

The Reality of Death Experiences

A Personal Perspective

ERNST A. RODIN, M.D.¹

In recent years, there has been a marked increase in reports of the subjective experience of individuals in severe life-threatening circumstances. These have been used to suggest that scientific facts are now in agreement with religious beliefs as to the survival of the personality after physical death. This paper presents a personal death experience viewed by the author as a "subjective reality." This is contrasted with "shared subjective reality," *i.e.*, commonly held beliefs among groups of individuals which do not necessarily lend themselves to scientific verification and scientifically derived objective reality. Subjectively real death experiences are regarded as corollary to a toxic psychosis. The content of the psychosis, which is not under voluntary control, determines the subjective experience of having entered either heaven or hell.

In recent years, there has been a considerable increase in publications dealing with the mental experiences of individuals during severe life-threatening circumstances (7, 10, 14, 17). Since these experiences tend to be mostly pleasurable and are frequently associated with a feeling of leaving or having left the body (out-of-body experiences) and with meeting either deceased relatives or religious figures, the individuals feel that life on earth has terminated, and that one has died and is now in the process of entering the afterlife. A collection of these experiences was published by Moody (13) under the title *Life after Life*.² This book and the work of Kübler-Ross (12) have been portrayed by the lay press as scientific evidence for the existence of an afterlife. Although Vaisrub (21) took issue with this interpretation in an editorial in the *Archives of Internal Medicine*, there has been no scientific document as yet that has dealt in detail with the issues involved.

A Personal Death Experience

During my residency, while in excellent physical health, a routine chest X-ray revealed a round non-calcified lesion in the upper lobe of my right lung. I chanced to see the X-ray report which not only described the lesion, but ended with the words "probably

metastatic." Since the institution was a respected teaching hospital, the last two words could not be taken lightly. I therefore agreed immediately with the internist that exploratory surgery was indicated to determine the exact nature of the lesion, with the differential diagnosis lying mainly between a tuberculoma and a metastatic process. My mental attitude toward the future was in essence as follows: if it is a tuberculoma, I have an excellent chance of recovery and I am basically facing a nuisance rather than tragedy; if it is a metastasis, I do not want to survive the operation because I do not want to be a pain-ridden, slowly wasting burden to my wife and myself for the next 3 to 6 months. I remember lying down on the operating table, the needle for the anesthetic being placed into my arm, and directing a last request to the Deity: "If it is a metastasis, please let me stay on the table." The next thing I knew was a feeling of tremendous bliss accompanied by the knowledge, "It was a metastasis; I have died and now I am free." There were no other sensory experiences, only absolute certainty: "It's over and it's wonderful." There was no shadow of a doubt that this was, indeed, death rather than just near death. The next event was my utter shock and dismay at finding myself in a hospital bed with my wife standing over me. All I could say was, "Let me die, let me die." She was horrified by the request, having of course had no inkling of what I had felt at some point during surgery, or more probably on recovery from anesthesia.

Although I have had subsequent general anesthetics

¹ Department of Neurology, Lafayette Clinic, 951 E. Lafayette, Detroit, Michigan 48207.

² Another similar book by Maurice Rawlings has just been published under the title *Beyond Death's Door*.

associated with surgical procedures to correct sport-connected injuries, this experience was unique. It was one of the most intense and happiest moments of my entire life which a quarter of a century has not erased or diminished. On this basis, I have no doubt that the experiences reported in the literature are real and can, as such, have a profound influence on an individual's outlook on the meaning of life and death.

The Death Experience and Subjective Reality

In retrospect, the experience by current medical standards must be classified as having been delusional. I had not died, yet for an unknown period of time I held a fixed belief that this had indeed occurred. The phrase "unknown period of time" is important because eternity can come about in two ways: as a subjective sensation of time standing still, as reported at times with LSD ingestion (2), or as time being nonexistent, which happened in my own situation. The awareness of a sequence of events, which allows comparison of before with after, was absent. There was only the now—the eternal present.

