Jones, Steele, *et al*, 1964). They cannot distinguish patterns from backgrounds (Hochberg, 1968, 1970), nor can they recognize features or figures at all (Salapatek, 1968). Half of all newborns cannot coordinate their vision at all on objects an arm's length away; no infants as much as a month old can fully coordinate their vision at five feet (Braddock and Atkinson, 1979).

(b) There is no stability to the images infants perceive. Infants cannot make sense of images that do not hold perfectly still with respect to their eyes for at least two or three seconds (Maurer, 1975). When it is almost impossible for a trained adult to hold a camera still for even a second, the difficulty of holding an object still in relation to the infant's eyeballs for several seconds becomes apparent. The problem is intensified when it is found that infants' eye movements are "rapid and disorganized, especially when crying" (Schulman,

1973, pp. 76-78), as most infants are doing when they are born. Only half of such infants can track even a slow-moving object for even a few seconds (Dayton, 1964). Thus infant visual perception is not only blurry but fragmentary.

(c) Another problem with infant perception is alertness. The infant's eyes are generally blurred by tears. They are often closed, either from relaxation, napping, or blinking. Even if their eyes are open and free from tears, they are often completely devoid of attention, like the adult who may be momentarily oblivious of his physical surroundings even when his eyes are open (Fantz and Miranda, 1975). Due to these low alertness levels, even infants with the physical capabilities of perceiving blurry patches of light and dark for several seconds at a stretch may completely fail to do so, due to neurological immaturity (Karmel and Maisel, 1975).

(d) Newborns have no conceptual framework into which to fit their scattered visual images. In medical terms, the newborn has little capacity for encoding and can only learn perceptually through laborious investigation, primarily by feeling and tasting objects (Salapatek, 1975). The adult's reliance on sight over taste and touch is a skill developed only after time and discipline. Moreover, infants cannot take in wide scenes all at once or even focus on figures as broad as a human figure (Maurer, 1975). Young babies use only what is known as corner-scan focussing. That is, when they focus at all, it is not on a face or body but usually only on one extremely close corner of a highly contrasting object – often the mother's chin or hair. Full-face recognition is usually not perfected for several months and is certainly impossible at birth (Salapatek, 1975).

(e) Infants have little visual memory of either shape or pattern, as confirmed by experiments (Salapatek, 1975). This helps to explain why we do not remember our early days – or even years – in visual imagery. Even if there were some sort of hidden memory ability in newborn infants (which experiments deny), we should expect that such memories would be almost inconceivably varied and not uniform as Sagan suggests (Cohen and Gelber, 1975). Some babies are born with their eyes open; others, eyes closed. Some fixate momentarily on contrasting stationary objects at close range, like a nipple or forceps; others might never have a stable attentive moment, and all is a chaotic blur. Some are born in even light, some under spotlights, and some in virtual darkness. Some begin to sense light-dark contrasts, while others fail to recognize even this distinction. Some have feeling for color or motion; others are relatively color-blind and unable to track moving objects at all. The possible combin-

ations are so endless that even if infants all stored their birth experiences in memory, their “playbacks” should hardly be expected to resemble each other at all except in rare coincidences. Sagan’s thesis assumes that infants can discern whole figures, with relative integrity and stability, in a certain part of their visual field, but the evidence above is alone adequate to show that his theory is unfounded.

(3) Even if infants were able to perceive their surroundings with any kind of completeness or uniformity at birth, the birth experience and death experiences we are concerned with are not analogous enough to reduce NDEs to memories of birth. Let us review just a few of the more striking dissimilarities between NDEs and what an infant would perceive even if it were possible for him to register images stably and consistently (as he cannot).

(a) Sagan suggests that the birth canal would look like a long dark tunnel with a light at the end. This takes the word “canal” too literally. The baby’s head presses tight against the lips of the uterus, allowing no light into the womb. The birth is more analogous to breaking through a membrane from a dark room into a lighter room, or to surfacing from a muddy swimming hole, than to peering down a long tunnel with a glowing light at the other end. Moreover, even if the opening did let light in, the baby is unable to tilt either his head or his eyes upwards to see it (Jones, 1926). If the light registered at all on the untrained brains of the infants, it should be remembered as light streaming in from cracks at the top of their visual field, and not as images in which the recipient is looking forward down a long tunnel.

(b) Sagan suggests that the figure of the midwife or doctor may be taken for the “figure of light”: heroic, loving, and surrounded by a halo of light. We have already seen that the baby could not possibly focus on such a figure as his doctor or midwife, but if he could, would the figure seem heroic and haloed? The figure would more likely seem a clinical torturer, holding him upside down by the feet, spanking him, cutting his connection with his womb and food supply, putting silver nitrate in his eyes and strapping bands around his ankles. Nor is there any reason that the doctor or midwife should appear substantially brighter (glowing) or darker (haloed) than the surrounding room or background.

(c) Sagan’s analogies are predominantly concerned with three features: the tunnel with light at the end, a sensation of flight, and a dimly perceived “figure of light.” None of these characterizations, however, correspond to the most important NDEs indicative of survival. In survival-related NDEs we expect visions of either deceased

friends and relatives, or religious figures, or heavenly imagery of flowers, fields, paths, or boundaries (Osis and Haraldsson, 1977). Even if Sagan's reconstruction of the birth experience were to explain visions of tunnels, lights, flying, and a "fuzzy-figured light," it manifestly fails to explain the sharp and detailed visions with which we are concerned. Clear and distinct deathbed visions of dead relatives, of St. Jerome in friar's hood, or of Jesus with a bloodied chest, are neither explained nor refuted by Sagan's imagination (Ring, 1980).

Lest it seem that we have devoted undue attention to such an indefensible theory, it should be noted that this "amniotic universe" theory of Sagan's has wide popular appeal, both for its superficial understandability, its purported explanatory power, and for the charismatic character of its popularizer in the media. This exercise may also serve to demonstrate that questions concerning the nature of near-death experiences are indeed amenable to empirical investigation — or at least that studies by clinical neurophysiologists and behavioral psychologists have a useful role here — and that much remains to be done in this field before we can adequately interpret the "figure of light" phenomena in near-death experiences.

REFERENCES

- Braddock, O., and Atkinson, J. Accommodation and acuity in the human infant. In R.D. Freeman (Ed.), *Developmental Biology of Vision*. New York: Plenum, 1979.
- Cohen, L.B., and Gelber, E.R. Infant visual memory. In L.B. Cohen and P. Salapatek (Eds.), *Infant Perception*, Vol. I. New York: Academic Press, 1975.
- Dayton, G.O., Jr. Analysis of characteristics of fixation reflex in infants by use of direct current electro-oculography. *Neurology*, 1964, 14, 1152-1156.
- Dayton, G.O., Jr., Jones, M.H., Aiu, P., Rawson, R.A., Steele, B., and Rose, M. Developmental study of coordinated eye movements in the human infant. I. Visual acuity in the newborn human. *Archives of Ophthalmology*, 1964, 71, 865-870.
- Dayton, G.O., Jr., Jones, M.H., Steele, B., and Rose, M. Developmental study of coordinated eye movements in the human infant. II. An electro-oculographic study of the fixation reflex in the newborn. *Archives of Ophthalmology*, 1964, 71, 871-875.
- Fantz, R.L., and Miranda, S.B. Newborn infant attention to form of contour. *Child Development*, 1975, 46, 224-228.

- Grof, S. *Realms of the Human Unconscious*. New York: Viking, 1975.
- Hochberg, J. In the mind's eye. In R.N. Haber (Ed.), *Contemporary Theory and Research in Visual Perception*. New York: Holt, 1968.
- Hochberg, J. Attention, organization and consciousness. In D. Mostofsky (Ed.), *Attention: Contemporary Theory and Analysis*. New York: Appleton, 1970.
- Jones, M. The development of early behavior patterns in young children. *Pedagogical Seminary and Journal of Genetic Psychology*, 1926, 33, 537-585.
- Kalish, R.A. Contacting the dead: does group identification matter? In R. Kastenbaum (Ed.), *Between Life and Death*. New York: Springer, 1979.
- Karmel, B.A., and Maisel, E.G. A neuronal activity model for infant visual attention. In L.B. Cohen and P. Salapatek (Eds.), *Infant Perception*, Vol. I. New York: Academic Press, 1975.
- Maurer, D. Infant visual perception: methods of study. In L.B. Cohen and P. Salapatek (Eds.), *Infant Perception*, Vol. I. New York: Academic Press, 1975.
- Osis, K., and Haraldsson, E. *At the Hour of Death*. New York: Avon, 1977.
- Ring, K. *Life at Death*. New York: Coward, McCann, and Geoghegan, 1980.
- Rugh, R., and Shettles, L.B. *From Conception to Birth*, Vol. I. New York: Academic Press, 1971.
- Sagan, C. *Broca's Brain*. New York: Random House, 1979.
- Salapatek, P. Visual scanning of geometric figures by the human newborn. *Journal of Comparative and Physiological Psychology*, 1968, 66, 247-257.
- Salapatek, P. Pattern perception in early infancy. In L.B. Cohen and P. Salapatek (Eds.), *Infant Perception*, Vol. I. New York: Academic Press, 1975.
- Schulman, C. Eye movements in infants using direct current recording. *Neuropaediatric*, 1973, 4, 76-86.

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Parapsychological Reflections on Some Tunnel Experiences

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ABSTRACT

This paper examines tunnel experiences, which have been discussed by Raymond Moody, Kenneth Ring, and Kevin Drab in the context of near-death experiences. It is argued that tunnel experiences, even when possibly triggered by psi cognition, are not always associated with near-death experiences or out-of-body experiences. A proposed definition of pseudo-hallucinations is adapted to possible psi-induced tunnel experiences. Six categories of tunnel and related experiences are tentatively distinguished: (1) hallucinated circular or oval shapes or spirals; (2) tunnels used for an ostensible "distant vision" but not for subjective traveling; (3) tunnels used both for an ostensible "distant vision" and for subjective traveling; (4) tunnels associated with ostensibly mediumistic and mystical OBEs; (5) tunnels of NDEs; and (6) tunnels used in ostensible precognition and postcognition. The classification does not deny possible neural correlates and is open to revision. A transactional view of visual perception is accepted, and the hypothesis is advanced that the tunnel is a subconsciously devised artifact for overcoming a spatial and/or temporal gap at the perceptual level created by psi cognition intruding into consciousness. The view is compared with the approaches to tunnel experiences sketched by Robert Crookall, Itzhak Bentov, and Kenneth Ring. A new solution of why tunnels are missing in many OBEs and cases of "clairvoyant travel" is offered.

The Tunnel as a Possible Psi-Induced Pseudo-Hallucination

This paper suggests that the tunnel experience, which is regarded as a significant aspect of some near-death experiences (NDEs), may be too complex and variable to have a single explanation. That the tunnel may not always be associated with the NDE seems to be admitted. My argument is that the tunnel, even when it occurs as a paranormal experience, is not always and unambiguously associated with an out-of-body experience (OBE). Trivial as this non-correlation may appear, it nevertheless raises some questions about the interpretation of "awareness" in the quasi-spatial imagery of the border states between "waking" and "trance." A corollary of my argument is that the term "hallucination" may carry different meanings in the contexts of possible psi-induced misperceptions and other misperceptions that are not so induced.

Esquirol's definitions (1837) of illusion as a "false perception of external objects" and of hallucination as a "subjective memory image" were radically altered by the later extrapolation by investigators of a class of "active illusions," meaningful projected memory images that tend to become "integrated hallucinations," perhaps not very different from the "idiosyncratic synthesis of image and percept" postulated by Frederic W.H. Myers in the classical studies of phantasms (1886) he conducted with Edmund Gurney and Frank Podmore.

Formulating differential criteria for the whole range of hallucinations is a formidable task today. Two comprehensive symposia, one edited by L.J. West (1962) and the other by Ronald Siegel and West (1975) only served to demonstrate the phenomenological similarities of various hallucinations irrespective of their etiology (whether induced by drugs, sensory deprivation, hypnosis, meditative practices, psychotic conflicts, hysterical disturbances, etc.). Even the older distinction between sensory (peripheral) and ideational (central) hallucinations has tended to fade away with advances in neurophysiology. C.W. Savage (in Siegel and West, 1975) would persuade us that perceptions, dreams, fantasies, hallucinations, and thoughts are not sharply distinguishable experiences on a continuum. Any term in the series can generate any other in appropriate contexts. The blurring of lines has been exploited by critics of NDE and OBE research.

For the purposes of my paper, I shall rephrase an old distinction of Kandinsky's between hallucinations proper and pseudo-hallucinations. In a pseudo-hallucination, as I regard it, the normal, conscious, waking mind is aware that objective perception is lacking and yet is also aware that the anomalous pseudo-perception is not a wish fulfillment, fantasy, or dream. A pseudo-hallucination, then, occurs when a subject recognizes that he is the victim of an anomalous perceptual experience but is unable to provide any plausible explanation of the anomaly even after prolonged self-inquiry and self-criticism.

Karlis Osis and Erlendur Haraldsson (1977, pp. 54-55) define a "hallucination" as an "image coupled with a misapplied sense of realness" and distinguish it from an "ESP-based hallucination," which has an appropriate "sense of realness." But a "sense of realness" suggestive of a psi context has to be confirmed by a *later* scientific inquiry, possibly of an indirect and circumstantial kind, as Osis and Haraldsson believe. There is no reliable and valid index separating psi hallucinations from all other hallucinations *before* the confirmation of an extra-sensory link. I suggest that psi hallucinations, at least of the waking moments of a near-normal mind, fall within my subclass of pseudo-hallucinations and, in that sense, are different from

psychotic, hysterical, drug-induced, or prolonged-sensory-deprivation hallucinations.

It is quite misleading to assert that pseudo-hallucinations are experiences of psychologically naive subjects alone. Two decades ago, I referred (Chari, 1962) to R.R. Willoughby's impressive demonstration of "ghosts" presented as visual phantasms to some highly sophisticated professionals engaged in psychological research. E.J. Dingwall (no date but circa 1950), a highly qualified and skeptical parapsychologist, reported two personal experiences of hypnagogic images occurring in the border state between waking and sleeping, one of a curious Chinese face and the other of a blue star that disappeared with a loud crackling noise like the one emitted by an electric spark. Dingwall, who was extremely well read in the literature on hallucinations, had no explanation to offer. His hypnagogic images shared the important characteristic of "as if but not really out there" with the class of pseudo-hallucinations. Dingwall was no neurotic or psychotic but a highly intellectual medical and scientific researcher. His hallucinations, in spite of their "sense of realness," were not psi induced.

