

Ketamine and the Near-Death Experience¹

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ABSTRACT

The phenomenology that typically accompanies the near-death experience (NDE) is also sometimes a by-product of ketamine, an anesthetic used in both medical and recreational settings. Some surveys indicate that NDE-type ketamine hallucinations are quite common. The close parallels between some ketamine experiences and the NDE can be explained by a variety of conceptual models, including these: the NDE is a similar form of chemically induced hallucination; ketamine induces objective out-of-body experiences (OBEs); ketamine-linked NDEs are artifacts produced by expectancy and the hospital setting; or the NDE is an archetypal experience catalyzed under a variety of different situations. Each of these theories has explanatory advantages and disadvantages.

INTRODUCTION

The following experience was reported by a hospital patient who had recently undergone surgery:

My mind left my body and apparently went to what some describe as the "second state." I felt I was in a huge, well-lit room, in front of a massive throne draped in lush velvet. I saw nothing else but felt the presence of higher intelligences tapping my mind of every experience and impression I had gathered. I begged to be released, to return to my body. It was terrifying. Finally, I blacked out and slowly came to in the recovery room ("Ketamine and Back," 1978, p. 8).

Some elements of this type of experience are commonly reported by people who have had close brushes with death. The above quotation seems to be very similar to the type of experiences that have been collected by Raymond Moody (1975), Kenneth Ring (1980), Michael Sabom (1982), and other researchers interested in the mystery posed by the near-death experience (NDE). The amazing feature of this account, however, is that it was not contributed by someone who

had allegedly died and come back. The reporter was, in fact, in little danger of death at all. He was undergoing minor surgery and was suffering a hallucination accompanying his emergence from ketamine, a commonly used general anesthetic.

THE NATURE AND CONTENT OF KETAMINE HALLUCINATIONS²

Ketamine is an arylcycloalkylamine often given to children or the elderly as a general anesthetic or analgesic, depending on the dose. The drug was first synthesized in 1962 by Calvin Stevens at the Parke-Davis laboratories in Ann Arbor, Michigan, but was not reported in the literature until 1965 (McCarthy, 1981). It is chemically related to the better known and notorious drug phencyclidine (commonly called PCP or “angel dust”) and was developed when it became clear that the latter was impractical for use as an anesthetic because of its side effects. Ketamine is most often used intravenously or intermuscularly as a general anesthetic for patients who cannot risk cardiovascular depression during surgery. When taken recreationally in lower doses, it induces a short psychedelic “trip” resembling that induced by lysergic acid diethylamide (LSD). Similar mind-expanding and hallucinogenic effects are sometimes reported by patients recovering from the drug when it is used as a general anesthetic. A report issued from Parke-Davis acknowledged that these emergence reactions occur in 12% of those to whom it is administered (cited in Grinspoon and Bakalar, 1979; see also Domino, Chodoff, and Corssen, 1965).

It is the curious and sometimes consistent nature of these hallucinations that have a bearing on the study of the NDE. Ketamine is classified as a dissociative anesthetic in that the patient or user reports being detached from his body and environment when under the influence of the drug. The original Parke-Davis report only admitted that the drug induces psychological effects varying in severity from “pleasant dream-like states” to “vivid images, hallucinations, and emergent delirium.” However, many experts on hallucinogenic drugs have specifically noted that these images closely match descriptions of out-of-body experiences (OBEs) and NDEs. Lester Grinspoon and James B. Bakalar (1979) at Harvard University have written that the dissociative experience induced by ketamine somewhat resembles LSD, “with a tendency toward a sense of disconnection from the surroundings: floating, suspension in outer space, becoming a disembodied mind or soul, dying and going to another world. . . .

The dissociative experiences often seem so genuine that afterward users are not sure that they have not actually left their bodies" (p. 34).

QUALITATIVE SIMILARITIES BETWEEN THE NDE AND KETAMINE HALLUCINATIONS

The similarities between *some* NDEs and *some* ketamine trips are quite striking. Cited below, for example, are four experiential accounts that describe typical NDE phenomenology. The first is a classic NDE and is matched to a ketamine experience that displays similar features. The third case is also drawn from the NDE literature and is matched with a ketamine experience reported by a medical doctor. Several common themes are shared by all four of the following accounts. I have freely edited these narratives and have summarized portions of them in order to accentuate the similarities.