This experience may be regarded as illustrating subjective reality. Objective reality, in contrast, can be verified by an independent observer measuring events as they occur. Our limited sensory systems, even when aided by the most advanced technologies, will always provide us with only a partial view of nature. In our daily lives, we are not concerned about ultimate reality or truth, and the words "objective reality" are used in their limited meaning as "free from or independent of personal feelings, opinions, or prejudices."

In view of the limitations of human information, the term "shared subjective reality" may be useful for experiences and opinions common to large numbers of mankind, even though they conflict with the objective reality. Scientific evidence about the nature of reality is not directly integrated into the activities of daily living. Shared subjective reality and individual subjective reality (*i.e.*, experience unique to this individual at this moment in time and not perceived by bystanders) dominate our daily waking lives. If our individual data processing system, however, begins to differ from that of others through drugs, illness, or injury, our subjective experiences will no longer be similar to those of others and we are identified as clinically disordered. The fact that our experiences are as real to us as they are fancy to others is irrelevant.

Dream Sequelae of the Death Experience

The subjective sense of reality is determined, in part, by the vividness or intensity of a given experience regardless of its source, *i.e.*, intrinsic or extrinsic. The brevity and lack of vividness of many dreams contrib-

ute to their being identified by the dreamer as dreams rather than as events having taken place in the external world. However, one's dreams as a rule are regarded only retrospectively as dreams. While in process, they can fulfill the usual subjective criteria of waking reality. As a result of the death experience, I began to examine my own dreams and to devise tests to be applied during the dreaming state which would allow me to determine whether I was in fact awake or asleep. Since I dream in color rather than black and white, this particular guide for reality testing was not available. However, during the period when I was examining my dreams, they themselves changed, and the question which ordinarily does not occur, namely, "Is this in fact a dream?" did arise on a number of occasions during the dream experience. The simplest and most common way to solve the question, "Am I dreaming?" is to look at one's surroundings. One of the characteristics of dream consciousness is its discontinuous nature. Events within the dream are frequently out of context, and there are significant gaps in memory. As a neurologist, this awareness of impaired memory led me to conclude during the dream that, "I either have a serious organic mental syndrome or I am dreaming." When this thought occurred, I underwent a waking up experience, convincing myself that my CNS was still intact and I had merely dreamed. What I did not realize was that the experience of having awakened was merely a continuation of the dream, proved by the genuine awakening in the morning with total recall of the dream-within-a-dream. It was not possible to distinguish between dream and waking life at the time of the dream. This seems to apply as well to out-of-body experiences (OOBE). Davis-Cambridge (5) reported one such experience occurring while lying awake in bed and concluded that the experience was too vivid to have been a dream. The same point is made repeatedly in Moody's book (13). Vividness, however, does not allow a definitive differentiation between events taking place in the internal *vs.* the external world.

OOBE and Altered States of Consciousness

A review of OOBE reports suggests that the vast majority occurred during altered states of consciousness. I could find only two reports in the literature dealing with electroencephalographic findings during attempts at inducing an OOBE. These are single case reports by Tart (19, 20) of findings during several nocturnal sleep recordings. The subjects had been asked to try to awaken immediately after the experience and to report its contents. In the first instance, the EEG showed alphoid activity during OOBEs. This was 1 to 1½ cycles per second slower than the normal alpha rhythm. It was always preceded by a recognized

sleep state and terminated with a sudden body movement. Tart stated that this EEG pattern had not previously been described. Further, it could not be classified by one of the country's most outstanding sleep researchers "into any of the known sleep stages, nor could they even be classified unambiguously as waking or drowsy patterns" (19, p. 21). The second subject was in stage I sleep during the experience and showed associated slow rather than rapid eye movements.

