

Near-Death Experiences: A Potential Problem for Physicalism

Tyler Rauh
University of Michigan-Flint

ABSTRACT

Near-death experiences have been known to exist for centuries, yet their philosophical significance remains unknown. An overview of the research of near-death experiences is compiled and the various cognitive, transcendental, affective, and paranormal components of near-death experiences are explored. Included in these are accounts of people meeting deceased relatives, having out-of-body experiences, sensations of tranquility, and believing one has traveled to another realm. The verifiability of these experiences are explored, particularly the account of a woman who had an out-of-body experience during a brain surgery in which her brainwaves and most other bodily functions were measured at zero. It is then explored what this may mean for physicalist frameworks of mind. It is proposed that if the out-of-body experiences are indeed real, then problems for physicalism arise given our current neurological paradigms. How exactly can the mind be reduced to physical states if the physical body is not functioning? Anticipated replies from physicalists are then given including theoretical hallucinogenic neurotransmitters, abnormal oxygen levels, and impaired functioning of the temporo-parietal junction in the brain. It is then concluded that each explanation is not adequate to explain every facet of the near-death experience, but they may be capable of doing so in the future with a more complete neuroscience. Regardless of what it may mean for physicalism, near-death experiences should be further researched within the confines of philosophy due to their possible implications and potential questions regarding the nature of consciousness.

Keywords: Near-Death Experience, Out-of-Body Experience, Physicalism, Dualism

Near-death experiences, commonly abbreviated by NDE, are defined as "profound and sometimes life-changing experiences reported by people who have been physiologically close to death, as in cardiac arrest, or psychologically close to death,

as in accidents or illnesses in which they feared they would die” (Greyson 2006). NDEs have been chronicled for as long as philosophy has been around and they pose a unique problem in science and philosophy. It is impossible to know that a NDE is about to occur and obviously one would be quite hesitant to volunteer for the chance to experience one. Thus, much of the research done is hypothetical, unable to be tested experimentally, and based on witness testimonies. The testimonies pose their own unique problems as they are unverifiable and subject to retrospective changes due to the natural faults of human memory. Yet, to get closer to the truth, we have to use these testimonies.

Research on near-death experiences is in a relatively infantile stage due to the difficulties posed in gaining new information. The seemingly universal experiences shared by people with NDEs were first chronicled in the late 70s (Moody 1975) and the phrase “near-death experience” was coined in the same publication. Since then, there has been much research completed and studies done to build a volume of cases, but not to the point of a full explanation. Bruce Greyson took the torch after Moody and has become a pioneer in the field both philosophically and scientifically. He divided the various features of NDEs into four distinct categories each with their own significance: cognitive, affective, transcendental, and paranormal features.

Many NDEs consist of cognitive features in which the victims have thought processes despite little to no brain activity in the body of the person having the experience. Victims occasionally say they are presented with choices, a self-awareness that they are at the end of their life, and a sense that they are approaching a barrier from which they may not be able to return. Whether they actually have autonomy in NDEs is irrelevant in this regard; the fact that they can actually comprehend a situation in which they could possibly have options is remarkable considering their brain activity is virtually nonexistent. If true and verifiable, these features could pose problems for certain philosophies of mind and this will be discussed later in the paper.

Also common in NDEs are affective features. These are distinguished by the persons experiencing emotional states during the NDE. A majority of near-death experiences have witnesses saying that they had feelings of peace, tranquility, and well-being (French 2005). Experiences are even noted where a person encounters “a being of light radiating love and understanding” (Dell’Olio 2010). Subsequently, almost every person has an elimination of fear of death. Also, despite frustration manifesting from an inability to get people to relate to their experience, most people have a greater appreciation for life and love after their NDE based on psychological

evaluations and witness testimonials. These features are interesting because one would not expect a person to have feelings of peace and tranquility during such a stressful episode, especially if one uses the premise that emotional states are only possible in a functioning brain.