In psychotic hallucinations (for an interesting personal account, see Lang, 1938, 1939), there is generally no subjective management of the situation; insight into the experience is lacking, and there is active belief in the content of the hallucination and even resistance to a scientific probing. In a recent apparent exception reported by Morton Schatzman (1980), his schizophrenic patient Ruth seemed capable of initiating at will complex hallucinations like phantoms of people she knew. After reading the report, I am persuaded that since the trances were followed by partial amnesia, true insight into the subjectivity of the phantoms was lacking even when a kind of subjective control existed. My criteria for pseudo-hallucinations are not met.

F. Barron, M.E. Jarvik, and S. Bunnell (1964) contend that the psychotomimetic (hallucinogenic) drugs rarely produce a psychotic hallucination in the classical sense. The subject, they say, can distinguish reality from the psychedelic vision even when the influence of the drug is compelling. But they at least imply that the behavioral accompaniments of the psychedelic state (poor arithmetical reasoning, spelling, drawing, lack of motivation, and lack of cooperation) and the measurable (pupillary, vascular, EEG) correlates are not distinctive of the near-normal state or even of a non-specific arousal of no great intensity.

I believe some tunnel experiences are psi-induced pseudo-hallucina-

tions not associated with either NDEs or OBEs. On my reading of the situation, Kevin Drab's (1981) query, "Are tunnel experiences real or hallucinatory?" is belied by the "as if" character of pseudo-hallucinations. A schema that requires absolute choices between "fact" and "fiction" provides little scope for any inquiry into extra-sensory capacities. I believe that alternative schema for possible psi cognition at work in pseudo-hallucinatory tunnels have not so far been proposed. Bruce Greyson (1981), in his spirited rejoinder to Michael Grosso, does refer to the psi-mediated-instrumental-response (PMIR) model of Rex Stanford. The model, which has been criticized by Stephen Braude (1980, 1981) on what seem to me cogent philosophical grounds, is too limited to be of use in evaluating complex psychical experiences. In an earlier paper (Chari, 1966), I pointed out that the implicit metalanguage of fashionable theories of communication presupposes a neutral observer who has full access to *both* ends of the informational process. Psi-induced pseudo-hallucinations, in which the only significant evaluation of the experience may have to be conducted by the percipient himself, present great difficulties for both the structural and statistical-semantic versions of current information theory. Any analysis, if it is not to be an empty and *a priori* piece of theorizing, must keep close to the subjective reports, however distasteful that may be to fastidious investigators who would rather rely on objective methods.

A Tentative Typology of Tunnel and Related Experiences

Raymond Moody (1975) remarks that the tunnel in NDEs is also described as a cylinder, funnel, sewer, cave, valley, void, or simply a dark space. Perhaps the high variability of description may be symptomatic of the NDE. I shall pay special attention to dimensional criteria by arranging, in crude and schematic outline, tunnels and related experiences in a graded series though not necessarily in the order of ascending complexity, since all tunnel experiences may be incredibly complex.

1. *Visual apparitions enclosed in circular/oval spaces.* We have, to start with, some curious cases of visual apparitions enclosed in circular and oval spaces. In a case discussed by G.N.M. Tyrrell (1953), the subject, Gottschalk, had written a letter to a Thorpe about a recitation to be given at Prince's Theatre. Thorpe was then acting in two plays at the theatre. Gottschalk was walking along the road to meet some friends when there suddenly appeared before him a disc of light. In the illuminated space were two manicured and whitened hands, un-

mistakably those of Thorpe, handling the letter Gottschalk had written earlier. At about this time, Thorpe actually was opening and reading the letter. The evidence for psi cognition in this case is weak except for the asserted coincidence of the objective event and the subjective experience in time. How close the coincidence could have been is not clear from the narrative.

I have three comments on this category of psi-induced circular and oval pseudo-hallucinations. First, the circular hallucinatory spaces do not have much depth; they are not cylinders, tubes, or funnels. They seem to be between some self-contained "crystal-visions" and the "tunnel of concentric circles" described by a subject of Moody (1975). A spiral, whether Archimedean, logarithmic, or hyperbolic, has less depth than a stereoscopic figure. A computer program can develop intermediate figures of varying depth. The subject of Ralph Shirley (no date but circa 1930), who seemed to be looking through the wrong end of a telescope, might have been closer to the tunnel than to the pseudo-visual circles or spirals.

Second, the bright disc of Gottschalk seemed to be on a different plane altogether from the ordinary objects on the road. The illuminated circle, in fact, was not very different from the "medallion portrait" in which a collectively perceived apparition of the head of a deceased Captain Towns showed itself in another case recounted by Tyrrell (1953). Tyrrell remarks that the "medallion portrait" occupied a "space of its own" unconnected with the wardrobe on which it was seen. The "mirror visions" described by Ibn Khaldoun (Barrett, 1911) nearly seven centuries ago hovered apparently on a misty curtain between the observer and the mirror. The description matches the more recent descriptions of the "clouding" of the crystal or the globe as seen by the sensitive or the "scryer." Ostensibly psi-induced "crystal-visions," although they may appear to follow optical laws of magnification, reflection, refraction, and color contrasts, for sophisticated subjects who have learned to expect the effects, are yet basically unrelated to ordinary perceptual space (Myers, 1903). There is an analogy, I think, between these circular and oval hallucinatory shapes and the after-images described by Heinrich Klüver (1926), which, in mescal-induced states, transform themselves into colored shapes, for instance violet circles, most imperfectly localized in perceptual space. Poorly defined and indescribable pseudo-sensations seem to involve the mid-temporal lobe, often the anterior and mesial surfaces (Neppe, 1981). Is it possible that psi cognition may activate the relevant cortical areas to produce an indistinctly localized pseudo-hallucinatory illuminated circle? The etiologies would then be different for two

similar classes of experiences, the mescal and the psi-induced images.

Third, there is no large involvement of the percipient in the hallucinatory space. He does not experience his own location or movement in the shallow discs or circles. D. Scott Rogo's friend, Blue Harary, in his OBEs sometimes felt himself identified with a moving ball of light (Rogo, 1976). A moving ball of light with which the subject identifies himself and a shallow circle he simply sees before him are very different. For the most part, in my category 1 of pseudo-hallucinations with a possible psi context, there is no weird transposition of subject and object of the kind that may occur in mescal intoxication (Klüver, 1926) and in other psychotomimetic states (Barron *et al.*, 1964) when the object becomes endowed with mental qualities whereas the subject becomes a passive object with no "interior mentality." Whether the transposition in some degree occurred for Blue Harary is not clear from Rogo's description.

2. *Psi-induced pseudo-hallucinatory tunnels.* Mrs. Dawson Scott by her own admission was an agnostic about psychic realities. Nevertheless, in 1926 she published some automatic scripts purporting to come through her hand, containing some verifiable information, from four "spirit communicators." One of them claimed to be her late husband. A little before Dawson Scott developed automatic writing, she had a series of unanticipated and startling tunnel experiences (Dawson Scott, 1926), though regrettably she does not date them as she dates her automatic scripts. Relaxing in her room upstairs and closing her eyes, she could see right in front of her a dark tunnel. Extending her gaze into it, but apparently not traveling along it subjectively in any full-scale fashion, she could see what looked like distant scenes, colored seas, houses, and even trains passing by.

When a Mrs. Craven, who also had lost her husband, came to stay as a guest in Dawson Scott's home, the latter had a further series of even more startling tunnel experiences (Dawson Scott, 1926). Emptying her mind of all thoughts (Dawson Scott's own characterization of her mental state), closing her eyes, and mentally gazing out of the far end of the tunnel, she could see what looked like a ghostly counterpart of her drawing room downstairs, since the walls had dissolved in a colorless light. Mrs. Craven appeared to sit in utter dejection on a chesterfield in the room. On a sort of aerial couch connected by a twisted rope to the person of Mrs. Craven lay *Mr. Craven* (such was the impression) in profound slumber. In subsequent inspections, though not excursions *via* the tunnel, of the strangely altered drawing room, Dawson Scott became aware that "Mr. Craven" was gradually awakening. Presently "he" was fully awake, and she received a

peremptory auditory message from him asking her to inform his wife of his survival of bodily death. Dawson Scott, still entrenched in her conscious unbelief and fearing also the ridicule of Mrs. Craven, who shared the unbelief, ignored the message even when "Mr. Craven's voice" persisted for days during her rounds of duties.

My second example, that of a three-dimensional halo or cylinder, is drawn from the records set down scrupulously, with statements by independent witnesses, at the turn of the century by the gifted sensitive, Vincent Turvey (1911). He became a semi-invalid after a pulmonary accident (described by his close friend, W.T. Stead, as a "pyopneumothorax"). Turvey then had a wide variety of evidential paranormal experiences and some startlingly vivid OBEs, which, although he was somewhat disposed to spiritualist beliefs, he described with measured doses of skepticism, holding that he was not *consciously* responsible for all his queer "visions." W.T. Stead, in his preface to Turvey's book, quotes his friend as saying that in his ordinary "distance clairvoyance" a dark tunnel would apparently cut through all intervening physical objects, enabling him to see distant scenes. Turvey, who was a practiced "traveler out of the body," did not regard the tunnel experiences as OBEs. A remarkable aptitude Turvey developed between 1905 and 1908 was what he quaintly called "phone-voyance." If an utter stranger, a mile or two away, telephoned Turvey, the latter, standing at his end of the telephone line, could see through a subjective three-dimensional colored (heliotrope or violet) halo. I suggest that this was only a variant of the dark tunnel associated with Turvey's "long-distance clairvoyance," exercised in moments when he was probably more relaxed (with closed eyes?) than when he was telephoning people. Looking through the illuminated tube into a central window, as it were, with a colorless light as its background, Turvey could see and describe in detail the person or persons in rooms at the other end of the line. Occasionally he saw figures at the other end that, from the descriptions he gave, were recognized to be deceased persons. A curious experience Turvey had during what he called his "genuine phone-voyance" was that his "mentality" appeared to "ooze out" along the telephone line for a yard or two. A mirror image of the two copper wires in the mechanical set-up at his end of the telephone (i.e. an image of the wires in reversed positions) would arise on these occasions.

In both sets of experiences I have summarized, those of Dawson Scott and Turvey, more or less satisfying my criteria for pseudo-hallucinations, the tunnel was three-dimensional and not a shallow disc. Second, there was active personal involvement in the hallucinated

spaces, not in the sense of locomotion but in the sense of looking through the tunnel and beyond. With a little adjustment and orientation (I suppose the “oozing out of the mentality” in Turvey’s case and the straining “to see beyond the tunnel” in the case of Dawson Scott), the subjects apparently could look into distant rooms without entirely shifting their own position in subjective space. In other words, for both subjects there was not the complete or near total loss of coenesthetic bodily anchorage reported in a large number of OBEs. More explicitly, Dawson Scott and Turvey seemed aware of the distant end of the tunnel and the rooms beyond even while they felt they were anchored at the near end of the tunnel. In neither case was there a “seeing oneself” or autoscopy, which is a striking feature of many OBEs and which Celia Green (1968) distinguishes carefully from “seeing one’s double” or autophany. In the latter case, the subject retains his usual spatial point of view, seeing his own double as an “apparition.” Turvey did not regard his tunnel experience as an OBE. Neither did Dawson Scott. The auditory hallucination of “Mr. Craven’s voice,” with its note of urgency, which was originally correlated with the visual phantom of the altered drawing room, persisted unchanged, as did Dawson Scott’s ordinary bodily surroundings. This indicates her somatosensory and other thresholds were relatively unaltered in the tunnel experiences. The tunnel experiences of Dawson Scott and Turvey were not *ecsomatic*, to use Green’s term.

A third feature of both sets of experiences, those of Dawson Scott and Turvey, was the apparent presence of the dead in the tunnel settings. Critical introspections and doubts in both subjects could not erase the overwhelming impression of “as if out there even though not really” that is characteristic of pseudo-hallucinations in my description. I note in this context that Kenneth Ring (1980) refers to a woman mentioned by Moody who, during a tunnel experience, saw the phantom figure of a friend apparently returning through the dark passage. It transpired later that the friend had suffered a severe cardiac arrest and nearly died. She had revived at about the time of the tunnel experience. The apparent presence of the dead in tunnel settings needs to be investigated further. It is not clear to me whether Moody’s informant was only looking through her tunnel or subjectively traveling along it by shifting her apparent spatial position. An intriguing feature of the case is the apparent location (and locomotion?) of the phantom *inside* the tunnel. The visual phantoms of deceased persons hallucinated by Dawson Scott and Turvey were *outside* the tunnels, in strangely altered rooms beyond. Is all this elaborate symbolism of the dead significant or just accidental? I pose the problem for further research.

3. *Psi-induced tunnel experiences.* The case of Hermione Okeden (pseudonym) of South Africa reported by Ralph Shirley (no date but circa 1930) is representative of a third group of apparently psi-induced tunnel experiences. Okeden would relax and close her eyes (very much as Dawson Scott did) and could not only gaze along a long, dim tunnel but also travel subjectively along it by shifting her apparent spatial position. She would emerge from the distant end of the tunnel and apparently be with friends in their rooms or even among strange people in strange surroundings. Taking the case for what it is worth (there is no independent corroboration of the extra-sensory nature of the "distant visions"), there was apparently a much greater loosening of Okeden's bodily anchorage than that of Dawson Scott in her tunnel experience or Turvey in both his "long distance clairvoyance" and his "phone-voyance." More explicitly, Okeden, in her pseudo-hallucinatory experiences, seemed to be mostly at the far end of the tunnel and little or not at all at the near end. There may be a whole series of delicate shifts or transitions by which my category 2 shades into category 3. Experiences, contrary to some theories of OBEs, may be a matter of *degree*. Theories of the "silver cord" and the "astral body" (parasomatic experiences) must be subjected to the most searching epistemological scrutiny.

I quite realize that reports of complex hallucinations, even when they occur in a near-waking state, may be prone to retrospective falsification by subjects or even confabulation in the telling. Greyson (1981) rightly admonishes us that the NDE subject who describes psi cognition as having taken place during a period of complete coma may be altering the sequence of events after recovery. The possibility seems to me large, especially since psi cognition arises from a deep stratum of the mind. There is great danger of self-deception both in the subject and in the experimenter with his preconceptions. Neither can be too critical or too skeptical in reports.

Okeden does not tell us whether she ever saw figures of the dead inside or outside her tunnel. Possibly she did not. In any case, I am unsure how far the puzzling feature divides various tunnel hallucinations. The peculiarities of symbolism may be those of the individual and not of the subgroup regarded as a whole. Our surveys have to be wide and detailed.