Inasmuch as objective differentiation of the waking from the drowsy or sleep state can currently be made only by the EEG, a short review of the known sleep stages and their associated mental events is appropriate. In stage I sleep, the resting, awake, eyes-closed alpha rhythm is replaced by a low voltage pattern with interspersed theta activity. It may or may not be associated with slow rolling eye movements. This is usually accompanied by a shift of thinking patterns from logical verbal sequences to visual imagery or perceptions of floating or drifting—the hypnagogic state. If allowed to sleep, the person then enters stage II, characterized by V waves and spindles, thereafter stage III (slow waves with K complexes), and eventually stage IV, the delta phase. During stages II to IV, there is usually no dream recall on awakening, although it may occur at times. Somnambulistic activity or night terrors—as opposed to nightmares—have been reported to occur in stages III and IV. If one obtains a nocturnal sleep recording rather than only a daytime nap, stage IV sleep is subsequently followed by rapid eye movement (REM), "paradoxical" or "activated" sleep which alternates with stages II to IV or even alpha patterns and, toward morning, blends more and more with alpha until awakening occurs. Blake *et al.* (4) described these phases in detail in 1939 but termed what is now regarded as REM sleep the "null" stage. Its transition to alpha is shown in the *Atlas of Electroencephalography* by Gibbs and Gibbs (9), and it corresponds to the alphoid state mentioned by Tart as having occurred in the first subject. Aserinsky and Kleitman (1) demonstrated in 1955 that the null stage was frequently accompanied by rapid eye movements and associated dream recall. Dement (6), also working initially in Kleitman's laboratory, has subsequently noted that dream recall is not only a function of REM sleep per se, but occurs more commonly in the morning REM periods rather than those that follow slow wave sleep in the earlier part of the night. Although he mentioned this particular finding only in passing, it is important in this context because the REM periods in the morning hours tend to be separated more commonly by alpha as well as by stage I to III sleep, rather than stage IV. The mental phenomena which have been called hypnopompic occur at that time.

The association of REM sleep with dreaming has been widely disseminated, but the fact that the EEG can show the low voltage desynchronized pattern characteristic of REM without associated eye movements is known only to specialists. Furthermore, it is known that activated sleep is heralded initially not by rapid eye movements, but by loss of muscle tone recorded from the extrinsic laryngeal muscles. In addition, it is important to point out that a mental event during sleep is perceived either as a dream or a thought not only by its content but also by the method of awakening. As Shapiro *et al.* (18) have shown, gradual awakening from a REM period is more likely to result in reports of "having been thinking" rather than "having dreamed," whereas the opposite is true for sudden awakening. Finally, it is a common observation in EEG laboratories that individuals will fall asleep during the tracing but subsequently vigorously deny having slept. This occurs also in some patients claiming to suffer from insomnia. They are simply not aware of having slept because the usual subjective concomitants of arousal were not present, or they had not experienced a drifting level of consciousness. These points, familiar to the professional electroencephalographer, need to be stressed because they point out the shortcomings of the scientific OOB literature. Future studies dealing with paranormal experiences encountered by people lying in their beds or otherwise resting should include not only the recording of the EEG and eye movements, but also of submental musculature in order to obtain a finer definition of the person's objective level of consciousness, since subjective reports have proven to be notoriously unreliable.

The Physiology of Dying

Death experiences may or may not be accompanied by an OOB, but they occur mainly in altered states of consciousness and usually in situations where the person finds himself in mortal danger. At this point, it is useful to recapitulate briefly the physiological events associated with the process of dying. It is well established that there is no instant of death, but only a gradual process of dying. Different organs decay at different rates, depending on their state of health or illness at time of death and on the differential rate of susceptibility to lack of oxygen. A basically healthy heart can produce some type of electrical activity for over 20 minutes after the cessation of respiration. By that time, of course, it would be seriously damaged and unusable for transplants, but it would not be, strictly speaking, dead. Regardless of which injury or illness originally caused the chain of events called death, the final common mechanism is anoxia involving the brain. During terminal anoxia—which inevi-

