

The combination of nine lines of evidence converge on the conclusion that near-death experiences are medically inexplicable. Any one or several of the nine lines of evidence would likely be reasonably convincing to many, but the combination of all of the presented nine lines of evidence provides powerful evidence that NDEs are, in a word, real.

Introduction

Near-death experiences (NDEs) are reported by about 17% of those who nearly die. NDEs have been reported by children, adults, scientists, physicians, priests, ministers, among the religious and atheists, and from countries throughout the world.

While no two NDEs are the same, there are characteristic features that are commonly observed in NDEs. These characteristics include a perception of seeing and hearing apart from the physical body, passing into or through a tunnel, encountering a mystical light, intense and

generally positive emotions, a review of part or all of their prior life experiences, encountering deceased loved ones, and a choice to return to their earthly life.²

Methods

There is no uniformly accepted definition of near-death experience. Definitions of NDE with some variability have been used throughout the 35 plus years that NDE has been the subject of scholarly investigation. For my retrospective investigations, an NDE was required to have both a near-death and experience component.

Individuals were considered to be "near-death" if they were so physically compromised that if their condition did not improve they would be expected to irreversibly die. Near-death experiencers (NDErs) included in my



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investigations were generally unconscious and may have required cardiopulmonary resuscitation. The "experience" component of an NDE had to occur when they were near death. Also, the experience had to be reasonably lucid, which excluded fragmentary or brief disorganized memories. For an experience to be classified as an NDE, there had to be a score of seven or above on the NDE Scale.³ The NDE Scale asks 16 questions about the NDE content and is the most validated scale to help distinguish NDEs from other types of experiences.

In 1998, a website called the Near Death Experience Research Foundation (NDERF, nderf.org) was established to conduct NDE research and to be a public service. It is NDERF policy that all NDE accounts shared with NDERF are posted on the website if the NDErs give permission to do so. Nearly all NDErs allow their experiences to be posted on the NDERF website. Portions of the NDERF website, including the NDE questionnaire, have been posted in over 20 different languages. The NDERF website has consistently been at or near the top of websites listed from a Google search for the term "near-death experiences." This prominence of the NDERF website provided a unique opportunity to conduct a large-scale study of NDEs, including NDEs from around the world. At the current time there are over 3,700 NDEs posted on the NDERF website, which is by far the largest collection of publicly accessible NDE accounts in the world.

The NDERF website has a form allowing near-death experiencers to share a detailed narrative of their experiences, and includes a detailed questionnaire. Extensive prior studies found that an Internet survey has validity that is equivalent to traditional pencil-and-paper survey. All experiences shared with the NDERF website are reviewed. Sequentially shared NDEs from the NDERF website were studied. NDEs included for study were single NDE accounts, shared in English, and were shared by the individual who personally had the NDE. An investigation of the NDEs shared with NDERF led to nine lines of evidence suggesting the reality of NDE.

Results Suggesting the Reality of Near-Death Experiences

Line of Evidence #1

Lucid, organized experiences while unconscious, comatose, or clinically dead

Near-death experiences occur at a time when the person is so physically compromised that they are typically unconscious, comatose, or clinically dead. Considering NDEs from both a medical perspective and logically, it should not be possible for unconscious people to often report highly lucid experiences that are clear and logically structured. Most NDErs report supernormal consciousness at the time of their NDEs.

The NDERF survey asked, "How did your highest level of consciousness and alertness during the experience compare to your normal, everyday consciousness and alertness?" Of 1,122 NDErs surveyed, 835 (74.4%) indicated they had "More consciousness and alertness than normal"; 229 (20.4%) experienced "Normal consciousness and alertness"; and only 58 (5.2%) had "Less consciousness and alertness than normal."

The NDERF survey also asks, "If your highest level of consciousness and alertness during the experience was different from your normal everyday consciousness and alertness, please explain." In response to this question, NDErs commonly reported that consciousness during their experiences was "clear", "more aware", and often associated with heightened awareness.

