

# Near-death experiences

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## SUMMARY

Reactions to claims of near-death experiences (NDE) range from the popular view that this must be evidence for life after death, to outright rejection of the experiences as, at best, drug induced hallucinations or, at worse, pure invention.

Twenty years, and much research, later, it is clear that neither extreme is correct.

## INTRODUCTION

What is it like to come very close to death and survive? In 1975, physician Raymond Moody, hit the best-seller lists with *Life after Life*, claiming that hundreds of near-death survivors had reported overwhelmingly pleasant experiences during which they seemed to leave their bodies and view resuscitation attempts from above, passed down a dark tunnel towards a brilliant light, met a 'being of light' who helped them to evaluate and judge their own lives, and finally decided to return to life rather than go on into the peace and bliss of death<sup>1</sup>. The experiences were difficult to talk about but left the people changed for the better—reportedly less materialistic and with reduced fear of death.

The claim that the experiences are evidence for survival after death is untenable. Even though the boundary between life and death is pushed back by improved techniques, it is always possible to argue that the person did not actually die and the experiences were part of life and not death. Of course, if there is life after death, these experiences may give a clue as to what it is like, but they can never be definitive evidence that there is.

On the other hand the experiences cannot be dismissed as either invention or iatrogenic. Moody simply collected cases as they came along, but research by Ring, on 101 randomly selected survivors, soon confirmed that such reports are common; about 60% reported peace, one third out-of-body experiences (OBE), a quarter entering the darkness (or tunnel) and rather fewer the later experiences<sup>2</sup>. NDEs also appear to be widespread through many ages and cultures. Long before Moody, there had been similar descriptions of death bed experiences (when the patients did go on to die) in the psychical research literature<sup>3,4</sup> and isolated reports in the medical literature<sup>5-8</sup>. There are both historical and contemporary accounts from many different

cultures<sup>9</sup> and, in our own culture, children also report similar experiences although they tend to be fragmentary compared with adults<sup>10-11</sup>.

Although some modern stories may be inventions based on the widespread publicity, it seems unlikely that people across so many other ages and cultures would have invented similar stories. The question then becomes why the features are so often the same. Common theories include the effects of: (1) expectation; (2) administered drugs; (3) endorphins; (4) anoxia or carbon dioxide retention; (5) temporal lobe stimulation, and (6) life after death. I shall consider each in turn.

## EXPECTATION

Expectation clearly has an effect on NDEs, though there are two different aspects to this. First, NDEs often happen to people who think they are dying when in fact there is no serious clinical emergency. This adds to the general conclusion that you do not have to be physically near-death to have an NDE<sup>12,13</sup>. Indeed, some aspects of the NDE, such as the OBE can occur at any time and to perfectly healthy people<sup>14-16</sup>. There are some differences between the NDEs of those who are and are not close to death but they are small compared to the similarities<sup>13</sup>. Second, the details of the NDE may vary with expectations about death. For example, Christians tend to see Jesus in the light, and Hindus see the messengers of Yamraj coming to take them away—and they often refuse to go<sup>4</sup>! However, the general pattern seems to be similar across cultures, suggesting that religious expectations are not responsible for the entire experience, nor for most of its common features. If they were we might expect more pearly gates and fewer tunnels. We might also expect suicide attempters to have more hellish experiences and in fact they do not<sup>17-19</sup>. Their NDEs are much like others and tend to reduce future attempts at suicide. All this suggests that, although expectation may change the details of NDEs, it cannot be

used to explain their occurrence entirely, or even to account for the similarities across ages and cultures.

### ADMINISTERED DRUGS

The suggestion that the experiences are created by drugs administered to dying patients does not hold up either. Many classic cases have been reported from drug-free patients and from people who were falling from mountains<sup>20</sup> or undergoing other accidents where no drugs were involved. More specifically, research shows that patients given anaesthetics or pain killers have fewer, or more muted and less detailed, NDEs than others<sup>2,4,17</sup>. It seems likely that it is compounds formed by the brain that are more important for the NDE than administered drugs.

### ENDORPHINS

Carr first suggested that endorphins could account for the NDE in 1982<sup>21,22</sup>. Endorphins are released under stress (including both actual physical trauma and extreme fear—such as the fear of dying). They are known to block pain and to induce feelings of well-being, acceptance and even intense pleasure, which might suggest they are responsible for the positive emotional tone of most NDEs. There is much controversy over the occurrence of 'hellish' NDEs, with some researchers arguing that they are far more common than previously suspected<sup>23–25</sup>. Occasionally NDEs change from pleasant to hellish, as in one 72-year-old cancer patient who was administered naloxone. His pleasant NDE turned to horror and despair as the friendly creatures turned into the doctors treating him—suggesting that the naloxone (a morphine antagonist) had blocked the endorphins which were providing the pleasant feelings<sup>26</sup>. This is circumstantial, though, and Morse has argued that endorphins are not responsible, suggesting that the neurotransmitter, serotonin, plays a more important role. Of eleven children who had survived critical illnesses including coma and cardiac arrest, seven reported NDEs, while 29 age matched controls, who had had similar treatments including the use of narcotics, did not report any NDEs<sup>27</sup>. However, it is questionable whether the effects of narcotics administered during critical illness are comparable with those of endorphins. Jansen has argued that endorphins are not potent hallucinogens and suggests instead the involvement of NMDA receptors<sup>28</sup>. It is therefore still not known how far endorphins are implicated in the NDE.