tably happens—neurons start degenerating in the brain in different locations at various speeds, depending upon their individual need for oxygen. During this period of oxygen deprivation, certain structures of the brain, such as the hippocampus, may show epileptic seizure activity. These seizure discharges do not reveal themselves in convulsive movements of the body, and they cannot be detected by ordinary scalp electroencephalography. They require electrodes within the hippocampus itself, because they do not propagate to distant structures which would be revealed by an electrical seizure discharge in the EEG, or even as a clinical convulsion. If there is no further supply of oxygen, neuronal activity stops and the EEG becomes isoelectric. If the patient is maintained on a respirator for a few days beyond that point, it can be seen at autopsy that the brain has disintegrated, *e.g.*, lost its cellular structure and begun to autolyze (11).

What are the mental events likely to accompany the dying process? Unless death is instantaneous, *e.g.*, a bullet through the reticular formation of the brainstem, the final common pathway is anoxia. The mental effects of anoxia are well known and readily reproducible in the laboratory. They differ depending upon the speed with which anoxia occurs, but eventually there is unconsciousness. Man is capable only in retrospect of realizing that he has been unconscious. We cannot directly experience unconsciousness. This inability creates the paradox that we are indeed immortal, but only in terms of our own subjective experience of ourselves. Although total unconsciousness, as the final stage of dying, is therefore irrelevant, the mental events preceding it are of major importance and, within limits, predictable. It is known that the earliest effect of hypoxia consists of an increased feeling of well being and a sense of power. This is accompanied by a decrease and subsequent loss of critical judgment. Just as in dream consciousness, the patently false is experienced as objectively true. As anoxia persists, delusions and hallucinations occur until, finally, complete unconsciousness supervenes. The loss of oxygen supply, coupled with an increase of CO₂ and nitrogen, induces a toxic psychosis during the process of dying. It can be assumed that what is important for the individual in his dying moments is the mental content of this psychosis, *i.e.*, the visions that are being experienced and the beliefs held about them. Despite my current awareness that these visions and beliefs will be utterly false, I know that I will accept them as full truth when the time comes. This is an unsolvable dilemma. If the content of the final psychosis is pleasant, the individual who knows that he is dying is likely to accept it as his version of heaven. If it is terrifying and/or painful, one does not require medieval devils to realize that one has entered hell. There is no way of

knowing whether our individual brain in its last moments will send us to celestial spheres or into the biblical bottomless pit. We do know, however, from our epileptic patients that the mental content experienced during temporal lobe seizures is dependent upon the life experiences of the individual. It does not arise *de novo*, but is tied to the patient's fears, hopes, and neurotic preoccupations (15). It seems likely that a devout Buddhist, for instance, who has spent all of his life in a lamasery, will experience his sense of relief—resulting from lack of oxygen—by seeing the primordial light instead of meeting Jesus and/or the Virgin Mary. The Christian, on the other hand, may well find himself surrounded by the saints or other "helpers" if he is lucky, or some form of hellish creatures if he is not.

For Western man, it is even possible that he may undergo a last judgment. Throughout our lives we are subjected to a subtle but steady conditioning process which paves the way for expectations, regardless of whether or not we consciously believe in them. It is therefore quite possible that we may experience such an event. The dying individual, however, acts as his own judge, jury, accuser, prosecutor, defense attorney, and witness. He or she alone renders the final verdict of guilty or not guilty. Inasmuch as the individual is no longer in voluntary control over his mental processes, the outcome of the verdict will be quite unpredictable.

Western man is reality oriented. From the cradle to the grave he has been conditioned to experience himself and the events around him as real. He is therefore likely to regard his last thoughts as equally real. Eastern philosophy has recognized this impasse and insists that there is no reality; everything is appearance only, all is *maya*. With this type of lifelong conditioning, the Buddhist might be able to regard his last experiences also as *maya*, thereby accepting them with equanimity (8).