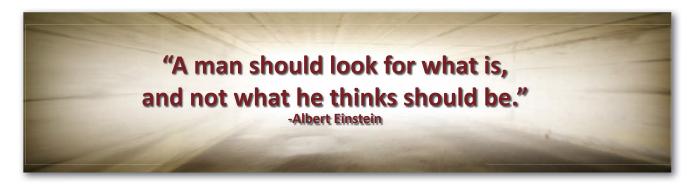
Near-death experiences often occur in association with cardiac arrest. Prior studies found that 10-20 seconds following cardiac arrest, electroencephalogram measurements generally find no significant measureable brain cortical electrical activity. A prolonged, detailed, lucid experience following cardiac arrest should not be possible, yet this is reported in many NDEs. This is especially notable given the prolonged period of amnesia that typically precedes and follows recovery from cardiac arrest.

Line of Evidence #2

Seeing ongoing events from a location apart from the physical body while unconscious (out-of-body experience)

A common characteristic of near-death experiences is an out-of-body experience. An out-of-body experience (OBE) is the apparent separation of consciousness from the body. About 45% of near-death experiencers report OBEs which involves them seeing and often hearing ongoing earthly events from a perspective that is apart, and usually above, their physical bodies. Following cardiac arrest, NDErs may see, and later accurately describe, their own resuscitation.

The first prospective study of the accuracy of out-of-body observations during near-death experiences was by Dr. Michael Sabom.⁸ This study investigated a group of patients who had cardiac arrests with NDEs that included OBEs, and compared them with a control group of patients who experienced cardiac crises but did not have NDEs.



Both groups of patients were asked to describe their own resuscitation as best they could. Sabom found that the group of NDE patients were much more accurate than the control group in describing their own resuscitations.

Another prospective study of out-of-body observations during near-death experiences with similar methodology to Sabom's study was published by Dr. Penny Sartori. This study also found that near-death experiencers were often remarkably accurate in describing details of their own resuscitations. The control group that did not have NDEs was highly inaccurate and often could only guess at what occurred during their resuscitations.

Two large retrospective studies investigated the accuracy of out-of-body observations during near-death experiences. The first was by Dr. Janice Holden. ¹⁰ Dr. Holden reviewed NDEs with OBEs in all previously published scholarly articles and books, and found 89 case reports. Of the case reports reviewed, 92% were considered to be completely accurate with no inaccuracy whatsoever when the OBE observations were later investigated.

Another large retrospective investigation of near-death experiences that included out-of-body observations was recently published. ¹¹ This study was a review of 617 NDEs that were sequentially shared on the NDERF website. Of these NDEs, there were 287 NDEs that had OBEs with sufficient information to allow objective determination of the reality of their descriptions of their observations during the OBEs. Review of the 287 OBEs found that 280 (97.6%) of the OBE descriptions were entirely realistic and lacked any content that seemed unreal. In this group of 287 NDErs with OBEs, there were 65 (23%) who personally investigated the accuracy of their own OBE observations after recovering from their life-threatening event. Based on these later investigations, none of these 65 OBErs found any inaccuracy in their own OBE observations.

The high percentage of accurate out-of-body observations during near-death experiences does not seem

explainable by any possible physical brain function as it is currently known. This is corroborated by OBEs during NDEs that describe accurate observations while they were verifiably clinically comatose. ¹² Further corroboration comes from the many NDEs that have been reported with accurate OBE observations of events occurring far from their physical body, and beyond any possible physical sensory awareness. ¹³ Moreover, NDE accounts have been reported with OBEs that accurately observed events that were completely unexpected by the NDErs. ¹⁴ This further argues against NDEs as being a result of illusory memories originating from what the NDErs might have expected during a close brush with death.

Line of Evidence #3

Near-death experiences with vision in the blind and supernormal vision

There have been a few case reports of near-death experiences in the blind. The largest study of this was by Dr. Kenneth Ring. ¹⁵ This Investigation included 31 blind or substantially visually impaired individuals who had NDEs or out-of-body experiences. Of the 31 individuals in the study, 10 were not facing life-threatening events at the time of their experiences, and thus their experiences were not NDEs. There were 14 individuals who were blind from birth in this study, and nine of them described vision during their experiences. This investigation presented case reports of those born totally blind that described in NDEs that were highly visual with content consistent with typical NDEs.