### ANOXIA

The argument over the role of anoxia has been complex. Some blame anoxia for all the features of the NDE, though this is implausible, since so many NDEs clearly occur in the absence of anoxia (such as those when the person only *thinks* they are going to die).

I have argued that the cortical disinhibition associated with anoxia may be responsible for the tunnel and light. Since visual cortex is organized with many cells devoted to the centre of the visual field, and few to the periphery, random excitation will produce the effect of a bright light in the centre fading out towards darkness, in other words, a tunnel effect<sup>29</sup>. More generally I have suggested that it is the disinhibition (not the anoxia *per se*) which is responsible for much of the NDE<sup>9</sup>.

Anoxia in non-life-threatening situations does cause odd experiences, such as the visions and out-of-body experiences reported by pilots trained in gravity-induced loss of consciousness<sup>30</sup>. There are also suggestions of NDE-like experiences in children suffering from reflex anoxic seizures, though most of these children are too young to describe their experiences (Blackmore, in preparation)<sup>31</sup>.

Against all this, others argue that the effects of anoxia are not like those of NDEs (for example, confusion rather than the clear thinking of a typical NDE), though this is complicated by the fact that different types and speeds of anoxia cause different effects. There is also one case of an NDE in a patient with measured, normal blood gases<sup>32</sup>, though it has been argued that his blood was taken from the femoral artery and that peripheral blood samples are not a reliable indicator of cortical blood gases<sup>33</sup>.

There may also be a role for carbon dioxide retention, which has long been known to induce strange experiences such as lights, visions, out-of-body and mystical experiences<sup>34</sup>.

### TEMPORAL LOBE STIMULATION

The temporal lobe is likely to be crucial in NDEs since it is sensitive to anoxia and its stimulation is known to induce hallucinations, memory flashbacks, body distortions and out-of-body experiences<sup>35,36</sup>. The limbic system is also sensitive to anoxia and involved in the organisation of emotions and memory, suggesting a possible link with the life review that sometimes occurs during NDEs. An interesting effect of endorphins is that they lower the seizure threshold in the temporal lobe and limbic system<sup>37</sup>. So they might produce the same effects as anoxia. One neurobiological model of the NDE is based almost entirely on the notion of abnormal firing in the temporal lobe and associated parts of the brain<sup>38</sup>. Also research looking for an 'NDE-prone personality' has led to the conclusion that those most likely to have NDEs may have more unstable temporal lobes and show more 'temporal lobe signs' than others<sup>39</sup>, though it is not clear how much of this association is a cause or an effect of the NDE.

### LIFE AFTER DEATH

None of the above mechanisms can account entirely for the NDE and many theorists argue that something beyond the

brain is involved; for example, that there is a soul or something else that leaves the body at death, and the NDE is a glimpse of what follows. Direct evidence for this is impossible to obtain. However, there are claims that during NDEs people have been able to hear conversations and see the actions of people around them and even observe things like the behaviour of needles on dials, which they could not possibly have known about in their comatose state<sup>32</sup>. If such paranormal acquisition of information really occurs, it is evidence that any naturalistic account of NDEs must be incomplete. But does it?

Many of these claims are based purely on anecdotal evidence and very few have any independent corroboration. For example, the most famous case involves a woman who saw a shoe on an inaccessible ledge of a hospital in Seattle. The social worker attending her eventually found this shoe as she had described it<sup>40</sup>. However, neither the patient nor anyone else involved gave an independent account. There are other similar cases<sup>41</sup>. Yet sceptics tend to reject the evidence as inadequate while proponents think it is conclusive. Perhaps it might be resolved by appropriate experiments, such as those using concealed targets in operating theatres and recovery rooms. Some are presently underway but no results have yet been published.

The transformations reported after NDEs are also taken as evidence of their heavenly nature. However, simply facing up to death can bring about a change in personal values and there is conflicting evidence about whether an NDE is necessary<sup>42,43</sup>. I have also argued that during the NDE the usual model of self breaks down and this brief experience of selflessness may bring about personal changes<sup>9</sup>.

**CONCLUSION**

In the end it is probably a matter of personal preference whether to interpret the NDE as a glimpse of the life beyond or the product of the dying brain. Either way the NDE deserves serious research; and the dying, the recovering and their relatives deserve to know what we have learned. As Morse puts it, these experiences can help us to restore dignity and control to the dying process<sup>44</sup>. Just as NDEs reduce the fear of death in the people who have them, so they can help all of us to accept death as a positive aspect of life. Indeed, the study of life at its last limits may tell us more about ourselves and our lives than it does about death.

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