OOBE and Parapsychology

I have deliberately not entered into a discussion of the parapsychological aspects of the OOBE phenomenon, as this would go beyond the scope of my report. Remarkable case reports by reliable individuals exist, as well as statistical evaluation of some of the data showing that chance alone cannot explain the observed phenomena. There is, however, no consensus as to the nature of the underlying mechanisms, and the diversity of opinions is quite well documented in Rogo's anthology, *Mind Beyond the Body* (16), and Beloff's historical overview (3) in the *Handbook of Parapsychology*. Further progress in this field would require an instrument allowing us to register not only the electrical activity of the brain, but also that as yet

unknown form of energy which may give rise to mentation. If thought processes could be displayed on a video monitor or some other device, independent observers could note the mental functions during physical decay just as one can look at an EKG or EEG, and one would have taken a major step from subjective to objective reality.

References

1. Aserinsky, E., and Kleitman, N. Two types of ocular motility occurring in sleep. *J. Appl. Physiol.*, 8: 1-10, 1955.
2. Becker, A. M. Zur Psychopathologie der Lysergsaureäthylamidwirkung. *Wien. Z. Nerv. Heilk.*, 2: 402-439, 1949.
3. Beloff, J. Historical overview. In Wolman, B. B., Ed., *Handbook of Parapsychology*, pp. 3-24. Van Nostrand Reinhold, New York, 1977.
4. Blake, H., Gerard, R. W., and Kleitman, N. Factors influencing brain potentials during sleep. *J. Neurophysiol.*, 2: 48-60, 1939.
5. Davis-Cambridge, J. Parapsychology: A new perspective on dying? *Suicide Life Threat. Behav.*, 6: 179-189, 1976.
6. Dement, W., and Kleitman, N. The relation of eye movements during sleep to dream activity: An objective method for the study of dreaming. *J. Exp. Psychol.*, 53: 339-346, 1957.
7. Editorial. The experience of dying. *Lancet*, 1: 1347-1348, 1978.
8. Evans-Wentz, W. Y. *The Tibetan Book of the Dead*, p. 249. Oxford University Press, New York, 1960.
9. Gibbs, F. A., and Gibbs, E. L. *Atlas of Electroencephalography: Vol. 1, Methodology and Controls*, p. 263. Addison-Wesley, Cambridge, Mass., 1950.
10. Hart, H. Scientific survival research. *Int. J. Parapsychology*, 9: 43-52, 1966.
11. Kramer, W. From reanimation to deanimation. *Acta Neurol. Scand.*, 39: 139-153, 1963.
12. Kübler-Ross, E. *Death: The Final Stage of Growth*. Prentice-Hall, Englewood Cliffs, N.J., 1975.
13. Moody, R. A. *Life After Life*. Stackpole Books, Harrisburg, Pa., 1976.
14. Noyes, E., and Kletti, R. Depersonalization in the face of life-threatening danger: A description. *Psychiatry*, 39: 19-27, 1976.
15. Rodin, E. A., Mulder, D. W., Faucett, R. L., and Bickford, R. G. Psychologic factors in convulsive disorders of focal origin. *Arch. Neurol. Psychiatry*, 74: 365-374, 1955.
16. Rogo, D. S. *Mind Beyond the Body*. Penguin Books, New York, 1978.
17. Sabom, M. B., and Kreutziger, S. Near-death experiences. *N. Engl. J. Med.*, 297: 1071, 1977.
18. Shapiro, A., Goodenough, D. R., and Gryler, R. B. Dream recall as a function of method of awakening. *Psychosom. Med.*, 25: 174-180, 1963.
19. Tart, C. T. A psychophysiological study of out-of-the-body experiences in a selected subject. *J. Soc. Psychical Res.*, 62: 3-27, 1968.
20. Tart, C. T. A second psychophysiological study of out-of-the-body experiences in a gifted subject. *Parapsychology*, 9: 251-258, 1967.
21. Vaisrub, S. Afterthoughts on afterlife. *Arch. Intern. Med.*, 137: 150, 1977.