In the first case, a woman reported how, while in a hospital,

I found myself, quite suddenly, existing in a dark gray mist. I sensed that I had died. I had died and yet I still existed. A dazzling brightness infiltrated the mist and, ultimately, cradled me in a way that I cannot describe. The awareness of my physical body left me. I seemed to exist as consciousness only, pure and free-floating. My thoughts? I had none. But feelings my cup did, indeed, run over. Bliss . . . rapture . . . joy . . . ecstasy, all of the above, and in such measure that it cannot be compared or understood. As the light continued to surround me and engulf me, my consciousness expanded and admitted more and more of what the light embraces; peace and unconditional love . . . (Smith, 1983, pp. 7, 10).

At that point in the experience the woman found herself in a pastoral setting, met a guide who counseled her, and then found herself back in the hospital.

In the second case, a recreational ketamine experience, a young man reported how he underwent an "NDE" at home:

At one point the world disappeared. I was no longer in my body. I didn't have a body. . . . Then I reached a point at which I felt ready to die. It wasn't a question of choice, it was just a wave that carried me higher and higher, at the same time that I was having what in my normal state I would call a horror of death. It became obvious to me that it was not at all what I had anticipated death to be, except, it was death, that something was dying. I reached a point which I gave it all away. I just yielded, and then I entered a space in which there aren't any words. The words that have been used have been used a thousand times—starting with Buddha. I mean, at-one-with-the-universe, recognizing-your-Godhead—all those words I later used to explore what I had experienced. The feeling

was that I was "home." . . . It was a bliss state of a kind I never experienced before (Stafford, 1983).

The young man wanted to prolong the state indefinitely but gradually returned to his body against his will.

The third case (MacMillan and Brown, 1971) is an NDE reported by a cardiac-arrest victim. A middle-aged man reported to his doctors how he had lost consciousness and then found himself staring at his own body. Next he found himself catapulted out into space and floating in a bright light. He could not locate any body attached to his consciousness and "awoke" back in his body when he felt a disturbance at his side.

The fourth case is a ketamine reaction reported by a doctor undergoing surgery. He reported he heard odd buzzing sounds in his ears. He fell unconscious, but then "gradually I realized my mind existed and I could think. I had no consciousness of existing in a body; I was mind suspended in space." The doctor then found himself floating in a void. "I was not afraid," he reported, "I was more curious." He thought, "This is death. I am a soul, and I am going to wherever souls go" (Johnstone, 1973, pp. 460-461). The doctor became confused at that point and gradually became aware that he was back in the hospital, inhabiting his familiar body.

Leaving the body, entering into a oneness with the universe, journeying through space to another world, and reluctantly reentering the body are all themes that are shared in one way or another in these four reports; yet they have been drawn from disparate sources. The first case (Smith, 1983) was reported by a woman who had nearly died during childbirth. The matching ketamine case (Stafford, 1983) was reported by a young musician who was making recreational use of ketamine. The third case has been summarized from the now classic report by R.L. MacMillan and K.W.G. Brown (1971) on an NDE reported by a cardiac-arrest patient in Canada. That report, it might be noted, was one of the first to bring scientific attention to the NDE. The last case was reported by Robert Johnstone (1969), a physician at the University of Pennsylvania, and describes what he experienced after being given ketamine as an anesthetic.

SURVEY DATA

What is so peculiar about ketamine is just how common these NDE-type hallucinations appear to be. This may result from the way the drug affects the central nervous system. Ketamine seems to

suppress areas of the brain that regulate the reception and relaying of sensory data. At the same time it apparently stimulates other areas of the brain. When the anesthetic begins to wear off, or when the dose is too small to induce unconsciousness, the patient or user may well experience being "aware" but dissociated from his or her body and physical environment. The central nervous system simply may not be recording information from such sources. Such a state, which is similar to that induced by sensory deprivation, might well be experienced as an NDE or OBE. The idea that ketamine may produce a chemical analogue of sensory deprivation has been specifically suggested by Barbara Collier (1972) as a result of her own studies of ketamine in Great Britain.