The NDERF website has received additional case reports of near-death experiences among those legally blind. For illustration, the following NDE happened to Marta, a five-year-old blind girl who walked into a lake:

"I slowly breathed in the water and became unconscious. A beautiful lady dressed in bright white light pulled me out. The lady looked into my eyes asked me what I wanted. I was unable to think of anything until it occurred to me to travel around the lake. As I did so, I saw

detail that I would not have seen in "real" life. I could go anywhere, even to the tops of trees, simply by my intending to go there. I was legally blind. For the first time I was able to see leaves on trees, bird's feathers, bird's eyes, details on telephone poles and what was in people's back yards. I was seeing far better than 20/20 vision. "¹⁶

An NDERF survey question asked 1,122 near-death experiencers, "Did your vision differ in any way from your normal, everyday vision (in any aspect, such as clarity, field of vision, colors, brightness, depth perception degree of solidness/transparency of objects, etc.)?" In response, 722 (64.3%) answered "Yes", 182 (16.2%) said "Uncertain", and 218 (19.4%) responded "No". A review of narrative responses to this question revealed that vision during NDEs was often apparently supernormal. Here are some illustrative examples from NDEs:

"Colors were beyond any I had ever seen."

"Everything seemed so much more colorful and brighter than normal."

"My vision was greatly increased. I was able to see things as close or as far as I needed. There was no strain involved it was almost like auto zooming a camera."

"I had 360 degree vision, I could see above, below, on my right, on my left, behind, I could see everywhere at the same time!"

Vision in near-death experiencers that are blind, including totally blind from birth, has been described in many case reports. This, along with the finding that vision in NDEs is usually different from normal everyday vision and often described as supernormal, further suggests that NDEs cannot be explained by our current understanding of brain function. This is also further evidence that NDEs are not a product of what NDErs would have expected to occur during a life-threatening event.

Line of Evidence #4

Near-death experiences that occur while under general anesthesia

Under adequate general anesthesia it should not be possible to have a lucid organized memory. Prior studies using EEG and functional imaging of the brains of patients under general anesthesia provide substantial evidence that the anesthetized brain should be unable to produce lucid memories.^{17, 18} As previously discussed, following cardiac arrest the EEG becomes flat in 10 to 20 seconds, and there is usually amnesia prior to and following the arrest. The occurrence of a cardiac arrest while under general anesthesia is a combination of circumstances in which no memory from that time should be possible. Here is an illustrative example of an NDE that occurred under general anesthesia during surgery for a heart valve replacement:

"During my surgery I felt myself lift from my body and go above the operating table. The doctor told me later that they had kept my heart open and stopped for a long time, and they had a great amount of difficulty getting my heart started again. That must have been when I left my body because I could see the doctors nervously trying to get my heart going. It was strange to be so detached from my physical body. I was curious about what they were doing but not concerned. Then, as I drifted farther away, I saw my father at the head of the table. He looked up at me, which did give me a surprise because he had been dead now for almost a vear." 19

I reviewed 613 near-death experiences shared with NDERF, and found 23 NDEs that appeared to have occurred while under general anesthesia. Cardiac arrest was the most common life-threatening event that was described in association with the occurrence of these NDEs. I compared the responses of these 23 NDErs to the 590 non-anesthesia NDErs by reviewing how both groups responded to 33 survey questions that asked about the content of the NDEs. Chi-square statistics was used for this comparison. Due to the large number of questions asked, statistical significance was set at p=0.01. The only statistically significant difference between the two groups was that the anesthesia NDEs were more likely to describe tunnels in their experiences.

An NDERF survey question asked, "How did your highest level of consciousness and alertness during the experience compare to your normal everyday consciousness and alertness?" For the NDEs occurring under general anesthesia, 19 (83%) of the respondents answered, "More consciousness and alertness than normal," to this question, compared to 437 (74%) for all other NDEs. The responses to this question by the two

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groups were not statistically significantly different. This suggests, remarkably, that the level of consciousness and alertness in NDEs is not modified by general anesthesia.

Other near-death experience investigators have reported NDEs occurring while under general anesthesia. Dr. Bruce Greyson, a leading NDE researcher at the University of Virginia, states:

"In our collection of NDEs, 127 out of 578 NDE cases (22%) occurred under general anesthesia, and they included such features as OBEs that involved experiencers' watching medical personnel working on their bodies, an unusually bright or vivid light, meeting deceased persons, and thoughts, memories, and sensations that were clearer than usual."²⁰

NDEs due to cardiac arrest while under general anesthesia occur and are medically inexplicable.