Transcendental features are exemplified by the person's perception of visiting another realm or world. These perceptions often consist of visions of deceased persons, (most often biological relatives) and/or mystical beings. There have even been cases of people having visions of relatives that they didn't know. "I saw, apart from my deceased grandmother, a man who had looked at me lovingly, but whom I did not know. More than 10 years later, at my mother's deathbed, she confessed to me that I had been born out of an extramarital relationship...my mother showed me his picture. The unknown man that I had seen more than 10 years before during my NDE turned out to be my biological father" (van Lommel 2006). There have been other experiences involving people visiting fields or cities of bright light, often times accompanied by gates that are seemingly impossible to get through. The level of clarity and deepness varies from NDE to NDE, but virtually all NDEs with transcendental features have a commonality about them in regards to seeing deceased persons. Obviously, these episodes are virtually impossible to verify, but if true, they show that a person has the ability to travel in a mental sense without a physical body and could also pose problems for certain theories in philosophy of mind.

Finally, paranormal features include "extraordinarily vivid physical senses, extrasensory perception, precognitive visions, and a sense of being out of the physical body" (Greyson 2006). These paranormal features often have a psychic allure behind them. There have often been people who claim to have seen the future including the birth of children, dealing with future terminal illnesses of loved ones, and circumstances relating to their occupation. These events seem to typically be remembered later in a *deja vu* sense. Simple things like color and sound are perceived in ways that are not typical; most people who have had a NDE have trouble relating these sensations to other people who have not experienced them.

The most philosophically significant feature of NDEs is the out-of-body experience. During an out-of-body experience, the person seems to have the ability to perceive, feel emotions, and create new memories, but their "self" is not within their body. Rather, they are viewing it from above. In other words, their center of experience is located above their physical body. This aspect of NDE has incredible significance because the experience can often be verified by third parties. A

compos mentis

relatively famous example is that of Pam Reynolds (Sabom 1998). She suffered a brain aneurysm that required a surgery that forced the blood in head to be drained, not unlike oil from a car. The doctors taped her eyes shut and molded headphones to her ears while playing clicking sounds at greater than 100dB in order measure her brainwaves. Her body temperature was then lowered to approximately 19 degrees Celsius and the brain surgery commenced once her brainwaves were measured at zero and her heart was stopped. During the surgery, she said she had the sensation of "popping out of her head". She explained she was then viewing her body from above while floating from the ceiling. She could hear the conversation between the doctors discussing blood vessels in her legs. She even remembered the music that the doctors were playing during her surgery. She then felt her body being transitioned down a dark tunnel towards a pinpoint of light while hearing her grandmother's voice calling for her. After hearing her voice, all fear subsided and she drifted down this tunnel willfully. Her uncle also accompanied her during this experience. Once some time had passed, she journeyed back down the tunnel and into her body and had no recollection after that. A year later, assuming it was a hallucination, she spoke to the surgeon about the experience. He showed her the video and audio recording of the surgery. Amazingly, they found that the conversation she recited actually happened during the surgery and the song that she remembered, "Hotel California" by the Eagles, also was playing in the room as they put her body in a cardiac standstill.

Pin van Lommel (2006) also notes an interesting example where a man was in a coma with no heartbeat after an accident. While in the emergency room, the comatose man had his dentures removed by a nurse and she placed them into what is called a crash cart. After an hour and a half, he once again had a sufficient heart rate, but he was still in a coma. He eventually became conscious again over the next few days, yet no one was able to find his dentures. More than a week after the incident, the man sees the nurse and proclaims that she knows where his dentures are. He explains how he was viewing his body from above during the whole ordeal. He was also able to explain what that room looked like despite never being conscious while in the room. Lo and behold, his dentures were indeed in the crash cart.

Because of their nature and verifiability, I believe that these out-of-body experiences pose a unique problem for physicalist frameworks of mind. Physicalists have become extremely prevalent in modern philosophy, especially with evolutions in neuroscience. Various opposing schools of thought, including dualism, have

become virtually shunned with advents in technology. Many of the mind's mysteries have become answerable in physical terms, often by pointing to certain areas of the brain, but questions still remain unanswered. I propose that the nature of out-of-body experiences is one of these questions.