Collier noted in her report (1972) that ketamine-related hallucinations can manifest in a variety of forms, including color distortion, seeing figures standing by one's bed, floating faces, and so on. But the "core" of the ketamine experience, according to her rather large data base, are sensations very reminiscent of OBEs and NDEs. Her first project, for instance, entailed monitoring the reactions of 90 patients given ketamine before surgery. Twelve percent of them had hallucinations of "floating" while recovering, and several of the patients later told Collier that they felt they had "died" and had been separated from their bodies. One patient even reported that he had ascended to heaven while undergoing surgery, had confronted God, and believed himself reincarnated when he found himself back in the body! The memory of the experience was so vivid that he retained a perfect recollection of the hallucination even after six months.

A specific connection between ketamine hallucinations and what is now called the NDE became even more apparent when Collier conducted a follow-up study on eleven patients undergoing ketamine-induced anesthesia. Ten of the patients reported they had found themselves floating away from the body, of which nine specifically experienced the mind *withdrawing* from the body. Three patients went on to report how they had looked back at their own physical bodies and had later experienced reentering them. Two of the eleven patients also reported leaving the recovery room while disembodied and flying out into space through some sort of void.

POSSIBLE DIFFERENCES BETWEEN NDEs AND KETAMINE HALLUCINATIONS

While there are numerous and important parallels between the

NDE and some ketamine hallucinations and emergence reactions, there are a few differences that should be noted. The first is the affective component that typifies both experiences. People undergoing NDEs tend to report a sense of peace and well-being while out of body. Ring (1980) found this component present in 59% of 49 cases he studied. People undergoing ketamine hallucinations, especially if they are unprepared for what to expect, are often very frightened by their experiences, as typified by the account ("Ketamine and Back," 1978) that opened this paper. Johnstone (1973), too, had an out-of-body experience and reentry marked by panic. Since ketamine acts in part as a stimulus on the central nervous system, anxiety reactions to ketamine-linked NDE phenomenology may be physiologically linked and not a psychological component of the experience. Recreational users commonly report sensations of ecstasy while under the drug's influence (Moore and Alltounian, 1978), as typified by the second case (Stafford, 1983) reported above. Obviously setting and expectancy are components that influence one's affective reaction to ketamine. People who undergo NDEs also often report that they inhabited a "second" body during their NDE (Green and Friedman, 1983), while it seems that ketamine users and patients more often find themselves simply disembodied.³

It should be noted, however, that any qualitative differences between ketamine hallucinations and NDEs are very speculative. Very few quantitative data are available on the nature and specific phenomenology of ketamine hallucinations, so even the minor differences noted here may be based on artifactual or on incomplete information.

EXPLANATORY MODELS

Merely noting that ketamine-induced hallucinations and NDE accounts are similar really does not imply anything specific or ontological about the nature of or the possible relationship between the two sets of experiences. Researchers familiar with the drug have offered a wide range of speculation about the possible nexus. John Lilly (1978), who has self-experimented with the drug, believes that ketamine is virtually a chemical road to the OBE. Timothy Leary (1983) has typified the ketamine trip as being a method by which one can explore death while remaining alive. On the other side of the theoretical spectrum, Dr. Ronald Siegel (1980)—who has conducted clinical research into the ketamine experience—takes a reductionistic approach to the similarities between NDEs and some

ketamine hallucinations. He has posited that both experiences are hallucinations resulting from neurophysiological activity and have no metaphysical reality.

So just what is the precise connection between this unusual drug and the NDE? There are actually four very different models that can account for the resemblances between ketamine hallucinations and NDEs. They will be discussed in turn.

The first (and most obvious) way of explaining the similarities is to adopt Siegel's (1980) view that both experiences—the NDE and ketamine reactions—are similar, organically based dissociative hallucinations. Siegel has shown in his many reports that the various components of the NDE can be found spread piecemeal within the literature on drug-induced hallucinations—especially those induced by LSD, mescaline, and ketamine. That suggests to him that NDEs are really nothing more than by-products of brain chemistry. A related theory has been proposed by Grinspoon and Bakalar (1979), who have suggested that the brain may synthesize a chemical similar to ketamine in times of severe stress. When the chemical is reabsorbed or processed by the brain, they suggested, the victim may experience the delusion of leaving the body. The problem with that type of theory is that it cannot account for the predictable and cross-cultural patterns to which the NDE adheres and the inconsistency within the content of ketamine reactions. NDE-type hallucinations are not an invariable outcome of ketamine administration. They represent only one subtype within a wide range of hallucinatory reactions to the drug. Many patients have no emergence reactions at all. People who undergo NDEs tend to universally describe similar experiences.