Line of Evidence #5

Near-death experiences and life reviews

Some near-death experiences include a review of part or all of their prior lives. This NDE element is called a life review. NDErs typically describe their life review from a third-person perspective. The life review may include awareness of what others were feeling and thinking at the time earlier in their life when they interacted with them. This previously unknown awareness of what other people were feeling or thinking when they interacted with them is often surprising and unexpected to the NDErs. Here is an example of a life review:

"I went into a dark place with nothing around me, but I wasn't scared. It was really peaceful there. I then began to see my whole life unfolding before me like a film projected on a screen, from babyhood to adult life. It was so real! I was looking at myself, but better than a 3-D movie as I was also capable of sensing the feelings of the persons I had interacted with through the years. I could feel the good and bad emotions I made them go through."²¹

In my review of 617 near-death experiences from NDERF, a life review occurred in 88 NDEs (14%). None of the life reviews in these NDEs appeared to have any unrealistic content as determined by my review or based on comments by the NDErs about their own life reviews. Life reviews may include long forgotten details of their earlier life that the NDErs later confirm really happened. If NDEs were unreal experiences, it would be expected that there would be significant error in life reviews and possibly hallucinatory features. The consistent accuracy of life reviews, including the awareness of long-forgotten events and awareness of the thoughts and feelings of others from past interactions, further suggests the reality of NDEs.

Line of Evidence #6

Encountering deceased loved ones in near-death experiences

Near-death experiences may describe encounters with people that they knew during their earthly life. The following is an example of encountering a deceased loved ones in an NDE. This example is also notable as the NDEr was born totally deaf:

"I approached the boundary. No explanation was necessary for me to understand, at the age of ten, that once I cross[ed] the boundary, I could never come back—period. I was more than thrilled to cross. I intended to cross, but my ancestors over another boundary caught my attention. They were talking in telepathy, which caught my attention. I was born profoundly deaf and had all hearing family members, all of which knew sign language! I could read or communicate with about twenty ancestors of mine and others through telepathic methods. It overwhelmed me. I could not believe how many people I could telepathize with simultaneously." 22

When people known to the near-death experiencers are encountered in NDEs, the great majority are people who are deceased. A study by Dr. Emily Kelly was a comparison

of 74 NDEs with descriptions of encountering deceased individuals with 200 NDEs that did not describe encounters with the deceased.²³ This study found that when NDErs encountered beings known to them from their earthly lives in their NDEs, only 4% described meeting beings that were alive at the time of their experiences. I reviewed 84 NDEs from NDERF that described encounters with individual(s) that they knew in their earthly life.²⁴ There were only three NDEs (4%) where the encountered beings were alive at the time of the NDEs, consistent with the findings of the Kelly study.

In dreams or hallucinations when familiar persons are present they are much more likely to be living and from recent memory.²⁵ This is in sharp contrast to near-death experiencers where familiar persons encountered are almost always deceased. Cases have been reported by NDErs of seeing a person who they thought was living, but in fact had recently died.^{25, 26} These cases illustrate that NDEs cannot be explained by the experiencer's expectation of what would happen during a life-threatening event. Further evidence that NDEs are not a result of expectation comes from the aforementioned Kelly study where in one-third of the cases the encountered deceased person had a poor or distant relationship with the NDEr, or was someone that had died before the NDEr was born.²³

Line of Evidence #7

Near-death experiences of young children

Investigation of near-death experiences in very young children is important because at an early age they are less likely to have established religious beliefs, cultural understandings about death, or even an awareness of what death is. Very young children would be very unlikely to have heard about near-death experiences or understand them. I investigated the NDEs in children age five and younger in the same group of 613 NDErs previously discussed in the section on NDEs while under general anesthesia. Two NDEs were excluded as they did not provide their age in the survey. The study groups included 26 NDErs that were age 5 and younger (average 3.6 years old) and 585 NDErs age 6 and older at the time of their NDEs. The NDERF survey included 33 questions about the content of their NDEs. Chi-square statistics was used to compare the responses to these 33 questions between the two groups.²⁷ There was no statistically significant difference to the responses between the two groups to any of the 33 questions. The NDERF study found that

the content of NDEs in children age five and younger appeared to be the same as the content of NDEs in older children and adults. The finding of the NDERF study are corroborated by the investigation of Dr. Cherie Sutherland who reviewed thirty years of scholarly literature regarding the NDEs of children and concluded:

"It has often been supposed that the NDEs of very young children will have a content limited to their vocabulary. However, it is now clear that the age of children at the time of their NDE does not in any way determine its complexity. Even prelinguistic children have later reported quite complex experiences.... Age does not seem in any way to affect the content of the NDE."²⁸

Very young children have near-death experience content that is strikingly similar to older children and adults. This is further evidence that NDEs are occurring independently of preexisting cultural beliefs, religious training, or awareness of the existence of NDE.