I believe that it is up to physicalists, rather than other frameworks of mind, to explain the out-of-body phenomena experienced by the likes of Pam Reynolds. The reason is quite simple: how exactly does one have physically based mental states if their brainwaves are reduced to nothing and their body is in an intentional non-functioning state? Also, how would one experience physical states and process sensory information if their center of experience is located outside of their physical body?

A dualistic philosophy of mind would explain these phenomena quite effectively. Dualists argue that there is a mental entity that exists independent of our physical body and it is responsible for our mental functions and even our identity. An out-of-body experience could be explained as the mental entity escaping its physical bonds as the body becomes uninhabitable and the other facets of the NDE can be explained through various psychological explanatory models, as explained below.

Proponents for these psychological models have said that the near-death experience can be brought about by the mind going into a temporary unstable state or through a form of expectation: that is to say, because the person is expecting to see something during their time of death, they actually do experience something. While proponents make a pseudo placebo effect argument, easy objections can be made towards expectation models based on seeing deceased, unknown relatives as mentioned above in the transcendental features section. If one says we only see deceased persons because we *expect* to see them in a near-death state, then how exactly could a person see someone that they have never met?

Other proponents of psychological models say that the NDEs occur because of a built in defense mechanism used for especially harrowing ordeals. They explain this model as something similar to how a person goes into shock or blacks out during a traumatic experience. While defense mechanisms are known to exist in some sense, the extent to which they can be applied to NDE is unknown because it would be nearly impossible to test for such a thing.

Another subtype of psychological models states that NDEs occur due to depersonalization. Depersonalization involves feelings of detachment, strangeness, and unreality. It often consists of a person feeling detached from their own self and having no control over a particular situation. It is a recognized personality disorder

compos mentis

in psychology, but its relevance to NDEs, like any other psychological model, remains unknown and purely speculative. Pundits to depersonalization point out that people who have had NDEs feel like they have some sort of control over what is happening. Often times, people have claimed to communicate with the deceased and move freely within a mystical realm. If true, then depersonalization would not be able to account for every facet of the NDE.

A less supported psychological model claims that NDEs are a recreation of our memory of birth. They point to the tunnel of light as an indicator, but pundits have easily dismissed these claims. There have been instances of NDE in people born from a Caesarean section and the percentages seem to indicate that one form of birth does not produce more NDEs than the other. Also, it is pointed out that “many NDEs do not contain the features of a tunnel or light” and “newborns lack the visual, spatial, and mental capacities” (Greyson 2006) to form memories at the time of their birth.

Dualism and psychological models come with their own set of problems, but strictly within the context of out-of-body experiences, with our current paradigms and knowledge, dualism, with or without the assistance of psychological models, gives a seemingly more thorough explanation compared to physicalism.

While I do believe that dualists can currently offer a better explanation of NDEs, I also believe that physicalists have the potential to give a more thorough explanation with a more complete neuroscience. There have been numerous attempts to explain NDEs through various physical components, but all theories presently have an incompleteness to them. I shall now give an overview of these physiological explanations and give my thoughts on how they could each evolve to give an adequate view of NDEs and the mind.

A common physical belief is that NDEs are hallucinations due to the fact that no one else around them can see the experience. Often times, theorists will point to the similarities of NDE and hallucinogens, particularly dimethyltryptamine (DMT) and ketamine. Nearly everyone who has used DMT recreationally has reported having an out-of-body experience and experiencing some of the transcendental features of NDEs like traveling to another realm or meeting mystical beings. DMT is widely found in nature, including trace amounts in some mammals, but its significance in human functioning is relatively unknown at this time (Burchett & Hicks 2006). It has been proposed that the brain could produce DMT as a neurotransmitter during something traumatic, like NDEs, which could result in a hallucination. At this time, there currently is no concrete evidence to support DMT being in the human brain,

let alone being the primary cause for NDEs, but the DMT experience has been likened to an NDE.