4. *Psi-induced tunnels involving OBEs.* Still another class of apparently psi-induced tunnel experiences includes reports of complex mediumistic and mystical OBEs. Whether this category satisfies all my criteria for pseudo-hallucinations, especially the retention of waking consciousness with its critical powers of introspection and

analysis, is questionable. The mediums and mystics of this category seem to be lifted very much above their terrestrial habitations. Annie Brittain, a well-known English professional medium who corresponded with me (Brittain, 1966), seemed able to travel subjectively far beyond her body (Brittain, 1935). She would move from one postmortem condition (in spiritualistic jargon, “sphere”) to another. She hallucinated figures of the dead, some known and many unknown, in these transitions. The deceased figures appeared to be surrounded by a shaft or tunnel of golden light cutting through the gloomy mists as it were of the “lower spheres.” The descriptions are typical of a very large body of spiritualistic literature.

J.H.M. Whiteman, a philosopher and mathematician, in reporting (1961) his own mystical experiences in rich detail, testifies that on one occasion he seemed to go through a dark tunnel into what looked like bright sunshine. On another occasion he saw a “white cloud” in an “opening.” He speaks of “interpenetrating spaces.” His consciousness seemed to dwell simultaneously in several different spaces permitting “comings and goings” of “personality” through “doors” and “passages” of strange “buildings” (p. 215). Spatial imagery is present in all spiritualist descriptions of the “beyond.”

In cases belonging to this fourth category of my classification, the tunnel when it occurs apparently transports the subject to “another world” altogether, with highly symbolic correspondences between states of consciousness and the hallucinated spaces. Whiteman (1961) regards his tunnel as a “fantasy construction.” C.G. Jung (1957) notes that mystical access to the “Great Light” is through a descent into a dark cave. Dawson Scott, Turvey, and Okeden, by contrast, in their tunnel experiences were never quite out of “this world” even when objects in it had an altered appearance. Are there intermediate states with tunnels opening into a hinterland of both worlds? Again, more research is needed.

5. *Tunnels and paranormal cognition in near-death experiences.* The next group of tunnel experiences is the class of NDEs with an apparently paranormal psi cognition at work conveying detailed information about near and distant events that the nearly dead or dying person could not by any means have acquired normally. This category of tunnel is one facet of Ring’s painstaking and scholarly study (1981). In view of the profound alteration of consciousness in the NDE, notably the ineffability and the feeling of surpassing peace, the question arises whether the tunnels of NDEs fit my formula for pseudo-hallucinations. Moody’s pronouncements (1975) give room for pause. On one hand, he argues that many NDE subjects can dis-

tinguish between waking experience and a dream or hallucination, and that the anesthetic hallucination of death, where it is induced by the the administration of a drug, is atypical of the whole class of NDEs. On the other hand, he suggests that psychedelic and near-death visions may *both* point to realms beyond ordinary experience. Other medical researchers like J. Ehrenwald hold that a life-threatening situation can trigger an apparent OBE associated with an NDE even when the subject has no well-articulated belief in immortality (Ehrenwald, 1974). I have remarked that the tunnels of Moody's informants are described in various ways and not always as tunnels. The tunnels of Dawson Scott, Turvey, and Okeden were relatively stereotyped and constant, judging by the descriptions. I am inclined to suppose that the tunnels of my category 5 are like those of category 4 opening into "another world." The question remains whether some NDEs look into the far end of their "dark passages" while being anchored to the near end. Are some NDEs ecsomatic without being parasomatic, to use Green's terminology? In parasomatic tunnel NDEs there should be some means by which the altered consciousness *moves across* the tunnel.

6. *Tunnels involving movement backward and forward in time.* I must deal briefly with my last category of tunnels associated with psi-induced hallucinations. Stead quotes Turvey (Turvey, 1911) as saying that his tunnels could cut through not only space but also *time*. The precognitive or postcognitive tunnel experience seems somewhat rare judging by my own studies (Chari, 1951). The classical tau and kappa effects of experimental psychology (Cohen, Hansel, and Sylvester, 1953) show that the spatial and temporal components of perceived events are interdependent. Possibly this applies also to the space and time separations of hallucinatory experiences. The precognitive or postcognitive tunnel raises questions about time as well as consciousness. Turvey's tunnel cutting through time was not claimed to be an OBE. The supposed or asserted space-time transcendence of OBEs provides no adequate explanation for this category of tunnel.

The six categories of tunnels I have distinguished are by no means mutually exclusive. There may be all kinds of subtle overlappings. My typology is open to revision and criticism in the light of further studies. Classifying tunnel experiences into recurrent and nonrecurrent may not be valid. A presumably nonrecurrent tunnel associated with an NDE may, after the patient's recovery, generate recurrent tunnel experiences, especially if psi cognition is released by the NDE. The possibility is suggested by Michael Sabom's data, if I may judge by Grosso's review (1981).

Some Incomplete Theories of Tunnel Experiences

I regard some proposed theories of tunnel experiences as incomplete if only because they ignore possible psi cognition at work in at least *some* of the experiences.

1. A simple hypothesis of the tunnel is provided by the supposed entoptic transfiguration of retro-retinal and chorio-capillary structures into bizarre images in hypnagogic and other states. It is evident that the etiology will not hold for all tunnel experiences.

2. I cannot agree that the psychoanalytic doctrine of birth-death symmetry (Anthony, 1940), that is, the unconscious assimilation of birth and death into similar images, coming out of or going into a dark tunnel, is the universal key to the experiences. The psychoanalytic doctrine, however, may be relevant to NDEs, with or without the tunnel experience, occurring in cultures in which reincarnation is held as an article of religious belief. Jung (1957) discusses the complexities of "rebirth" symbolism. Osiris and Haraldsson (1977) do not examine the possible interlocking of reincarnation belief and the NDE in India. Judging by my own Indian data, the question has to be debated in greater detail.

3. The tunnels of my categories do bear some resemblance to one of the hallucinatory constants postulated by Klüver (1942) in his classical studies, but they cannot be wholly reduced to the latter. In apparently psychical pseudo-hallucinatory experiences of tunnels, especially those of my categories 2 and 3, there are not too many abnormal alterations in the number (polyopia), sizes (dysmegalopsia), and shapes (metamorphopsia) of objects in the hallucinatory space. Klüver argues that these pervasive changes in objects are symptomatic of the operation of his form constants.

4. Siegel (1980) draws attention to the phenomenological similarities of all tunnel experiences. He conjectures that the subjective bright lights may be caused by the electrical activity of the brain involving a lowered threshold for phosphenes and also more generally caused by the mimicking of retinal effects by the central nervous system. Possibly we have to consider the activity of the temporal lobe. Simple visual hallucinations of flashes, spots, and dots may arise from the activation of the occipital area. Complex psychosensory hallucinations involving several sensory modalities, with some depersonalization and de-realization (Neppe, 1981), may point to involvement of the temporal lobe. Brodmann's areas 42 and 22 may be called into play in auditory hallucinations that are not simple sounds like buzzing or hissing. Dawson Scott's tunnel led to auditory as well as visual halluci-

nations involving phantoms. Although the symptoms of temporal lobe disorders *are* variable, a certain constancy for individuals may prevail (Neppe, 1981). While I admit these possibilities, I repeat that it is not the simple choice ESP *or* temporal lobe activation that is before us. The former, for all we know, may underlie the latter in some cases.

Sophisticated methods of studying the brain, for instance by computerized axial tomography or by the more recent positron emission tomography, are easy to suggest, but they are difficult to apply to individuals while they are having hallucinations. We cannot dispense with subjective reports even if they are inevitably exposed to numerous possible errors of memory, hypomnesia, cryptomnesia, and varying forms of paramnesia.

Drab (1981) adopts Siegel's general approach to tunnel experiences, but he is unable to decide between the play of neural patterns and a meaningful organization imposed on them. I cannot agree with him that the tunnel is a dispensable auxiliary aid to the subjective experience of travel. His examples may support the contention; mine do not. The symbolism of the near and distant ends of the tunnel seems to be tied in an essential way with the distribution of awareness in relation to its coenesthetic bodily anchorage in my categories 2 and 3. The apparent presence or movement of the dead inside or outside the tunnel complicates the problem further, as I have remarked earlier.

A Suggested Framework for Psi-Induced Tunnel Experiences

Recognizing that tunnel experiences are highly variable and may have several possible explanations, we may still seek a common theoretical framework for the subclasses of possibly psi-induced pseudo-hallucinatory tunnel experiences. We may regard perceptual activity as furnishing a kind of framework within which the individual constructs a personally meaningful environment.

If the ordinary perceived world is regarded as an inter-personal network offering us the best possible chances of effective action in our daily life, then unusual, and possibly psi-induced, tunnel pseudo-hallucinations signal the failure of the customary social and postural integration of visual space. J.C. Licklider (1960) remarks how through life-long experience a nearly one-to-one correspondence has developed between vision and manual responses. The arms and the hands, he explains, move in relation to the head and eyes. The correspondence has to be made nearly linear, since linear correspondence is the only

transformation that is invariant under translation and magnification. With increasing collapse of visual, postural, and muscular integration in visual hallucinations, internal, personal, and, possibly, little understood socio-cultural themes may tend to prevail more and more. The departure from linear isomorphism because of the projection of the retina upon area 17 of the cortex is negligible and troubles ordinary visual perception very little. It at least suggests that in illusions a certain non-linearity becomes marked.

I think the psi-induced pseudo-hallucinatory tunnel is an attempt to surmount a potential discontinuity between the pseudo-hallucinatory visual world and the ordinary perceptual world. I hold that the discontinuity is basically an interruption of consciousness by the sudden intrusion of psi cognition at a deep, possibly even neural, level. There could, of course, be other analogous interruptions arising from other causes. I submit that gaps in the general stream of consciousness are more often than not overcome to produce a deceptive continuity. As Henry Head observes in his classical study of aphasia (1926), "In all discussions of the relation of mind to body, stress is laid on the continuity of consciousness. But this continuity is produced by habitually ignoring gaps (pp. 490-491) . . . The mind acting as a whole not only ignores gaps in general consciousness, but habitually ignores many possible experiences on some specific level as that of sensation" (p. 541). Even without drawing upon technical considerations relating to the body-image (Smythies, 1953), I judge that the available evidence points to a comprehensive integration, or interaction, of all the sensory (exteroceptive, proprioceptive, and interoceptive) modalities. To take a specific example, the sensitivity of the dark-adapted eye (which is surely relevant to the "relaxed" states of subjects like Turvey, Dawson Scott, and Okeden) may be affected by changes in the other exteroceptors and those in muscle, tendon, and bladder.

According to my suggestion, the visual hallucination of the tunnel overcomes a spatial and/or temporal gap created by a disruption of general consciousness. The tunnel is a subconsciously devised artifact (possibly allied to certain non-linearities of visual illusions) that introduces apparent continuity into the perceptual field by a hallucinatory extension, and also some curtailment, of the counterfeit visual world. The disruption of consciousness, then, is more than a "black-out." It is an alteration as well of the texture and range of consciousness conveying ostensibly paranormal information. My view may be compared with the approaches to tunnel experiences sketched by Robert Crookall (1980). For Crookall, the spatial continuity of the tunnel compensates for a temporal break in consciousness or black-

out. Bentov and Ring admit this element but argue that there is a suggestion in the tunnel of a shift in the level of consciousness. For me also, it is the disruption in consciousness that necessitates the artifact of the tunnel supplying an apparent spatial and/or temporal continuity. Not all psi-induced tunnels, however, as I view them, are merely symbols of continuity for consciousness shifting its level. There is in some tunnel experiences something of the mimicking of retinal effects by the central nervous system to which Siegel has drawn attention. The tunnels of my categories 2, 3, and 6 supply an essential element of continuity at a *perceptual* and not simply at an ideational level. I suspect (I may be mistaken) that the shifts in the level of consciousness postulated by Bentov and Ring are more ideational than perceptual. In my hypothesis, the interdependence of perceived spatial and temporal intervals, suggested by the classical tau and kappa effects, is carried over into the pseudo-visual world of hallucinations.

The demand for *some* continuity of hallucinatory with somatosensory and other perceptual experiences, in subjects who are not psychotic, can be illustrated elsewhere too in the extensive literature on hallucinations. Klüver (1928) and Barron *et al* (1964) note that ordinary visual and mescal experiences may not be cut off from each other for the subject experiencing both of them. Adapting Klüver's terminology (1926) to my purposes, a change in the apparent object (*Gegenstand*) accompanies and emphasizes the change in the I-consciousness (*Ichbewusstsen*), its texture and range. If I am right in my approach, the tunnel, when it accompanies an NDE, may be analogous in structure and function to the tunnels of my category 4, involving profound changes in consciousness, for instance, intense personal significance (*presque vu*), and feelings of harmony (*kalopsia*) overcoming the disharmony (*kakopsia*) of ordinary life. Possibly we have here a shift in the level of consciousness, as urged by Bentov and Ring. Their symbolic tunnel is similar to my categories 4 and 5.

A crude analogy drawn from neuropsychiatry may illustrate my preoccupation with *perceptual* spatio-temporal continuity. A parietal lobe syndrome (Critchley, 1951) may be revealed in an anomalous distant vision (*teleopsia*) as well as a disturbed temporal ordering of experience (*Zeitordnung*). The abnormal continuities compensate for a deep cortical disruption. Dream states by comparison are more symbolic. Some dream drawings seem to achieve a curious synthesis of the familiar and the unfamiliar. In some dream drawings reproduced by F.S. Perls (1947), the tunnel does occur, but as an apparent pictorial projection of repressed aggressive impulses into a semi-closed space. Tunnels, therefore, can be meaningful links in perceptual as

well as in more symbolic continuities.

My hypothesis serves to explain the interesting differences between the dark tunnel of Dawson Scott and the illuminated tunnel of Turvey. Dawson Scott during her tunnel experience was resting with closed eyes. Her somatosensory, kinesthetic, and tactile thresholds were probably relatively unaltered. A dark tunnel supplied the element of continuity between the pseudo-visual hallucination and her other perceptual experiences. For Turvey, sitting or standing in a well-lit room telephoning people, a dark tunnel would have disrupted perceptual continuities. An illuminated tube or tunnel, with an open window as it were at the other end, fit very well with the total perceptual situation. The dark tunnels of his clairvoyance in time as well as in space probably were appropriate to more relaxed subjective states. For both Dawson Scott and Turvey, the hallucinatory extension of the perceived world preserved intact the distinction between the “up” and “down” directions of both the normal vertical visual axis and kinesthetic-vestibular responses to gravity. Complex somatosensory experiences seem to derive from the parietal lobes (Critchley, 1951; Neppe, 1981). The “aerial couch” hallucinated by Dawson Scott was not suspended upside down or askew even if it appeared to be floating like a balloon. The phantoms Turvey hallucinated at the other end of his illuminated tunnel were more or less in correct perspectives. There was only a slight visual inversion of right and left in the hallucinated mechanical arrangement at the near end. I submit that these hallucinatory spaces are very different from the “Lilliputian spaces” of chloral delirium or the “Brobdingnagian dilations” of hashish visions. The tunnels of my categories 4 and 5 may involve sweeping changes in the background distribution (*Hintergrundfunktion*).