Line of Evidence #8

Cross-cultural study of near-death experiences

Portions of the NDERF website, including the questionnaire, have been translated into 23 different languages. Over 500 near-death experiences in non-English languages have been shared with NDERF over the years. Dozens of volunteers have translated the non-English NDEs into English. Both the non-English and English translated versions of the NDEs are posted on the NDERF website. Over 60,000 people currently visit the NDERF website each month. Many website visitors are bilingual and this help assure that the NDEs are accurately translated.

My investigation of NDEs from around the world that have been translated into English shows that their content is strikingly similar.²⁹ If near-death experiences were considerably influenced by pre-existing religious and cultural beliefs, it would be expected that there would be significant differences in the content of NDEs from different cultures around the world. However, in my review of over 500 NDEs from dozens of countries around the world I found impressive similarities in the content of these NDEs.

I investigated 19 non-Western NDEs, where a "non-Western country" was defined as areas of the world that are predominantly not of Jewish or Christian heritage.³⁰

These 19 non-Western NDEs were compared to a group of NDEs shared in English from Western countries that were predominantly English speaking. This investigation concluded:

"All near-death experience elements appearing in Western NDEs are present in non-Western NDEs. There are many non-Western NDEs with narratives that are strikingly similar to the narratives of typical Western NDEs. At a minimum, it may be concluded that non-Western NDEs are much more similar to Western NDEs than dissimilar." "31

Two recent investigations of Muslim near-death experiences in non-Western countries have been reported. An investigation of 19 Iranian Muslim NDEs concluded:

"Our results suggest that Muslim NDEs may actually be quite common, as they are in the West, and may not be especially different in their key features from Western NDEs and therefore not heavily influenced by cultural variations, including prior religious or spiritual beliefs." 32

Another study of eight Muslim NDEs found:

"Although the documentation standard of the available cases is generally low, these accounts indicate that structure and contents of NDEs from many non-Western Muslim communities are largely similar to those reported in the Western NDE literature." 33

The lack of significant differences in the content of near-death experiences around the world, including NDEs from non-Western countries, suggests that NDE content is not substantially modified by preexisting cultural influences. This finding is consistent with the previously discussed finding that children age five and under, who have received far less cultural influence than adults during their brief lives, have NDEs with content that is essentially the same as older children and adults. Other common forms of altered consciousness, such as dreams or hallucinations, are much more likely to be significantly influenced by prior cultural beliefs and life experiences. The lack of significant differences in the content of NDEs around the world is consistent with the concept that NDEs occur independently from physical brain function as currently understood.

Line of Evidence #9

Near-death experience aftereffects

Following near-death experiences significant changes in the lives of NDErs are commonly observed. The most recent version of the NDERF survey asked NDErs, "My experience directly resulted in...:"

The responses of 278 NDErs to the question were:

Large changes in my life	152	54.7 %
Moderate changes in my life	68	24.5 %
Slight changes in my life	28	10.1 %
No changes in my life	14	5.0 %
Unknown	16	5.8 %

Changes in beliefs and values following near-death experiences are often called aftereffects. Given that a life-threatening event without an NDE might result in life changes, some of the best evidence for NDE-specific aftereffects came from the largest prospective NDE study ever reported. This study, conducted by Pim van Lommel, MD, divided survivors of cardiac arrest into a group that had NDEs, and a group that did not.¹² The aftereffects of both groups were assessed two and eight years after the cardiac arrests. The group of cardiac arrest survivors with NDEs were statistically more likely have a reduced fear of death, increased belief in life after death, interest in the meaning of life, acceptance of others, and were more loving and empathic. It may take years after NDEs for the aftereffects to become fully manifest. The aftereffects may be so substantial that NDErs may seem to be very different people to their loved ones and family. The consistency, intensity, and durability of NDE aftereffects is consistent with the NDErs' typical personal assessments that their experiences were very meaningful and significant. It is remarkable that NDEs often occur during only minutes of unconsciousness, yet commonly result in substantial and life-long transformations of beliefs and values.