Another one of these proposed neurotransmitters is ketamine. Ketamine can also be also recreationally consumed and the users have reported experiences that resemble NDEs like "traveling through a dark tunnel into light, believing one has died, or communing with a god." (Greyson 2006) Pundits point out that ketamine, unlike DMT and NDEs, often results in the user feeling frightened. Also, most ketamine users "recognize the illusory character of their experience, whereas people who have had near-death experiences are almost always convinced of the reality of the experience" (Greyson 2006). In addition, ketamine users do not experience any of the aforementioned affective features associated with NDE, but this could be compensated for if one is to have a theory that incorporates a concoction of other neurotransmitters, including endorphins, serotonin, and/or adrenaline. They propose that these neurotransmitters, when released together in a NDE, could produce a hallucinatory experience from the DMT and/or ketamine along with a sensation of peacefulness from the overabundance of other neurotransmitters. Calling an out-of-body experience a chemically induced hallucination is one possible answer for physicalists, but it cannot be the complete answer. In the case of Pam Reynolds, her body temperature was lowered to the point where there was no measurable brain activity and her sensory organs were debilitated, yet she was still capable of gathering new sensory information and having clear mental processes. Based on the doctor's reports, she was witnessing reality and not a hallucination. Thus, if one is explain an NDE as a hallucination, they need to also explain how the person is still able to accurately perceive reality while being effectively brain dead during that time period.

Another physiological explanatory model of NDEs deals with vital gases, or lack thereof, within the human body. Proponents say that NDEs are caused by decreased oxygen (hypoxia) or a complete lack of oxygen (anoxia). Whinnery (1997) noted the similarities between G-LOC syndrome and NDEs. G-LOC syndrome occurs when fighter pilots accelerate too fast and lose adequate blood supply to their brain, thus resulting in a form of hypoxia. Whinnery noticed that these episodes often involved "tunnel vision and bright lights, floating sensations, automatic movement, out-of-body experiences, vivid dreamlets of beautiful places, pleasurable sensations, dissociation, visions of family and friends, and experiencing prior memories and thoughts". Obviously, these sensations mirror many aspects of NDE. Common objections to hypoxia theories point out that people who have

experienced G-LOC and other forms of hypoxia are often left in a confused state and this conflicts with reports from NDErs who claim that they have a heightened sense of clarity, rather than a decreased sense of their surroundings. Other objections point to fact that people have experienced NDEs with normal oxygen levels. Also, there have been innumerable reports of people not having NDEs with abnormal oxygen levels. Thus, there doesn't seem to be a correlation between levels of vital gases and NDEs.

Seemingly, the strongest argument for physicalists deals with the temporoparietal junction (TPJ) in the brain. Recent studies have shown that injury to the TPJ can cause distortions in self-awareness and self-imaging. Researchers built case studies of people who had out-of-body experiences and noticed a positive correlation between lesions in the TPJ and out-of-body experiences. Other experimenters electrically stimulated the TPJ and triggered an out-of-body experience. The researchers point out that the brain must integrate and weigh evidence from various sensory inputs and quickly arrive at a decision. In order to sustain optimal functionality, the brain must use this evidence from the sensory inputs to "create sensory-central representations of the movement and position of the body and its position in extra-personal space" (Blanke & Arzy 2005). The researchers propose that occasionally, contradicting information from various sensory inputs, along with impairments to the TPJ, can result in the brain functioning as if there are two central representations of the self. This could feasibly result in an out-of-body experience.

This theory seems to hold much water and makes sense logically due to the extensive research behind it. Yet, it is not without its own problems. For one, in the case of Pam Reynolds, how exactly can there be contradictory sensory information when she was not experiencing any sensory information? Her eyes were taped shut and her ears were cut off from any auditory information, yet she was capable of rehashing precisely what was said in the operating room. While the TPJ theory has allowed physicalists to focus on a specific part of the brain, the current theory cannot fully capture some aspects of the near-death experience.