The above theory may seem totally adequate and self-evident. But there is also a very different way of interpreting the relationship between ketamine and the NDE. Many types of anesthetics seem to induce OBEs, especially nitrous oxide and ether (Crookall, 1961, 1964). It may be that ketamine works on the body in such a way as to *allow* a very genuine OBE to take place. It is very hard to dismiss that idea, especially if one accepts the "reality" (i.e., the objective and paranormal nature) of the OBE and NDE. One response to this theory, however, would be to argue that the theory is much too limited and internally inconsistent. Since ketamine is intensely psychedelic and hallucinogenic, it would be illogical and senseless to posit that OBE sensations are "genuine" (i.e., objective) while other types of ketamine-induced hallucinations (such as seeing apparitions of living people or floating faces) are delusory (i.e., subjective).

A third theory would be that ketamine, in and by itself, doesn't really produce NDE hallucinations at all. We might be seeing an artifact produced by the hospital setting from which these peculiar hallucinations are so often reported. If one surveys the literature on ketamine use, it will become apparent that most NDE-type ketamine experiences have been reported from recovering hospital patients who received the drug as an anesthetic. Reports written by people who have made purely recreational use of the drug do not, in my opinion, often seem to report NDE-type experiences. Now, the qualitative difference between these two sets of data may result from the much larger doses administered medically than normally used recreationally.⁴ But it could also indicate something psychologically more complex. Perhaps, it might be suggested, ketamine really only produces a vague sense of being disembodied. A patient recovering from surgery and ketamine anesthesia might naturally be concerned with such issues as death and what lies beyond. That preoccupation might then influence and modify any ketamine hallucinations to which he or she would be normally prone. The patient might misinterpret typical ketamine-linked floating sensations as the release of the soul from the body, and then build up an elaborate fantasy around them. Many writers on ketamine have specifically noted that the interpretation of the ketamine experience is strongly influenced by the setting under which the drug is taken.

A final theory might be that we are witnessing the emergence of a chemically induced archetypal experience. Stanislav Grof and Joan Halifax (1977) have suggested that the NDE is an encapsulated archetypal experience coded into the human brain, which is activated under certain very specific conditions. Perhaps ketamine, like the stress produced by a close brush with death, catalyzes the emergence of the archetypal complex. That idea is also similar to the views of Michael Grosso (1983), who has suggested that the NDE is an archetypal experience that can be induced under a variety of conditions. The problem with this theory is that it could be called a "non-theory," since it explains one unknown by another (i.e., worldwide archetypes).

At the present time all of these explanations may well be equally viable. Each has its advantages and disadvantages when it comes to explaining the data presented in this paper. How one wishes to interpret the ketamine-NDE relationship is really a matter of choice or individual bias rather than logic and analysis. The main point raised by the study of ketamine-related NDE phenomenology, how-

ever, is that the core meaning of the NDE is obviously not as simple and clear-cut as some researchers have tried to make it. It no longer seems very practical to say that, of and by themselves, NDEs are "proof" of life after death. The fact that ketamine-induced hallucinations resemble NDEs in so many details casts at least some doubt on any simplistic metaphysical model of the NDE.

The data presented here are meant to serve only as food for thought. Just which school of thought about the meaning of the NDE will be best nourished by them is, at the present time, maddeningly unknown.

NOTES

1. This paper has been freely adapted and recast from an article that originally appeared in *Fate* magazine. I would also like to thank Dr. Ronald Siegel for kindly answering some of my questions about ketamine and directing me to some of the literature cited in this report.
2. The term *hallucination* as used here is not meant to imply anything about the nature of the ketamine experience, but only to conform to the medical literature on ketamine emergence reactions and related experiences.
3. It might be noted that people who undergo OBEs in real-life situations also more commonly report being disembodied than inhabiting any sort of apparitional form (Green, 1968).
4. While preparing this paper I interviewed a number of people in the Los Angeles area known to have made extensive recreational use of ketamine. No incidence of phenomenology typical of the NDE or OBE was reported. These people were usually crystallizing the drug before ingesting it, thus taking lower doses than used medically.

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