Why Are Tunnels Absent in Many OBEs and Psi-Induced Hallucinations?

Horace Leaf, a researcher of mediums, lays down the general principle that in distance clairvoyance, “the object is seen as if through a tube or tunnel” (1918, p. 165). I have found *no* evidence for so sweeping a principle. Many accounts of OBEs and “traveling clairvoyance” (Green, 1968; Prevost-Battersby, no date but circa 1930), the “astral travels” of Sylvan Muldoon, Oliver Fox, and Gerhardi (Shirley, no date but circa 1930), and the mediumistic excursion into the “beyond” of Mrs. Osborne Leonard (1931) make no mention whatever of a tunnel. Why is the tunnel missing in all these cases? Bentov (1977), Ring (1980), and Drab (1981) regard the tunnel as a dispensable auxiliary aid to a shift in consciousness or a

subjective experience of travel. Emphasizing as I do the tunnel as an element in *perceptual* continuity, I have to cast about for a different solution.

I suggest many psi-induced hallucinations may be synesthesias of a new kind: paranormal fusions of pseudo-sensations or images with one type of imagery furnishing important links. Charles E. Osgood (1953) pronounces, on the basis of a large body of empirical research, that synesthesias deal with *meaning* as grasped by the individual. Various modalities are made parallel by the subject, and translations are made from one modality to the other on the basis of key language metaphors. I suspect that something like this is true for many OBEs. Selected modalities (vision for some subjects but not for all) serve as keys in the translation. I seem to find an indication of this in the studies of Leonard's mediumship pursued by Lady (Una) Troubridge (1922, 1924). Troubridge found that whereas Leonard in her ordinary life had average auditory acuity, in the trance state she had a marked hyperaesthesia of hearing to which Leonard, too, testified. The auditory hyperaesthesia persisted even in the deeper trance when the "spirit controls" and "spirit communicators" emerged. Is it too much to claim that auditory spaces (serving possibly as a background for "spirit conversations") were more important for Leonard than visual spaces even when she hallucinated the latter? Perhaps this applies to other "astral travelers" who do not use the tunnel to establish the key continuities of hallucinatory spaces. Shirley (no date but circa 1930) makes the casual remark that Sylvan Muldoon, during an OBE, *heard* the clock strike two *first* and *then* saw the hands registering the hour. Turvey by comparison seems to have used visual spaces as keys in the continuities of OBEs.

REFERENCES

- Anthony, S. *The Child's Discovery of Death*. London: Kegan Paul, Trench and Trubner, 1940.
- Barrett, W.F. *Psychical Research*. London: Thornton Butterworth, 1911.
- Barron, F., Jarvik, M.E., and Bunnell, S. The hallucinogenic drugs. *Scientific American*, 1964, 210(4), 29-37.
- Bentov, I. *Stalking the Wild Pendulum*. New York: E.P. Dutton, 1977.
- Braude, S. Letter. *Journal of the American Society for Psychical Research*, 1980, 74, 258-263.
- Braude, S. The observational theories: a critique. *Journal of the*

- American Society for Psychical Research*, 1979, 73, 349-360.
- Brittain, A. *Twixt Earth and Heaven*. London: Rider, n.d. but ca. 1935.
- Brittain, A. Personal communication, 1966.
- Chari, C.T.K. "Buried memories" in survivalist research. *International Journal of Parapsychology*, 1962, 4(3), 40-61.
- Chari, C.T.K. A note on precognition. *Journal of the Society for Psychical Research*, 1951, 36, 509-518.
- Chari, C.T.K. On information-theoretic approaches to ESP. *International Journal of Parapsychology*, 1966, 8, 533-553.
- Cohen, J., Hansel, C.E.M., and Sylvester, J.D. A new phenomenon in time judgment. *Nature*, 1953, 172, 901.
- Critchley, M. *The Parietal Lobes*. London: Edwin Arnold, 1951.
- Crookall, R. *More Astral Projections*. London: Aquarian Press, 1964.
- Crookall, R. *The Study and Practice of Astral Projection*. London: Aquarian Press, 1961.
- Dawson Scott, C.A. *From Four Who Are Dead*. London: Arrow Smith, 1926.
- Dingwall, E.J. *Very Peculiar People*. London: Rider, n.d. but ca. 1950.
- Drab, K. The tunnel experience: reality or hallucination? *Anabiosis*, 1, 126-152.
- Ehrenwald, J. Out-of-the-body experiences and the denial of death. *Journal of Nervous and Mental Disease*, 1974, 159, 227-233.
- Esquirol, J.E.D. *Des Maladies Mentales*. Paris: J.-B. Bailliere, 1837.
- Green, C.E. *Lucid Dreams*. Oxford: Institute of Psychophysical Research, 1968.
- Greyson, B. Towards a psychological explanation of near-death experiences: a response to Dr. Grosso's paper. *Anabiosis*, 1, 88-103.
- Grosso, M. Book review: *Recollections of Death: A Medical Perspective*, by Michael Sabom, M.D. *Anabiosis*, 1981, 1, 171-176.
- Gurney, E., Myers, F.W.H., and Podmore, F. *Phantasms of the Living*. London: Trubner, 1886.
- Head, H. *Aphasia and Kindred Disorders of Speech*. Cambridge: University Press, 1926.
- Ittelson, W. H., Kutash, S. B. *Perceptual Changes in Psychopathology*. New Brunswick, New Jersey: Rutgers University Press, 1961.
- Jung, C. G. Psychological commentary. In W. Y. Evans-Wentz (Ed.), *The Tibetan Book of the Dead*. Third ed. London: Oxford University Press, 1957.
- Klüver, H. Mechanisms of hallucinations. In Q. McNemar and M.A. Merrill (Eds.), *Studies in Personality*. New York: McGraw-Hill, 1942.

- Klüver, H. *Mescal*. London: Kegan Paul, 1928.
- Klüver, H. Mescal vision and eidetic vision. *American Journal of Psychiatry*, 1926, 37, 502-515.
- Lang, A. The other side of hallucinations: I. *American Journal of Psychiatry*, 1938, 94, 1089-1097.
- Lang, A. The other side of hallucinations: II. *American Journal of Psychiatry*, 1939, 96, 423-430.
- Leaf, H. *What Is This Spiritualism?* London: Cecil Palmer, 1918.
- Leonard, G.O. *My Life in Two Worlds*. London: Cassell, 1931.
- Licklider, J.C.R. Quasi-linear operator models in the study of manual tracking. In R.D. Luce (Ed.), *Developments in Mathematical Psychology*. Illinois: Free Press of Gencoe, 1960.
- Moody, R.A. *Life After Life*. Atlanta: Mockingbird Books, 1975.
- Myers, F.W.H. *Human Personality and Its Survival of Bodily Death*. London: Longmans Green, 1903.
- Neppe, V.M. Symptomatology of temporal lobe epilepsy. *South African Medical Journal*, 1981, 60, 902-907.
- Osgood, C.E. *Method and Theory in Experimental Psychology*. New York: Oxford University Press, 1953.
- Osis, K., and Haraldsson, E. *At the Hour of Death*. New York: Avon Books, 1977.
- Perls, F.S. *Ego, Hunger and Aggression*. London: George Allen and Unwin, 1947.
- Prevost-Battersby, H.F. *Psychic Certainties*. London: Rider, n.d. but ca. 1930.
- Ring, K. *Life at Death*. New York: Coward, McCann and Geoghegan, 1980.
- Rogo, D.S. *In Search of the Unknown*. New York: Taplings, 1976.
- Savage, C.W. The continuity of perceptual and cognitive experiences. In R.K. Siegel and L.J. West (Eds.), *Hallucinations: Behavior, Experience, and Theory*. New York: Wiley and Sons, 1975.
- Schatzman, M. *The Story of Ruth*. London: Duckworth, 1980.
- Shirley, R. *The Mystery of the Human Double*. New York: Olympia Press, 1972 (orig. pub. ca. 1930).
- Siegel, R.K. The psychology of life after death. *American Psychologist*, 1980, 35, 911-931.
- Siegel, R.K., and West, L.F. (Eds.). *Hallucinations: Behavior, Experience, and Theory*. New York: Wiley and Sons, 1975.
- Smythies, J.R. The experience and description of the body. *Brain*, 1953, 76, 132-145.
- Troubridge, Lady (Una). The *modus operandi* in so-called mediumistic trance. *Proceedings of the Society for Psychical Research*, 1922, 32, 347-371.

- Troubridge, Lady (Una). Some further considerations of the *modus operandi* in mediumistic trance. *Proceedings of the Society for Psychological Research*, 1924, 34, 298-307.
- Turvey, V.N. *The Beginnings of Seership*. London: Stead's Publishing House, n.d. but ca. 1911.
- Tyrrell, G.N.M. *Apparitions*. London: Duckworth, 1953.
- West, L.J. (Ed.). *Hallucinations*. New York: Grune and Stratton, 1962.
- Whiteman, J.H.M. *The Mystical Life*. London: Faber and Faber, 1961.

ADDENDUM

Supplementary Note on the Definition of Pseudo-Hallucination

Since submitting the preceding paper, I have thought it most necessary to answer in some detail a question addressed to me by a scholarly referee who reviewed the preliminary draft of this paper. The referee remarked that I should deal more explicitly with the distinction between hallucinations proper and pseudo-hallucinations as formulated by V. Kandinsky (1885) and perhaps also refer to the handling of the problem by Karl Jaspers (1913/1959).

Kandinsky defines pseudo-hallucinations as "extremely vivid and perfectly definite images which, however, differ from the truly hallucinatory images by not having the objective character of the latter. The conscious mind is clearly aware of them as subjective but at the same time as of something new and anomalous, utterly different from memory images and fancies." It should be noticed that my proposed definition of pseudo-hallucination in the body of the paper retains the actual phraseology, almost word for word, of Kandinsky.

Critics may point out that Kandinsky says nothing about pseudo-hallucinations having an "as if objective" character. I think otherwise. A patient of Kandinsky claimed that he soundlessly "heard" another person's thoughts. In such cases, Kandinsky granted that even though the pseudo-hallucinations are not mistaken for percepts, they are yet regarded in a certain sense, as "coming from without." In Kandinsky's schizophrenic cases, the external source was traced to one's enemies or even to God. Kandinsky suffered from periodic attacks of mania himself. He tried the effects of opium and experienced both hallucinations proper and pseudo-hallucinations before making the pioneering distinction. It is at least curious that some of his patients described pseudo-hallucinations as having a "clairvoyant," "clairaudient," or "spiritual" character, though I am not about to

lodge a paranormal claim for them at this date. But it is clear that there was, in some cases at least, an overwhelming experience of translucency, of "looking through" opaque surroundings.

Jaspers refers to the remarkable hallucinations of Ludwig Staudenmaier, a professor of chemistry in a lyceum at Freising near Munich, who distinguished "subjective" from "objective" hallucinations. In the former, he posited an irradiating influence spreading from the visual center in the brain to the optic nerve and retinal structures. In "objective hallucinations," on the other hand, the irradiating influence spread in the reverse direction from the peripheral organ to the brain. Staudenmaier "heard" inner "communications" before writing them down. I note that Kandinsky reported cases of subjects "hearing" their own thoughts. Staudenmaier seemed also to have had the remarkable power of evoking quasi-visual and solid "phantoms" of people he knew or had met, quite in the manner of Morton Schatzman's subject, Ruth (Schatzman, 1980). Schatzman's work is therefore not as novel as some of his reviewers have believed, except for the instrumental check he introduced.

F. Kraupl Taylor (1918) contends that in the history of psychopathology, the term "pseudo-hallucination" has received two incompatible definitions: (a) a self-recognized exteroceptive or interoceptive hallucination; and (b) an introspected image of great spontaneity and vividness. I claim that my definition is a judicious compromise between these two apparently contradictory definitions. I claim further that my omnibus definition receives technical support from the work of the Italian researchers F. Felici and G.B. Laurenzi (1967) and L. Cancrini (1968), who describe "projected" visual hallucinations. I contend that my "as if objective" category is supported by clinical and experimental data. I can only hope that my referee, and others, will be moderately satisfied with this reply to his query about my methodology.

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REFERENCES

- Cancrini, L. Depressione neurotica e pseudoallucinazioni. *Rivista di Psichiatria*, 1968, 3, 12-26.
- Felici, F., and Laurenzi, G.B. Allucinazioni extracampali: contributo clinico. *Rivista di Psichiatria*, 1967, 2, 470-475.

- Jaspers, K. *Allgemeine Psychopathologie*. Berlin: Springer-Verlag, 1913 (Seventh edition, 1959). Translated as *General Psychopathology* (J. Hoenig and M.W. Hamilton, trans.). Chicago: University of Chicago Press, 1963.
- Kandinsky, V. *Kritische und Klinische Betrachtungen im Gebiete der Sinnestäuschungen*. Berlin: Friedländer, 1885; quoted in Lossky, N.O. Transsubjectivity of sense-qualities. *Bulletin de l'Association Russe pour les Recherches Scientifiques a Prague*, 1936, 4(21) (Section des Sciences, Philosophiques, Historiques, et Sociales), 26-28 and 115-129.
- Schatzman, M. *The Story of Ruth*. New York: Putnam's, 1980.
- Taylor, E.K. On pseudo-hallucinations. *Psychological Medicine*, 1981, 11, 265-271.

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A Multivariate Method for the Classification of Preexisting Near-Death Conditions

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ABSTRACT

This study reports the results of a multivariate analysis of data from 33 subjects who had near-death experiences. The analysis examined the relationship between the phenomenology of the experience and preexisting conditions. Five clusters were derived: *Low Stress*, *Emotional Stress*, *Intoxicant*, *Cardiac Arrest*, and *Anesthetic*. The heuristic value of these clusters is discussed. The statistical technique used is also discussed in some detail since it is particularly suitable for category data of this type where small numbers of subjects and large numbers of variables are involved in the analysis.

INTRODUCTION

As the scientific literature on the near-death phenomenon gradually increases, speculation about its etiology and meaning shows a parallel increase. This speculation varies in concreteness from transcendental/mystical/unitive interpretations (e.g., Grosso, 1981; Moody, 1975) to psychological/psychoanalytic/multicausal hypotheses (e.g., Gabbard and Twemlow, 1981; Greyson, 1981) and to pathologizing interpretations (e.g. Siegel, 1980). Such theories also vary along a continuum reflecting more a reductionistic, single-cause view (e.g., Grosso's 1981 concept of an archetype of death) to the multideterministic psychodynamic hypotheses of Gabbard and Twemlow (1981) and Greyson (1981).