Conclusion of Study

Multiple lines of evidence point to the conclusion that near-death experiences are medically inexplicable and cannot be explained by known physical brain function. Many of the preceding lines of evidence would be remarkable if they were reported by a group of individuals during conscious experiences. However, NDErs are generally unconscious or clinically dead at the time of their experiences and should not have any lucid organized memories from their time of unconsciousness.

It is informative to consider how near-death experiencers themselves view the reality of their experiences. An NDERF survey of 1122 NDErs asked "How do you currently view the reality of your experience?", and received the following responses:

Experience was definitely real	962	95.6 %
Experience was probably real	40	4.0 %
Experience was probably not real	3	0.3 %
Experience was definitely not real	1	0.1 %

The great majority of more than 1,000 near-death experiencers believed that their experiences were definitely real. The 1,122 NDErs surveyed included many physicians, scientists, attorneys, and nurses. These findings suggest that, for the majority of us who have not personally experienced an NDE, we should be very cautious about labelling NDEs as "unreal." Given that such a high percentage of NDErs consider their experiences to be "definitely real," it would be reasonable to accept their assessment of the reality of their personal experience unless there is good evidence that their experiences were not real.

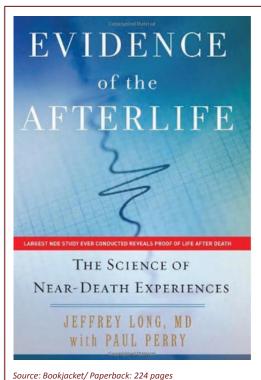
After over 35 years of scholarly investigation of near-death experience, the totality of what is observed in NDEs has not been adequately explained based on physical brain function. It is beyond the scope of this article to review the many proposed "explanations" of near-death experience. Over the years, there have been over 20 different "explanations" of NDE suggested that cover the gamut of physiological, psychological, and cultural causes. If any one or several of these "explanations" were widely accepted as plausible, then there would be no need for so many different "explanations" of NDE. Among those who believe that physical brain function must explain everything that is experienced in all NDEs, there is no consensus whatsoever about how physical brain function produces NDEs.

Conclusion

The combination of the preceding nine lines of evidence converges on the conclusion that near-death experiences are medically inexplicable. Any one or several of the nine lines of evidence would likely be reasonably convincing to many, but the combination of all of the presented nine lines of evidence provides powerful evidence that NDEs are, in a word, real.

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Evidence of the Afterlife: The Science of the Near-Death Experience



by Jeffrey Long, MD, with Paul Perry

The most compelling scientific evidence for life beyond death ever compiled. Evidence of the Afterlife shares the firsthand accounts of people who have died and lived to tell about it. Through their work at the Near Death Experience Research Foundation, radiation oncologist Jeffrey Long and his wife, Jody, have gathered thousands of accounts of near-death experiences (NDEs) from all over the world. In addition to sharing the personal narrative of their experiences, visitors to the website are asked to fill out a one hundred-item questionnaire designed to isolate specific elements of the experience and to flag counterfeit accounts. The website has become the largest NDE research database in the world, containing over 3,800 NDE accounts. The people whose stories are captured in the database span all age groups, races, and religious affiliations and come from all over the world, yet the similarities in their stories are as awe-inspiring as they are revealing. Using this treasure trove of data, Dr. Long explains how medical evidence fails to explain these reports and why there is only one plausible explanation—that people have survived death and traveled to another dimension.

as factual. An illustrative example was an NDE with an OBE in which the patient described the cardiac surgeon "flapping his arms as if trying to fly." The surgeon later verified this, stating that after scrubbing in he flattened his hands on his chest and was rapidly pointing with his elbows to give instructions. See: Cook EW, Greyson B, and Stevenson I. Do any near-death experiences provide evidence for the survival of human personality after death? Relevant features and illustrative case reports. Journal of Scientific Exploration 1998;12:399–400.

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Disclosure

None reported.

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