In modern philosophy of mind, the dominating theories are physicalist frameworks. With advancements in neuroscience, many previous mental phenomena have been explained, but the nature of NDEs, specifically out-of-body experiences, have thus far been more adequately explained with other philosophies of mind. The question still remains: how exactly can one process sensory information and have mental processes when a person's brain activity is measured zero? As mentioned previously, physicalists have attempted to attribute

NDEs to theoretical hallucinogenic neurotransmitters, but these theories are not currently testable in people who have had NDEs. Also proposed is a theory in which NDEs are caused by a lack of oxygen, but there have been no correlations drawn between a lack of oxygen and the emergence of an NDE. The physicalist theory with the most support is one that states an injury to the temporo-parietal junction in the brain causes an out-of-body experience, yet this theory leaves holes in how a person suffering from an NDE can gather new sensory information while their brain activity is nonexistent. In order to learn more about NDEs and answer questions about the nature of the mind within the context of an NDE, we must gather a larger sample size of people who have had an NDE. Martens (1994) proposes for an NDE register for cardiac arrest survivors. The problem is that even if one is to gather hundreds of testimonies, the testimonies will always be retrospective, thus causing doubts to their validity. Also, we would be unable to know if the results would only apply to cardiac arrest survivors or if they were universally applicable to all NDEs. There may never be a way to accurately gauge an authentic NDE using scientific measures, but alternative research focused on the TPJ is, in my opinion, the physicalists best chance at adequately explaining the nature near-death experiences. Near-death experiences have a particular uniqueness about them. Regardless of what a near-death experience means for physicalism and dualism, it is indisputable that NDEs allow philosophers to ask new questions about the state of our consciousness and how we receive sensory information. These facets alone should implore more people to study and question near-death experiences in order to gain more information about the human mind.

REFERENCES

- Greyson, Bruce. 2006. "Near-Death Experiences and Spirituality." *Zygon: Journal of Religion and Science* 41 (2): 393–414.
- Moody, Paul. 1975. *Life after Life: The Investigation of a Phenomenon—Survival of Bodily Death*. Atlanta: Mockingbird Books.
- Van Lommel, Pim. 2006. "Near-death experience, consciousness, and the brain: A new concept about the continuity of our consciousness based on recent scientific research on near-death experience in survivors of cardiac arrest." *World Futures*

62 (1 & 2): 134–151.

Ring, Kenneth. 1982. *Life at Death: A Scientific Investigation of the Near-Death Experience*. New York: William, Morrow & Co.

Dell'Olio, Andrew. 2010. "Do near-death experiences provide a rational basis for belief in life after death?" *Sophia* 49 (1): 113–128.

French, Christopher. 2005. *Near-death experiences in cardiac arrest survivors*. In Steven Laureys (ed.), *Boundaries of Consciousness*. Amsterdam: Elsevier.

Sabom, Michael. 1998. *Light and Death: One Doctor's Fascinating Account of Near-Death Experiences: "The Case of Pam Reynolds."* Grand Rapids, Michigan: Zondervan.

Burchett, Scott A. and Phillip T. Hicks. 2006. "The mysterious trace amines: Protean neuromodulators of synaptic transmission in mammalian brain." *Progress in Neurobiology* 79 (5–6): 223–46

Whinnery, J.E. 1997. "Psychophysiological Correlates of Unconsciousness and near-death experiences." *Journal of Near-Death Studies* 15 (4): 231–258.

Martens, P.R. 1994. "Near-Death Experiences in Out-of-Hospital Cardiac Arrest Survivors. Meaningful Phenomena or just Fantasy of Death?" *Resuscitation*. 27 (2): 171–5.

Arzy, Shahar; Blanke, Olaf. 2005. "The Out-of-Body Experience: Disturbed Self-Processing at the Temporo-Parietal Juncti." *The Neuroscientist* 11 (1): 16–24.