Much work remains to be done, even in the basic characterization of the experience. For example, although evidence is fairly strong that the NDE has specific phenomenological features (e.g., Ring, 1980; Moody, 1975; Drab, 1981; Gabbard, Twemlow and Jones, 1981), many people have life-threatening experiences without such features. The role of expectation of death as a determinant of the experiential features has not been fully explored, since others have NDE-type experiences when not expecting death at all. In a recent report (Twemlow and Gabbard, in press), we examined conditions existing at the time of the near-death experience and found certain experiential and personality features related to the type of illness, injury, or threat existing at the time of the experience. We found that the preexisting conditions have partial explanatory value for the nature and meaning of the experience. In summary, what we called "pre-death experiences" (accident, illness, drug, anesthetic, and fever) are much more like depersonalization than those remembered "after death" (cardiac arrest), which are much more like out-of-body experiences and less like depersonalization.

The current study has two main purposes: 1) presentation of the results of a cluster analysis of data on preexisting conditions to explore the relationship between the phenomenology of the near-death experience and preexisting conditions; 2) a description of advantages and disadvantages of a particular multivariate approach to data of this type.

METHOD

Thirty-three subjects who reported a near-death experience were extracted from a larger data pool of 339 subjects who had answered two questionnaires relating to their out-of-body experiences. The methodology and findings of this larger study are reported in detail elsewhere (Twemlow, Gabbard, and Jones, 1982).

Nineteen variables were entered into the analysis as follows:

At the time of your OBE, were you: (1) running a high fever, (2) told that your heart had actually stopped beating, (3) under any emotional stress, (4) unusually fatigued, (5) under the influence of alcohol, (6) under the influence of any drug, (7) under general anesthetic, (8) giving birth to a child, (9) in an accident, (10) in severe pain, (11) in a state of physical relaxation, (12) meditating, (13) in a state of mental calmness, (14) dreaming, (15) if you were dreaming, did the dream involve flying or falling, (16) were you experiencing sexual orgasm, (17) did your OBE occur spontaneously without any

effort on your part to leave your body, (18) were you driving a car or motorcycle, and (19) did you want to have an OBE? Each question was scored yes or no with room for elaboration in the appropriate places.

The technique used to classify the subjects was a multivariate cluster analysis for category data developed by Friedman and Rubin (1967). This method deals with the problem of clustering a set of objects into homogeneous groups based on measured characteristics of each object. A splitting function is defined to evaluate the amount of structure present in a particular "partition" of the set of data, and then the method attempts to find a partition for which this function is optimized. (A partition is a set of non-overlapping groups with every object belonging to a group.) This is accomplished by means of a "hill-climbing" algorithm, which searches for the optimum partition by continually trying to find a better partition than the one previously found. This hill-climbing algorithm can be used with any splitting function, and it does not require a numerical measure, only a decision as to which of two partitions is better in some sense.

In this application the splitting function is based on a geometric measure, a fixed measure of similarity defined between each pair of objects, and the structure of the data is determined from such a matrix of similarities. This coefficient of similarity is used instead of a distance function when the data is discrete rather than continuous. A set of data is considered to be "well-structured" if it can be split into groups so that similarity coefficients of objects in the same group are generally higher than similarity coefficients of objects in different groups.

The splitting function we use is the average object stability. As a part of the output from the program, we get the stability of each object, the average between-groups similarities, and the object-group average similarity matrix, as well as the average similarity of a group to itself, which is a measure of the internal cohesion of the group. The values for the stability of each object provide us with a way of ranking the objects according to which is most representative of the group; the higher the individual object stability value, the more representative of the group is the object. Five clusters of subjects were derived, and when the relationship among groups was examined, a real structure emerged.

RESULTS

1. *Low-Stress Cluster.* The 16 subjects in this group were characterized by being relaxed and calm, not meditating, not under emotional

stress, not on drugs or alcohol, and without any of the characteristics associated with high anxiety or arousal states. The subjects, however, had a seemingly random distribution of physical causes for their near-death experience, such as childbirth, illness, accident, etc. None were pyrexia. What is characteristic is their calm and relaxed responses to the experience, in spite of physical circumstances that would normally be accompanied by considerable distress.

2. *Emotional-Stress Cluster*. The six subjects in this cluster all described themselves as under emotional stress. None were calm, relaxed, or meditating. They were not under the influence of alcohol or drugs during the experience. Once more, other physical preconditions, childbirth, accident, etc. were seemingly randomly distributed.

3. *Intoxicant Cluster*. This group of four subjects all experienced severe emotional stress without any reports of meditating, being relaxed, or feeling calm. Narcotic drugs and/or alcohol were used in all cases at the time of the NDE.

4. *Cardiac-Arrest Cluster*. The four subjects in this group all experienced cardiac arrest. Accompanying the arrest, subjects reported a primarily meditative state of mind, not necessarily described as relaxed or calm and associated with dream-like images, especially flying and falling dreams implying a sense of movement within the experience.

5. *Anesthetic Cluster*. The three subjects in this cluster all experienced a general anesthetic. They described most striking distortions in levels of arousal. Specifically they were under considerable emotional stress, fatigued, but at the same time, paradoxically felt relaxed and calm. The whole experience was dream-like in quality.

In an attempt to ascertain the explanatory value of these clusters, one-way analysis of variance followed by Newman-Keuls individual mean comparisons were performed for a number of key variables. Key variables chosen were: age at the time of reporting the experience, age at the time of the first out-of-body experience, Absorption score (Tellegan and Atkinson, 1974), Danger-Seeking score (Tellegan and Atkinson, 1974), Psychoticism score (Eysenck and Eysenck, 1968), Hysterical Tendency score (Caine, 1972), and Death Anxiety score (Dickstein, 1972). There were no significant differences among the clusters for age, danger-seeking, psychoticism, hysterical tendencies, death anxiety, or absorption. There were significant differences for age of first out-of-body experience between the "low stress" cluster (mean age, 29.9 years) and the cardiac arrest cluster (mean age, 10 years) ($F = 2.956$, $df = -, 32$, $p < .05$).

In our previous publication (Gabbard, Twemlow, and Jones, 1981) we made a comparison between subjects who had had a near-death

experience and other out-of-body subjects. We determined a group of features that were more commonly represented in the near-death subjects. These were: noises heard during the early stages of the experience, traveling through a tunnel, seeing the physical body from a distance, awareness of other beings in a nonphysical form (and particularly of deceased people close to the experiencer), seeing a brilliant light, a sense of purpose connected to the experience, the experience as "life changing," "spiritual or religious" in nature and of "lasting benefit." In view of the small number of subjects in the current study, statistical tests for these individual variables were not made, but what was striking from a calculation of simple percentages was that the tunnel and brilliant-light experiences were much more common in the anesthetic and cardiac-arrest group, being present in all subjects. The cardiac-arrest group stood out further by virtue of all subjects experiencing a sense of power and energy during the experience.

Examination of educational level and sex distribution revealed no striking differences between clusters. The sample has a high percentage of females (68 percent), and subjects were at least high school graduates. The cardiac arrest group tended to be slightly better educated, with some college experience.

DISCUSSION

Preexisting Conditions

The heuristic value of these clusters remains to be more fully determined. These preliminary clusters suggest a continuum of near-death experiences rather than a single unitary experience. The literature has focused most of its attention on the more dramatic experiences associated with cardiac arrest, and indeed, this group stands out in our analysis. The cardiac-arrest group has, in a sense, come closest to confronting death. The power, energy feelings, and flying and falling dreams associated with the arrest could, from a psychoanalytic point of view, be associated with the release of early infantile grandiose feelings, fitting neatly into that category Kohut (1971) described as the "archaic grandiose self." Cardiac-arrest subjects seem also to have experienced out-of-body phenomena at a significantly earlier age than other groups, suggesting a longer familiarity with alterations in mind/body perception.

Inspections of the phenomenological items and items concerning the meaning to the individual suggests that the intoxicant-cluster subjects have experiences that are quite vivid, even bizarre and with a con-

fused and magical meaning (Twemlow and Gabbard, in press). They are much more like depersonalization with hallucinatory features (“pre-death” experiences). It has been suggested that such experiences represent a state-dependent recall of birth trauma (Grof and Halifax, 1978).

The Multivariate Technique as Applied to this Type of Data

Among possible criticisms of this statistical technique are the following: similarity coefficients do not allow the variables to be weighted as to their importance in matches. If too many variables are included, the similarity coefficients will depend on accidental matches or “noise” rather than on matches of the pertinent variables. Variables should be chosen carefully. They should be logically independent, pertinent to the type of classification desired, and limited in number. If variables are of different types, it is likely that there will be more than one possible cluster solution that achieves good structure. Too much variation in the number of states for the set of variables may result in the many-state variables not playing as important a role in the classification procedure as the few-state variables. It would be best to have an equal number of states for each variable and approximately equal frequencies for each state.

From a practical point of view, however, this method allows an investigator to examine his data even when relatively small numbers of subjects are available and relatively large numbers of variables are included. The technique allows quite well-differentiated, meaningful groupings to be derived from small amounts of discrete data and thus is, we feel, often the technique of choice. Typological methods, which attempt to classify discrete data to provide a statistically stable profile, are of considerable value in classifying phenomena such as the near-death or out-of-body experience.

CONCLUSION

This study and our previous studies have suggested that the differences between near-death experiencers and other subjects who have altered mind/body perceptions lies more in the way in which subjects perceive, interpret, and assign meaning to these experiences, rather than in the traditional psychopathological variables or issues connected with the idiosyncratic nature of the stress itself. Thus a particular illness or life threat is not necessarily a prediction of a particular response from the subject.

Ring (1982) has suggested that the study of near-death experiences may have wide implications for education of children in dealing with

the universal fear of death and even wider implications politically. Our work over many years with a variety of altered states of consciousness, has indicated that there are the "haves" and the "have nots" in this area. Some people have much greater facility to alter consciousness and others seem simply unable to proceed with the same facility. These differences often produce competitiveness and disappointment; thus, we would strongly suggest that fundamental studies continue in an attempt to elucidate not only the meaning, impact, and philosophical significance of these experiences, but also the variety of ways in which different individuals can have and remember them.

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REFERENCES

- Caine, T.M. Personality and illness. In R. Miltler (Ed.), *Psychological Assessment of Mental and Physical Handicaps*. New York: Methuen & Company, 1972.
- Dickstein, L.S. Death concern: measurements and correlates. *Psychological Reports*, 1972, 30, 563-571.
- Drab, K.J. The tunnel experience: reality or hallucination? *Anabiosis*, 1981, 1 (2), 126-152.
- Eysenck, S.B.G., and Eysenck, H.J. The measurement of psychoticism: a study of factor stability and reliability. *British Journal of Social and Clinical Psychology*, 1968, 7, 286-294.
- Friedman, H.P., and Rubin, J. On some invariant criteria for grouping data. *Journal of the American Statistical Association*, 1967, 62, 1149-1178.
- Gabbard, G.O., Twemlow, S.W., and Jones, F.C. Do "near-death" experiences occur only near death? *Journal of Nervous and Mental Disease*, 1981, 169 (6), 374-377.
- Gabbard, G.O., and Twemlow, S.W. Explanatory hypotheses for near-death experiences. *ReVision*, 1981, 4 (2), 68-71.
- Greyson, B. Toward a psychological explanation of near-death experiences. *Anabiosis*, 1981, 1 (2), 88-103.
- Grof, S., and Halifax, J. *The Human Encounter with Death*. New York: E.P. Dutton, 1978.

- Grosso, M. Toward an explanation of near-death phenomena. *Journal of the American Society for Psychical Research*, 1981, 75, 37-60.
- Kohut, H. *The Analysis of the Self*. New York: International Universities Press, 1971.
- Moody, R.A. *Life After Life*. Atlanta: Mockingbird Books, 1975.
- Ring, K. *Life at Death*. New York: Coward, McCann & Geoghegan, 1980.
- Ring, K. *Near-Death Studies: A New Area of Consciousness Research*. Storrs, Connecticut: International Association for Near-Death Studies, Inc., 1982.
- Siegel, R.K. The psychology of life after death. *American Psychologist*, 1980, 35, 911-931.
- Tellegan, A., and Atkinson, G. Openness to absorbing and self-altering experiences ("absorption"): a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, 1974, 53, 368-377.
- Twemlow, S.W., and Gabbard, G.O. The influence of demographic-psychological factors and preexisting conditions on the near-death experience. *Omega*, in press.
- Twemlow, S.W., Gabbard, G.O., and Jones, F.C. The out-of-body experience: a phenomenological typology based on questionnaire responses. *American Journal of Psychiatry*, 1982, 139(4), 450-455.

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Over Easy: A Cultural Anthropologist's Near-Death Experience

Patrick Gallagher

ABSTRACT

Otherwise rather similar to the phenomenon and after-effects of his participant-observations in anthropological fieldwork, the author's near-death experience was a more exact solitary form of learning a new reality, replete with symbolic meanings that altered his view of life, death, and their intermediate cultural patterns. While unconscious and partially paralyzed for weeks, he had the usual NDE visions: he idly examined his body from above, lost gravity to gain flight, passed through a void tunnel to a luminous world, and encountered there personages of *radiant* knowledge and total love, all of whom had no need to eat, drink, sleep, dream, demonstrate personal worth, or use words rather than interest to know each other and everything else. Through a curious wish, he returned to terrestrial life at the cost of losing such *radiance*.

Since he recovered, his memory of these visions strangely has increased, causing him gradually to abandon many typical cultural patterns – such as frenzied competition, boredom in conversations, material collection, and continual anxiety and concern over quite brief events and imagined statuses – and to replace them with the recognition of the eternity granted by adherence to the present moment and of the remarkable worth and interest of everyone he encounters.

INTRODUCTION

Anthropologists differ from all other social scientists because they yearn for a culture quite different from their native one and must study it in solitary field work under the conditions of “participant-observation.” This axiom of course, requires more than merely learning another language, here and now, or there and then, in some strange place. As the hyphenated term itself suggests, the anthropologist must live, follow, and practice a new set of social behaviors – long enough to acquire and understand new symbols and *their* arbitrary meanings – to finally become a recognized, active member of a previously unknown culture. “Prolonged participant-observation, actually sharing in the lives of savages to see the world through their eyes,” is so crucial that without it modern ethnography is impossible (Gallagher, 1967, p. 24). My twenty some years as an anthropologist and a college professor have greatly supported a certainty herein implied: the best way to learn is to do.

This anthropological lore may also serve as a preamble to explaining the phenomenon and after-effects of my near-death experience. Presumably like all others, my NDE is a solitary form of learning through participant-observing of a quite new style of life or reality, replete with symbolic meanings. Further, what I learned from my NDE seems far sounder and more exact than the results of my prolonged field work with the Guajiro Indians of Venezuela (Gallagher, 1961, 1962, 1964, 1976). Virtually all the reports later recorded by researchers from NDErs show practically identical perceptions and descriptions of the event — despite vast differences in the witnesses' cultures, languages, educations, ages, religious beliefs, and occupations — and these accounts are all independent. Sound anthropological reports of similar events are seldom identical, or even similar, no matter how alike the reporters may be (Miller, 1979). Similarly, what I learned formally about the nature and prospect of death (from my brief post-doctoral study at the Washington School of Psychiatry) is far less exact than what I learned from my NDE. And, like other NDErs, I no longer need tremble. Now I know that our current life is merely an interlude, and that “Over Easy” far more accurately defines death than does *that word*. Families in our society spend more money on private funerals that last a few days than they do on private educations that persist for years. Clearly, to our society, Death is a more sanctified horror than illiteracy, worthy of far more thought, effort, and worry. My NDE has permitted me to abandon such gross anxiety and graced me with the truth that *life has hardly begun until you die*. As other NDErs often mention, such freedom from the terrifying concept of death (embraced by the majority of the members of our culture) automatically has elevated my love of life and has made life far more interesting, useful, and delightful than mere poetic words can explain. Other patterns of our culture — living for urgent goals, roles, dreams, or schemes — now seem to be of little rhyme or reason. The patterns that replaced those increase daily in importance. These changes appear to be related to what anthropologists generally experience shortly after entering a society to do field work (“culture shock”) and then, much later, upon returning to their native cultures (“counter shock”).

THE NDE AND ITS AFTER-EFFECTS

The accident that propelled me into my new life style occurred in 1976 when I was driving from a visit with former students near Death Valley to meet my wife and return with her to our home in

Berkeley. The accident caused that meeting to be considerably postponed, for I was greatly damaged by flying through the windshield some fifty feet and landing on the highway. In a hospital a number of physicians aided me as I was comatose. My twenty-year-old son, by chance telephoning, learned of my hospitalization and was the first to speak with the physicians. The head physician told him I would never walk or talk again, mainly to prepare him for my certain death that day. When I awoke instead, the entire right side of my body was paralyzed because of skull fractures over the left hemisphere, and I had grave difficulty in breathing because of the paralysis and because of broken ribs on the other side. I was unconscious for weeks and suffered from lacerations and other major problems.

When I awoke, I was amazed at being unable to move the right side of my body but unaware of all else. I could not recognize anyone who greeted me, including my wife and children. And, of course, I didn't know who I was. Finally, after a couple of weeks, I discovered language exists on earth, but the one that began to return was Spanish. Perhaps this second language came first because I am ambidextrous and so use the left hemisphere for English and the right for the second language, and the left neurons damaged in the skull fracture hindered English far more than Spanish. Since the ambidextrous person has greater ease in shifting brain functions, English began to return a few days later with the two problems observed by linguists in people who miraculously regain language. One is using the wrong noun, to produce "Hand me your elbow" instead of "Hand me your book"; the second, disastrous to understanding, involves arranging words of a sentence in a wrong order and thus violating vastly important syntax rules. But after a short period of time, I was able to speak fairly accurately. As English returned, I gradually lost the paralysis of the right side of my body and regained other capabilities as well. So to the astonishment of many people, including the physicians, I did recover enough to begin lecturing again without much noticeable damage. I began to have seizures, however, (probably because of scars in my brain tissue), which almost always commenced with auditory (rather than visual) curiosities. Generally, I would distinctly hear classical music, a warning to lie down immediately to avoid falling down. Some seizures led to another day or two in the hospital in a coma, but I do not recall having any of the visions then that were common when I was first unconscious.

These visions (no term is more descriptive), though still not as clear as when original, have been strongly developing in my memory (in a manner similar to my gradually regaining language without any

conscious effort). They also seem sequential. (I say “seem,” for time itself did not exist for me in the comatose state.) The first vision, that of my own dead body, was a far clearer view of death than the typical one seen on television. My body was inert and totally prone. I was floating in the air, but not in some kind of a room, as is often reported. I viewed the body from above at a diagonal angle, with great interest but without any consternation. I cannot recall if I was clothed or not. But soon thereafter, so to say, I noticed I had something else to think about in addition to the bereaved body. Not only was I freed from gravity but from all other human restrictions as well. I could fly, and fly so adeptly that I felt transformed, with far greater freedom than hang-gliding provides compared with an airplane flight. The speed and joy of flying without the usual restrictions and constrictions that inhibit flight, cause fright, and so remove one from the true sensation is one that even the Wright brothers missed. Total ease and joy are but a part of such complete, solely human, non-mechanical, and unimpeded flight.

Next in the sequence was the sight of a dark area ahead, void of all light, which I saw to be the entrance of a tunnel. Flying into the tunnel at once and so moving very, very rapidly, I enjoyed the flight even more, freer from other distractions by being barred of sight. The time I was in the tunnel can only be speculated, for as I said earlier, time itself seemed unavailable, but finally I saw a circular light in the distance. As I continued to roar along, the light began to look somewhat like the sun on the horizon, in one of the rather rare earthly views that allow a brief gaze at a planet-like, highly luminescent moon – without the problems one has in so sighting the sun. The end of the tunnel was an incredible sight, with an illuminating marvel of yellow-orange color of total beauty, which also seemed at once a marvelous place to be.

When I left the tunnel, I entered a dazzlingly beautiful area, where – like time – space was so abundant as to provide no reality for considering parts of it as compartments, as we normally tend to do. It was complete space, that is, as totally and perfectly illuminated as the end of the tunnel, with the same ideal colors and radiance. I also saw within this space of space certain surprising creatures, such as lions and other marvels, all wondrously proportioned and replete with grace and beauty beyond imagining. I saw as well a number of people, some of whom were clothed and some of whom weren't. The clothing, which seemed transparent, was adornment but not the sort of shielding safeguards more familiar; it appeared that waving a hand close to such garments would allow it to pass through without distur-

balance of any kind. The people themselves, also of graceful beauty, all seemed to be those that I have long been interested in, such as my father (who had been dead for some twenty-five years) and Sigmund Freud and Charles Darwin (whom I had written, read, and lectured about for many years). But everyone there, as I knew the very moment I was there, seemed to possess a knowledge as radiant, transfiguring, and ideal as the luminous light. And I possessed it, too. Naturally, I had never experienced or believed such phenomena could be, but there they were, as though I had always had them and they were merely recalled, revealed. Although attempting to learn things had always been an inclination for me before, now all was there, and even so it seemed I had a number of choices to make. Flying ceased, replaced by my greater interest in these new phenomena, and, like the others there, I walked around as I wished. Others were reclining. I knew that all one had to do was approach an interesting person and quite easily and almost immediately *understand his essence*. To do so completely required only a brief glance (not interrupted by usual bilateral pauses) into the person's eyes, without any speech. Time was unnecessary, but the entire episode might be termed minute, requiring only interest on the part of the viewer. The other person had the same type of interest, and the result was consummate exchange of knowledge. Words cannot provide a hint of such universal knowledge.

Without reflection or words, I knew them as completely as they knew me and finally understood why poets cite eyes as the entrance to the souls. (Earlier, I sadly felt the poetic view was solely our total dependence in conversation of following the rules of periodic eye-staring, directly and then laterally, no matter what else one may be doing while speaking and listening.) I also knew that the illuminating light would never cease: no one had the need to sleep since we sleep only to dream, and dreams were not required for persons with radiant absolute knowledge. I also understood that everyone present was in a state of perfect compassion with everyone else and everything else, that there was no specific need at all for portions of space since total space was available, and similarly there were no preferences for specific time since *all* time is experienced only in the present moment. We were freed from all those contrivances historians often claim to be the causes of war and other conflicts, including land, food, and shelters. Love was the only axiom. These ideal conditions produced a phenomenal state, for neither hate or any other disturbing passion was present — only the total presence of love. As a result, one might say that there were no emotions at all. But I think a better

version is that since love was complete, it also included slight variants such as consideration, respect, compassion, and interest, and that all of these merged.

I knew it quite possible to return to my terrestrial life, and I missed other people I also admired (those paradoxically called “living”), my children, my wife, and many others. I did decide to return, though I knew also that the price of ticket would be gargantuan: accepting the biological, physiological, and physical needs and handicaps of my body, as well as the loss of all but a splinter of my luminous knowledge. I know nothing of any aspect of the return trip, but as soon as I decided to return and so lost the ALL of what I have ever wanted to be or to know, I was there. Neither do I know how often I had visions while comatose for those weeks, but I speculate that they occurred during all the time I was unconscious.

When I returned to consciousness, a great number of other things were required of me because I was far from recovery. Although I didn't recognize my children, or any other relatives or friends, I did note the continuous, loud sound of the vacuum sweeper occasionally used in my room was far more intense and likely more meaningful than the sound of speech. I recall being puzzled by the attentive glances to the often silent and always interrupted mumbo-jumbo that comprised conversations between persons and the disregard paid to the majesty of the vacuum sweeper's sound. In many ways, I had to relearn things that we usually take for granted. I had to relearn Spanish, English, our culture, and my role in it as a “human”: to live, to be social, to lecture, to deal with all the earlier, myriad details of my life. All that returned, however, did so without formal effort or even wish on my part.

All visions here described are absolutely distinctive from what I have experienced and studied both in dreams and with psychoactive drugs. Dreams, as psychoanalytic creeds often propose, may be of considerable worth to all of us. But clearly, dreams must first be translated in order to follow the premises (of our “rational” awakesness) of time, space and logic, with causality added to uncover their meanings. We thus have to handle such impossibilities as a dream in which the dreamer acts as a child while simultaneously viewing the scene as an adult in the audience, and in which some participants can be familiar personages long dead, some participants composed of other, thus hidden, representatives. These entirely acceptable conditions in dreams would cause one to panic were they to appear in a wakeful moment. The language used in dreams, if to be understood, clearly needs translation. The events in my visions are com-

pletely different. There is no need at all for translation in any sense in order to achieve understanding of the semantics involved, either physically, socially, mentally, or linguistically. The extraordinary knowledge there for one and all cannot be improved and – rising quite above all temporal, spatial, and logical conditions and far beyond any yearning for causality – makes any earthly conjecture pitiful, no matter how universal its terrestrial acceptance may be. In large part this difficulty is because of our conscious reliance and dependence upon words. But as I've mentioned, I knew what I knew in my visions *without* the use of or reliance upon translation for meaning and function. Not one word existed there. Words, after all, are extremely weak, erroneous approximations – far less than, or even contrary to, the luminosity I experienced. Hence, visions and dreams are not the same in any sense. For the same reason, hallucinations and other changes in perceptions or altered states of consciousness, while interesting, are also quite different from my NDE visions. Further, it may well be that a substantial minority of the human population fails to receive either the blunders or the blessings of hallucination however termed, but all of us can rest assured that the visions I describe and evaluate will not be denied to a soul on our planet. Even more reassuring, the automatic knowledge that awaits us all is actually already within us. As a faint example of this point, compare the discovery of the semantics of sex by (1) cautiously and carefully studying all the meaning of that useful subject given to us in the heroic volumes of Sigmund Freud to (2) losing yourself by becoming one with an engaging person who also is lost for you, all out of love. Freud's work is without; the other is within. Keep in mind that I have earned and spent my position in terrestrial life by learning, writing, and speaking words from 1936 to 1982 with scarcely a pause. But the brief experience I haphazardly write about now is itself entirely wordless and entirely worthy. St. Augustine is given credit for the anthropological axiom, "The world is a book and those who do not travel read but a single page." I can justifiably lay claim, I think, to learning a lot about terrestrial life from my visionary flight elsewhere. It may appear that I rely on my memory for such knowledge. But memories can fail or be sketchy at times. Most astonishing to me, the remembrance I use to explain the meaning and nature of my travels does not diminish over time but actually greatly increases. Instead of fading, it daily grows, largely I think because the spiritual dimension of my reflections on that event continuously changes me and gives me insight into our life on this planet.

Such "counter-shock" insight on my return includes the

dimensions of our reality – time, space, and logic – which my NDE has profitably altered. Consider, for example, our dimensions of time. I once read in an antique philosophic book the idea that “children, savages, and seers all share a remarkable characteristic that is not found elsewhere even though it marvelously enhances their lives: they are always in the present moment.” The simple rule, *Pay attention now, do it now*, is often used in our society because we characteristically are concerned solely with what has happened in our past, thus generally causing a host of costly and unpleasant sensations (such as resentment, hatred, guilt, shame, and anxiety) to persist for decades after their cause or source has disappeared; or else we plan for the future: a student studies to pass courses to get a degree to get a job to be promoted to become important, and so it goes, ever onward. Hence, with us something appears to be done not for its own sake but for some other reason. I have learned from my experience that by staying in the here and now present moment, I cannot be bored by any conversationalist. A person must have his mind in another time period in order to be bored and so not to pay attention in conversation. Calamities and disasters can occur in my life, but as long as I stay in the present moment, such events are only matters of interest *when* I wish to reflect upon them. The calamitous events in one’s life can cause little more than brief grief by themselves. I am certain that I can become properly horrified by reading any of Poe’s tales of mystery and horror. But I also know that such an emotion of terror will absolutely vanish the moment I stop attending to it and resume my affairs in the here and now, once the book is closed.

I am truly amazed at the enormity of the value of time in our lives and how big a dimension time is in our concept of reality. By contrast, the Cuna Indians, neighbors to the Guajiro Indians, who live in northeastern Colombia and adjacent Panama, have a native language as adroit and elegant as Spanish or English, which has no past tense, and their noun for the shortest period of time is not a *nano-second* (i.e., one billionth of second) like ours, but a *month*. But despite the gargantuan importance we place on time in all sectors of our culture, we are generally out of the present, the only time that can be experienced, the only time there is. My NDE taught me also that the present moment without question and *right now* presents eternity to all those souls who heed it constantly. For me, it helps to understand the present if I keep in mind that each sentence I utter begins in the past and will end in the future, but it is still understood as it proceeds and is heard in the present. I see I am

not alone, for according to Waismann (1965), St. Augustine "roughly" answers the question of time measurement by insisting, "We cannot measure an interval of time in the past because the past is no longer at hand, nor can we measure one in the future because the future is not yet here, and the present is only a point." Accepting for the moment St. Augustine's notion of the present's length – the miniscule point I believe we must all so assume is nothingless by contrast to the length of the past and future – helps me to consider the present moment as out of time – therefore an eternity. While in my coma, I knew with far greater certainty just how nothingness in time means eternity as precisely as nothingness in gravity means floating. In order to gain all love one must give it all away, and so I am persuaded that in acting upon our love of time we would do best by giving away our curious concerns over the unattainable, unending, lineal components of time and be left in joy with the eternal point of the present moment. The answer in Buddhism to the question, What is Zen? is more exact: all that may be, all we experience, and all we know are in the present moment and not elsewhere. In naming his book *The Doors of Perception*, I think Aldous Huxley (1954) shares my views also, for he began his book with the quote from William Blake, "If the doors of perception were cleansed everything would appear to man as it is, infinte." Among others, that is a virtue of my NDE.

REFERENCES

- Gallagher, P. Caribbean. *American Antiquity*, 1961, 26, 464-467.
- Gallagher, P. La Pitía. *El Farol*, 1962, 24, 6-14.
- Gallagher, P. La Pitía: an early ceramic site in northwestern Venezuela. Yale University Ph.D. thesis. Ann Arbor, Mich.: University Microfilms, 1964.
- Gallagher, P. Games Malinowski played. *New Republic*, 1967, 156 (24), 24-26.
- Gallagher, P. *La Pitía: An Archaeological Series in Northwestern Venezuela*. New Haven: Yale University Publications in Anthropology No. 76, 1976.
- Huxley, A. *The Doors of Perception*. New York: Harper and Row, 1954.
- Miller, E.S. *Introduction to Cultural Anthropology*. Englewood Cliffs, N.J.: Prentice-Hall, 1979.
- Waismann, F. *The Principles of Linguistic Philosophy*. New York: St. Martin's Press, 1965.

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Near-Death Studies, 1981-82: A Review

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ABSTRACT

Near-death studies published in major scientific journals during 1981-82 are grouped by subject matter and briefly reviewed.

Near-death research has diversified in scope and intensified in sophistication in the past two years. This paper reviews near-death studies published in major scientific journals during 1981-82. In the interest of brevity, I have excluded from this review articles from the nonscientific literature, as well as books and book chapters. The latter omission was justified by the separate publication in *Anabiosis* of reviews of important books, which during this period included Michael Sabom's *Recollections of Death: A Medical Investigation* (see Michael Grosso's review in *Anabiosis*, 1981, 1, 172-176) and George Gallup Jr.'s *Adventures in Immortality: A Look Beyond the Threshold of Death* (see Kenneth Ring's review in *Anabiosis*, 1982, this issue).

The purpose of this review is to assemble, organize, and compare new studies published in 1981-82 in a variety of journals of varying accessibility. I will consider first, articles presenting new data on near-death experiences (NDEs) and related phenomena; next, papers addressing methodological and sociological issues in near-death research; and finally, articles discussing interpretations of the NDE.

Near-death researchers continued to accumulate data on the incidence of NDEs among various geographic and specialized populations. James Lindley, Sethyn Bryan, and Bob Conley (1981) reported a study from the Pacific Northwest of 50 NDEs that partially replicated Ring's five stages. They concluded that NDEs are not influenced by demographic factors, that NDEs produce profound positive personality changes, and that parts of the NDE may be related to endorphins.

Paola Gioveti (1982) described a study from Italy of 120 near-death and deathbed experiences, including 46 cases of perceptions of deceased acquaintances, 17 cases of perceptions of a border or point of no return, 29 out-of-body experiences (OBEs), 21 cases of percep-

tions of heavenly landscapes, 11 cases of paranormal phenomena observed by others at the deathbed, and 1 unpleasant suicide-related NDE.

Kenneth Ring and Stephen Franklin (1981-82) reported a study of 36 suicide attempters, 17 of whom (47 percent) described NDEs that did not differ from NDEs reported in other contexts. They discussed therapeutic implications of this finding, and the paradoxical suicide-inhibiting effect of NDEs.

Eugene Thomas, Pamela Cooper, and David Suscovich (1982-83) reported a survey of 305 volunteers, of whom a quarter had been close to death and a third reported having had an intense spiritual experience. Although they noted that near-death events and spiritual experiences tended to be reported by the same individuals, they did not report whether these spiritual experiences occurred during the near-death events.

Richard Kohr (1982) examined the relationship between NDEs and various dream, meditation, and paranormal experiences, among 547 volunteers from a paranormal/human-potential organization. He found that the 84 NDErs in this sample tended to report paranormal and related experiences more frequently than did those who had come close to death without NDEs or those who had never come close to death. Kohr raised the question of whether psychically sensitive individuals tend to have NDEs, or whether NDEs tend to focus individuals' attention on their psychic and related phenomena.

Advances have also been made in the classification of NDEs and in their differentiation from other states. Glen Gabbard, Stuart Twemlow, and Fowler Jones (1981) compared 34 OBEs occurring near death with 305 other OBEs. They reported no features unique to the near-death state, although certain phenomena, including positive after-effects, were more often associated with near-death OBEs than with other OBEs. Twemlow, Gabbard, and Jones (1982) described these 339 OBEs (the 34 occurring near death plus the 305 others) in terms of the conditions surrounding the experience, phenomenological features, and subsequent impact. They reported that subjects who had had OBEs did not differ from control subjects in terms of psychological health or background. Twemlow, Gabbard, and Lola-fayne Coyne (1982) reported a multivariate analysis of 33 NDEs that isolated 5 clusters of preexisting near-death conditions: low stress, emotional stress, intoxicant, cardiac arrest, and anesthetic. They proposed that this statistical technique is particularly suited to near-death studies with few subjects and many variables.

Russell Noyes (1981) described responses of 189 victims of life-

threatening accidents as factor analyzed into dimensions of depersonalization, hyperalertness, and mystical consciousness. He identified meaningful interpretations of these phenomena in terms of physiological, psychological, and mystical approaches to the NDE.

Several authors addressed themselves to specific components of the NDE. Kevin Drab (1981b) analyzed 71 descriptions of apparent movement through a tunnel-like space. He concluded that these rather varied tunnel experiences are neither an objective reality nor a metaphorical transition between states of consciousness, but are most likely hallucinatory events. C.T.K. Chari (1982) proposed a typology of tunnel experiences based on their apparent structural complexity and function. He concluded that tunnel experiences may be in part paranormally induced events subconsciously constructed to bridge the gap between the ordinary perceptual world and a pseudohallucinatory visual realm.

Ring (1982) described two types of possibly precognitive phenomena that occur in NDEs: apparent visions of the experiencer's personal future ("personal flash-forwards") and apparent previews of planetary-wide events ("prophetic visions"). He discussed the potential significance of these possibly precognitive visions, as well as various interpretations. Ring (1981) also proposed that certain NDE features – the OBE, the encounter with a "presence," the life review, and the "world of supernal beauty" – are best explained by a new model of psycho-spiritual functioning, and suggested one such model based on the existence of interpenetrating physical, astral, and causal bodies.

Moshe Spero (1981-82) compared the life review as a developmental task of the person facing death with the rabbinic conception of preparation for death through creative repentance. Though he did not allude to NDEs, he described therapeutic functions of the life review preceding death.

Researchers have also focused attention on the alleged positive personality transformations following NDEs. Bruce Greyson (1981a) reviewed the literature on suicide-inhibiting effects of NDEs and presented several psychodynamic hypotheses to account for this apparently paradoxical effect. Charles Flynn (1982) reviewed previous literature on value transformations following NDEs and presented preliminary data suggesting that NDEs enhance concern for others, religious interest, and belief in an afterlife, while they decrease fear of death, material desires, and need for approval of others.

John Alexander and Elisabeth Kubler-Ross (1982), in a study not specifically related to NDEs, documented positive changes in spirituality, as self-reported, in 244 attendees of 13 five-day workshops on

Life, Death, and Transition.

The underlying assumptions and possible directions for further near-death study were addressed in several papers. Stephen Vicchio (1981a) briefly reviewed books and articles on NDEs, OBEs, and deathbed visions, and derived seven generalizations about this literature that he suggested merited further study. Vicchio (1981b) also discussed five logical problems relevant to near-death study, and suggested five questions worthy of further study regarding NDEs.

Drab (1981a) reviewed approaches to near-death research and their underlying assumptions, and outlined a cognitive conception of the NDE as a variety of discrete altered configurations of consciousness. Craig Lundahl (1981) described near-death research as moving in three directions: scientifically derived accumulation of knowledge about near-death phenomena; examination of the question of post-mortem survival; and clinical applications of near-death study.

Sabom (1981) reported a study of 116 near-death survivors, of whom 36 claimed to have observed their physical bodies during an OBE. He demonstrated with one case a method by which the accuracy of these OBE observations may be checked, and proposed further study along these lines.

An active focus of interest in the past two years has been the correspondence between contemporary near-death reports and various religious and cultural traditions regarding deathbed experiences. Carl Becker (1981) described the central role played by NDEs in Pure Land Buddhism, the predominant Buddhist school in China. Lundahl (1981-82) described the perceived other world as revealed in Mormon literature on NDEs, and discussed the influence of the Mormon frame of reference.

Bodo Reichenbach (1982) described the view of Bô Yin Râ, early 20th-century German author, that NDEs are subjective glimpses of the afterlife, and discussed this view in terms of Bô Yin Râ's extensive observations on near-death states from a spiritual perspective. Leon Rhodes (1982) compared NDEs with descriptions of a spiritual existence found in the writings of the 18th century Swedish scientist and mystic Swedenborg.

The most numerous, and most controversial, articles in near-death study in the past two years have been those addressing various interpretations of the NDE. Several authors have argued the merits of a subjectivist versus an objectivist interpretation of the phenomenon. John Gibbs (1981) criticized Ronald Siegel's view that NDEs are only subjectively real, and presented data from the literature that cannot be explained by Siegel's "naturalistic" explanations. Ian Stevenson

(1981) also criticized Siegel's view by elucidating logical fallacies in Siegel's argument and appealing to corroborative data ignored by Siegel. Siegel (1981) in response defended his view of NDEs as only subjectively real by appeals to parsimony and by dismissing the supportive data presented by Stevenson as indistinguishable from fiction.

James Alcock (1981) briefly reviewed arguments for the interpretation of NDEs as "glimpses of the afterlife" and as "reverie in a disturbed or dying brain," and concluded that the afterlife hypothesis is based solely on faith and cannot be supported by evidence from NDEs. Mark Woodhouse (1981) outlined the subjectivist and objectivist interpretations of the NDE, and described their relationships to dualism and scientific materialism.

Several researchers have focused on psychological interpretations of near-death phenomena. Roy Kletti and Russell Noyes (1981) published the first English translation of Oskar Pfister's seminal 1930 article, in which he suggested that persons faced with death exclude reality from their perceptions and seek refuge from their danger in pleasurable fantasies. Uri Lowental (1981) suggested that NDEs are one example of regression in the face of death, and may reflect either preverbal memories or fantasies of the infant's bliss under the mother's loving protection.

Greyson (1981b) proposed several psychological interpretations of NDEs that can accommodate the phenomena's universality, paranormal component, and beneficial effects. He concluded that NDEs may serve a number of psychological functions. Harvey Irwin (1981) formulated published hypotheses about psychological functions of OBEs in terms of Henry Murray's conceptual system of manifest needs. He presented data suggesting that students reporting OBEs are more attentive to their mental processes than are other students, and have low needs for achievement and for deference.

Scott Rogo (1982) reviewed those psychological theories of OBEs and NDEs (which he considers a category of OBE) that attempt to explain the paranormal component of these experiences. He concluded that, while some of these theories have merit, they are incomplete and cannot explain the scope of the OBE as well as do theories of actual mind-body separation.

Becker (1982) reviewed the theory, popularized by Carl Sagan, that NDEs are recollections of birth memories. He concluded that birth memories have no bearing on the ontological reality of NDEs, are of questionable reality themselves, and could not explain many important aspects of the NDE.

Other researchers have considered various models for the NDE or its component parts. Daniel Carr (1981) proposed that certain NDE features — euphoria, life review, dissociation from the body, and hallucinations — are suggestive of a “limbic lobe syndrome” and may be precipitated in a near-death state by the release of beta-endorphin and related brain peptides. Carr (1982) subsequently elaborated this theory that endorphins or related peptides released under stress provoke hippocampal neuronal activity and thereby trigger a limbic lobe syndrome, providing a physiological basis for some features of NDEs.

Stephen Braude (1981) reviewed Ring’s theory that NDEs involve a holographic domain or state of mind. He concluded that holographic models, particularly as applied to NDEs, are “fundamentally incoherent and confused.”

Grosso (1981) asserted that the NDEs’ universality, paranormal component, and beneficial effects cannot be explained by current theories of the experience. He proposed a nonreductionistic Jungian approach that could explain these aspects of the phenomenon, and noted that the survival hypothesis may also accommodate these phenomena.

Finally, V. Krishnan (1981) argued that transcendental feelings and OBEs in near-death states may serve protective functions, and should not be regarded as evidence of post-mortem existence.

In summary, near-death studies during 1981-82 have covered a wide range of subjects, including new data on the incidence of NDEs in various populations, classification of NDEs and their differentiation from other states, intensive analyses of specific components of the NDE, alleged personality transformations following NDEs, underlying assumptions and possible directions for further research, cross-cultural and religious perspectives on NDEs, and various interpretations of near-death phenomena. Given the rapid expansion of interest in NDEs among the scientific community, we can expect further diversifications of near-death studies in the next couple of years.

REFERENCES

- Alcock, J.E. Pseudo-science and the soul. *Essence*, 1981 5, 65-76.
 Alexander, J.B., and Kubler-Ross, E. Changes in spirituality as reported by death-workshop attendees. *Anabiosis*, 1982, 2, 91-99.
 Becker, C.B. The centrality of near-death experiences in Chinese Pure Land Buddhism. *Anabiosis*, 1981 1, 154-171.

- Becker, C.B. The failure of Saganomics: why birth models cannot explain near-death phenomena. *Anabiosis*, 1982, this issue.
- Braude, S.E. The holographic analysis of near-death experiences: the perpetuation of some deep mistakes. *Essence*, 1981, 5, 53-63.
- Carr, D.B. Endorphins at the approach of death. *Lancet*, 1981, 1, 390.
- Carr, D.B. Pathophysiology of stress-induced limbic lobe dysfunction: a hypothesis for NDEs. *Anabiosis*, 1982, 2, 75-89.
- Chari, C.T.K. Parapsychological reflections on some tunnel experiences. *Anabiosis*, 1982, this issue.
- Drab, K.J. Unresolved problems in the study of near-death experiences: some suggestions for research and theory. *Anabiosis*, 1981a, 1, 27-43.
- Drab, K.J. The tunnel experience: reality or hallucination? *Anabiosis*, 1981b, 1, 126-152.
- Flynn, C.P. Meanings and implications of NDEr transformations: some preliminary findings and implications. *Anabiosis*, 1982, 2, 3-14.
- Gabbard, G.O., Twemlow, S.W., and Jones, F.C. Do "near-death experiences" occur only near death? *Journal of Nervous and Mental Disease*, 1981, 169, 374-377.
- Gallagher, P. Over easy: a cultural anthropologist's near-death experience. *Anabiosis*, 1982, this issue.
- Gibbs, J.C. The near-death experience: balancing Siegel's view. *American Psychologist*, 1981, 36, 1457-1458.
- Giovetti, P. Near-death and deathbed experiences: an Italian survey. *Theta*, 1982, 10(1), 10-13.
- Greyson, B. Near-death experiences and attempted suicide. *Suicide and Life-Threatening Behavior*, 1981a, 11, 10-16.
- Greyson, B. Toward a psychological explanation of near-death experiences: a response to Dr. Grosso's paper. *Anabiosis*, 1981b, 1, 88-103.
- Grosso, M. Toward an explanation of near-death phenomena. *Journal of the American Society for Psychical Research*, 1981, 75, 37-60; reprinted in *Anabiosis*, 1981, 1, 3-26.
- Irwin, H.J. The psychological function of out-of-body experiences: so who needs the out-of-body experience? *Journal of Nervous and Mental Disease*, 1981, 169, 244-248.
- Kletti, R., and Noyes, R., Jr. Mental states in mortal danger. *Essence*, 1981, 5, 5-20.
- Kohr, R.L. Near-death experience and its relationship to psi and various altered states. *Theta*, 1982, 10(3), 50-53.
- Krishnan, V. Near-death experiences: reassessment urged. *Parapsychology Review*, 1981, 12(4), 10-11.

- 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.
- Lowental, U. Dying, regression, and the death instinct. *Psychoanalytic Review*, 1981, 68, 363-370.
- Lundahl, C.R. Directions in near-death research. *Death Education*, 1981, 5, 135-142.
- Lundahl, C.R. The perceived other world in Mormon near-death experiences: a social and physical description. *Omega*, 1981-82, 12, 319-327.
- Noyes, R., Jr. The encounter with life-threatening danger: its nature and impact. *Essence*, 1981, 5, 21-32.
- Reichenbach, B. *The Book on Life Beyond* by Bô Yin Râ: death and afterlife in spiritual perspective. *Anabiosis*, 1982, 2, 37-45.
- Rhodes, L.S. The NDE enlarged by Swedenborg's vision. *Anabiosis*, 1982, 2, 15-35.
- Ring, K. Paranormal and other non-ordinary aspects of near-death experiences: implications for a new paradigm. *Essence*, 1981, 5, 33-51.
- Ring, K. Precognitive and prophetic visions in near-death experiences. *Anabiosis*, 1982, 2, 47-74.
- Ring, K., and Franklin, S. Do suicide survivors report near-death experiences? *Omega*, 1981-82, 12, 191-208.
- Rogo, D.S. Psychological models of the out-of-body experience. *Journal of Parapsychology*, 1982, 46, 29-45.
- Sabom, M.B. The near-death experience: myth or reality? A methodological approach. *Anabiosis*, 1981, 1, 44-56.
- Siegel, R.K. Reply to Stevenson. *American Psychologist*, 1981, 36, 1461-1462.
- Spero, M.H. Confronting death and the concept of the life review: the Talmudic approach. *Omega*, 1981-82, 12, 37-43.
- Stevenson, I. Comments on "The psychology of life after death." *American Psychologist*, 1981, 36, 1459-1461.
- Thomas, L.E., Cooper, P.E., and Suscovich, D.J. Incidence of near-death and intense spiritual experience in an intergenerational sample: an interpretation. *Omega*, 1982-83, 13, 35-41.
- Twemlow, S.W., Gabbard, G.O., and Coyne, L. A multivariate method for the classification of preexisting near-death conditions. *Anabiosis*, 1982, this issue.
- Twemlow, S.W., Gabbard, G.O., and Jones, F.C. The out-of-body experience: a phenomenological typology based on questionnaire responses. *American Journal of Psychiatry*, 1982, 139, 450-455.

- Vicchio, S. Near-death experiences: a critical review of the literature and some questions for further study. *Essence*, 1981a, 5, 77-89.
- Vicchio, S. Near-death experiences: some logical problems and questions for further study. *Anabiosis*, 1981b, 1, 66-87.
- Woodhouse, M.B. Near-death experiences and the mind-body problem. *Anabiosis*, 1981, 1, 57-65.

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BOOK REVIEW

Adventures in Immortality: A Look Beyond the Threshold of Death
by George Gallup, Jr. with William Proctor – McGraw Hill, \$12.95.

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Near-death researchers and others interested in the NDE phenomenon can breathe easier after reading *Adventures in Immortality*. The respected and prestigious Gallup Poll has given its imprimatur to the NDE and certified it as *real*. And as a “real thing” the NDE seems to be as prevalent as “Coke.” According to Gallup’s findings, the incidence of the NDE among Americans is actually much greater than many of us had suspected. For researchers used to hazarding conclusions based on small and non-representative samples, the data presented in Gallup’s landmark book dissolve all qualms about the existence of the NDE: never again can there be any doubt that the phenomenon is authentic, widespread, and significant. No more can it be contended by critics that the NDE is an isolated and unusual event whose importance has been exaggerated by a small band of researchers. By conducting a methodologically rigorous survey on the NDE, Gallup has established in a single work what the entire corpus of literature in near-death studies had so far failed to do: to *legitimize* it using standards acceptable to the scientific and medical community. In this sense, the publication of *Adventures in Immortality* represents the culmination of the descriptive phase of near-death studies that began with *Life After Life* (1975). And the evidence shows plainly that whatever the limitations of Moody’s book, *he was right*.

The strength of this book and its special contribution to near-death studies lie, of course, in the sheer mass of demographic information that Gallup’s organization was able to collect and analyze. The major focus of Gallup’s investigation was on American beliefs about and conceptions of life after death, but by the fourth paragraph of the book, it is clear that Gallup will recognize the role of NDEs in his work:

A special focus of this study has been the involvement of Americans in “near-death” or “verge of death” experiences. This aspect of our investiga-

tion required in-depth questionnaires calling for open-ended, detailed descriptions of any sort of unusual or “mystical” encounter people may have had when they were at death’s door (page 2).

Gallup is true to his promise. The “special focus” he refers to is really the heart of his book. Most of the fourteen chapters that comprise it are either directly concerned with statistical data bearing on NDEs or opinions about them. Other chapters consider the role of beliefs and expectations about the afterlife in shaping the NDE. Throughout there is no question who is the star of this demographic play: the NDE.

In collecting his data Gallup not only undertook the standard survey of about 1,500 adult Americans typical of his polling methods, but he carried out as well two “small scale but statistically representative surveys” of two special groups of utmost relevance to the readers of this journal: national leaders in science and medicine. All surveys were conducted between early 1980 and September, 1981, and collectively this series of polls constitutes, in Gallup’s words: “the most comprehensive national survey on beliefs about and experiences with the afterlife and near-death encounters that has ever been undertaken.”

What did Gallup find?

Of particular interest to persons involved in near-death studies are his data on the *incidence* of NDEs. According to Gallup’s figures, about one in every *seven* adult Americans has been close to death at least once. And approximately one in *twenty* adult Americans, or about 5 percent of our population, has had an NDE.

How do these fractions translate into numbers?

Given an American adult base of roughly 160 million, this means that approximately *8 million* people in the U.S. have had NDEs. And some 23 million have in their own judgment been close to death.

From the figures already given, it can be determined that about 35 percent of individuals who come close to death report NDEs. This NDE incidence rate is consistent with those already given in earlier studies by near-death researchers with much smaller samples (e.g., Ring, 1980; Sabom, 1982).

Unfortunately, the wording of Gallup’s key question to determine the incidence of NDEs is poorly phrased and leads to some difficulty in interpreting his data. Because this is such a crucial issue for near-death researchers, however, I wish to linger here for a moment to

consider this point before discussing some of Gallup's other findings. Gallup asked:

Here is a question about unusual experiences people say they have had when they have been on the verge of death or have had a 'close call' such as experiences of continued life or an awareness after death. Have you, yourself, ever been on the verge of death or had a 'close call' which involved any unusual experience at that time?

The ambiguity of the questions stems, of course, from that last "or." Phrasing the question in that way is sure to lump together persons who have been involved in near-death *incidents* with those who have had NDEs in connection with such encounters. This critical distinction between a near-death *encounter* and a near-death *experience* (which was made originally by Moody, 1977, p. 124) is thereby lost and results in unnecessary confusion. For example, since 15 percent of Gallup's national sample replied in the affirmative to this question (an additional 2 percent were not sure), Gallup uses this figure to extrapolate to the population at large and concludes that there are about 23 million people "who have had a verge-of-death or temporary death experience." But he goes on to say that of that number about "eight million have experienced some sort of mystical encounter along with the death event." Obviously, this latter figure seems to be the one to use when speaking of the NDE, and it is the one on which my own interpretation of Gallup's other data is based. This matter is muddled throughout Gallup's book, however, and therefore a critical reader must re-interpret his figures with care. Such an easily avoidable lapse in questionnaire technique is surprising from an organization as sophisticated in polling as Gallup's. It doesn't take a near-death researcher to point it out, but it makes this one regret that, apparently, no near-death researchers were consulted when this study was being planned.

If we proceed to examine what Gallup found concerning the *content* of the NDE, we again find ourselves on familiar ground. It is Moody with statistics. Like other near-death researchers, Gallup follows Moody's practice of enumerating the elements of the experience though he labels the sections of NDE pie somewhat differently. Since there is nothing new here, I will simply list below each of the features Gallup distinguishes along with its corresponding (re-interpreted) percentage among NDErs.

Element	Percent
OBE	26
Accurate visual perceptions	23

Audible sounds or voices	17
Feelings of peace, painlessness	32
Light phenomena	14
Life review	32
Being in another world	32
Encountering other beings	23
Tunnel	9
Precognitions	6

In some cases, the textual comments seem to imply that some of these figures may be underestimated (e.g., the feelings of peace and well being). Supplementing the statistical data for each category (the labels above are my paraphrases for them) are illustrative examples from respondents that will have the ring of familiarity to readers of *Anabiosis*. Some of these categories subsume facets of NDEs that have been singled out by other researchers as cardinal features of the experience. For example, under the OBE category, Gallup introduces the concept of the decision (“This apparent ability to choose to stay in the extradimensional world or to come back is a thread that runs through . . . near death accounts.”) In my own work, I devoted an entire chapter to this phenomenon (see *Life at Death*, Chapter 4).

In the voluminous material Gallup arrays throughout his book, there is much that confirms *relationships* (or the lack of them) between NDEs and other variables that have previously been reported by other near-death researchers. For instance, Gallup states (p. 11) that there is no correlation between religious orientation and NDEs. His chapters on beliefs and expectations concerning the afterlife make it clear that although there is overlap between the former and NDEs, the latter *cannot* be interpreted as a simple function of the former. Gallup’s nearly 40-page statistical appendix demonstrates once again that sociological variables (e.g. sex, race, occupation, education, religious affiliation, etc.) are largely unrelated to NDE incidence. Even some extremely tentative findings from earlier studies receive support here. One that struck me is that a higher proportion of near-death survivors subscribe to a belief in reincarnation compared to the general public (31 percent vs. 23 percent; Gallup doesn’t say whether the difference is statistically significant, however). I had reported similar *post hoc* findings in *Life at Death*.

There is of course a cornucopia of data dealing with beliefs in immortality in different segments of American society (and some interesting cross-national comparisons) and a good deal of other data too vast to summarize here, but surely of paramount interest to those of us involved with near-death studies will be the opinions and beliefs of leading members of the scientific and medical communities

surveyed, as mentioned earlier, in special polls.

Gallup's data here make it evident that professionals in these fields are very much *less* likely to profess a belief in an afterlife (32 percent for physicians and only 16 percent for scientists compared to 67 percent for a national sample). Not surprisingly, physicians and scientists are characterized by a general tendency to dismiss, disparage, or explain away the reported findings dealing with NDEs. Some of the quotations Gallup provides — and his book is studded with them — are precious: “Journalistic fiction or delusions!” “They are very sincere, but usually the descriptions are plagiarized or borrowed from others.” “Most of these have not really been ‘near-death’ . . .” Although some views are certainly sympathetic or at least open-minded, the typical retort, to paraphrase Henry Ford, seems to be close to “NDEs are bunk.” The explanations for NDEs given by these physicians and scientists tend to reflect this general bias, but Gallup toward the close of his book quotes with apparent approval the remark of an authority on death and dying to the effect that natural explanations (of NDEs) are really as speculative as religious ones. In any case, Gallup's findings tend to buttress my feeling that for those of us interested in getting a hearing for NDEs in professional settings, there is still much more for us to do. Gallup's book, though not likely in itself to erode those resistances, will certainly be helpful to us on this front.

Altogether, then, Gallup has written an extremely useful and important book — for the public at large as well as for those of us specifically concerned with near-death studies. Despite my high regard for Gallup's contribution, I feel that I must close this review with a few cautionary comments directed to the professional reader. First, Gallup's book is not intended to be a scholarly one; it is written for the general public and though it is indeed engrossing and reads easily, the book lacks the usual appurtenances of academic publications. Second, consistent with the tone of the book and with popular polling techniques, this is not a book that probes very deeply into the issues that NDEs raise despite its surface concern with religious traditions and philosophical inquiry; its chief virtue is its data and not its reflections on them. Finally, it is extremely surprising that there is virtually no explicit reference to any of the literature in the field of near-death studies despite the fact that the author is plainly aware of it. Even Moody is mentioned only in passing in the quotations of others. Perhaps Gallup did not want to associate himself with this work in order to preserve his “neutral” status as a pollster, but it is obvious that mere citation of other research does

not imply endorsement of it. At all events, this omission seems as puzzling as it is unfortunate.

These reservations notwithstanding, I can still highly recommend *Adventures in Immortality* to everyone interested in near-death studies who wishes to acquire a firmer grasp on the sociological and religious dimensions of the NDE. An indispensable reference, Gallup's book is sure to become a classic of its genre.

REFERENCES

- Moody, R. *Life After Life*. Atlanta: Mockingbird Press, 1975.
Moody, R. *Reflections on Life After Life*. Atlanta: Mockingbird Press, 1977.
Ring, K. *Life at Death*. New York: Coward, McCann and Geoghegan, 1980.
Sabom, M. *Recollections of Death*. New York: Harper and Row, 1982.

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