

## **OUT-OF-BODY EXPERIENCES AS PART OF NEAR-DEATH EXPERIENCES IN SAM PARNIA'S RESEARCH**

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### **Introduction**

This short research was written in the context of the course "paranormal phenomena", and deals with a topic that is difficult to categorize. On the one hand, the phenomenon of near-death experiences (NDE) is quite widespread, almost to the extent that it could be considered "normal" and take its place next to other unexplained experiences that a person can have in the context of various extreme physical conditions and which are continuously recorded in hospitals all over the world. On the other hand, the phenomenon of near-death experiences and within them that of the out-of-body experience (OBE), escapes and exceeds the "normality" of other experiences that arise in extreme physical situations. For thousands of years humanity has been dealing with the subject of life after death and is looking to find evidence, answers and uncover even a little of the great secret of death. Man has always been interested in the nature of the soul, or in other words, consciousness. In the independence of the soul from the body. Here these two questions are intertwined in a mysterious phenomenon that leaves even doctors/researchers without answers that could be a little definitive.

Approaches to the subject are various. Roughly, they are divided into two parts: those that try to find an absolutely biological solution (materialism), and those that, while looking for measurable, scientific evidence, remain open to exploring and accepting various types of explanatory models.

Whatever the approach and the results of the research, and whatever the criticism of each one, it is certain that each research is of great importance to man's ability to understand this complex subject.

While the researches on the topic are relatively few in scientific terms, there are several researches and approaches accordingly. Our choice to engage with Sam Parnia's research can be justified by its originality, Parnia's long involvement with the subject, and the fact that he himself is a physician who deals with patients who have suffered cardiac arrest. Another reason why he piqued our interest is his open approach combined with his uncompromising scientific and professional approach. In this paper we will briefly look at what near-death and out-of-body experiences are, Parnia's research with its conclusions and questions, and Parnia's colleagues' criticism of his research.

### **1. Near-death experiences.**

#### **1.1 What is a near-death experience.**

Near-death experiences are the set of phenomena that are characterized and categorized as the experiences confessed by people who for a time, usually after a heart or brain failure, are considered dead. The experiences described, and which have been collected and cataloged by various

researchers<sup>1</sup>, usually have the same characteristics. When positive, such experiences can include a variety of sensations, such as detachment from the body, feelings of levitation, absolute calm, safety, warmth, the experience of absolute separation, and the presence of a light.<sup>2</sup> When negative, such experiences can include feelings of hopelessness and unhappiness<sup>3</sup>. General features of the experience include impressions of being out of the body, visions of dead relatives and religious figures, and transcendence of egos and spatiotemporal boundaries. Many commonalities have been reported, although man's interpretation of these events often corresponds to his cultural, philosophical or religious beliefs.

As already pointed out, these experiences described in various articles and books dealing with the subject usually denote the same experiences<sup>4</sup>, more specifically, the ones we mention below. A feeling/awareness of being dead, a sense of peace, well-being and painlessness. A sense of detachment from the world. An out of body experience (OBE). A perception of one's body from an outside position, sometimes observing medical professionals performing resuscitation efforts. "A tunnel experience", or entering the dark. A sense of movement up or through a passageway or staircase, a quick movement towards and/or sudden immersion in a strong light that communicates telepathically with the person. An intense feeling of unconditional love and acceptance. Encounters with "Beings of Light", "Beings dressed in white". Also, the possibility of reuniting with deceased loved ones.<sup>5</sup>

NDEs are associated with changes in personality and outlook on life. A consistent set of values and belief changes associated with individuals who have had a near-death experience have been identified. Among these changes, some found a greater appreciation for life, higher self-esteem, greater compassion for others, less concern with acquiring material wealth, an increased sense of purpose and self-understanding, a desire to learn, increased spirituality, greater ecological sensitivity, and planetary concern and sense that one is more intuitive.<sup>6</sup> However, as we have already noted, not all subsequent effects are beneficial, circumstances are also described where changes in attitude and behavior can lead to psychosocial and psycho-spiritual problems.

## 1.2 Explanatory models.

There are various theories and scientific proposals on the subject of near-death experiences, moving between spiritual, purely scientific (biological) and what we could call intermediate ones, which while trying to investigate the phenomenon with scientific methods, do not reject the possibility of realities that exceed scientific knowledge and capabilities.

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<sup>1</sup> A particularly great example of an exploration of the phenomenon is that of the authors William Barrett and Raimond Moody, both of whom published books dealing exclusively with this subject, and in great detail. Their books are listed in the bibliography for further study.

<sup>2</sup> Steve Taylor, Near-Death Experiences and DMT, a neurological explanation of NDEs remains elusive. Psychology Today, October 12 2018. <https://www.psychologytoday.com/us/blog/out-the-darkness/201810/near-death-experiences-and-dmt>

<sup>3</sup> Marilyn A. Mendoza, What We Know About Near Death Experiences and how to help those who have them, Psychology Today, February 19, 2019. <https://www.psychologytoday.com/us/blog/understanding-grief/201902/what-we-know-about-near-death-experiences>

<sup>4</sup> Raymond A. Moody, *Life after Life, the investigation of a phenomenon survival of bodily death*, Bantam Books, New-York, 1976, p. 54.

<sup>5</sup> Juan C. Saavedra-Aguilar, Juan S. Gómez-Jeria, Lic. Q., *A Neurobiological Model for Near-Death Experiences*, Journal of Near-Death Studies, June 1989, p.206.

<sup>6</sup> Marilyn A. Mendoza, *Aftereffects of the Near Death Experience Adapting to an "exceptional experience"*, Psychology Today, March 12, 2018. <https://www.psychologytoday.com/us/blog/understanding-grief/201803/aftereffects-the-near-death-experience>

#### a. Spiritual or transcendental theories.

Transcendental and spiritual theories are not ones that are easily found in books and manuals of scientific research. These theories are usually either personal or religious in nature and do not find much resonance in scientific circles. But these are reported by the researchers as descriptions of the interpretation given by the people themselves who declare these experiences, which we can see in the books of Raymond Moody, William Barrett<sup>7</sup> and Sam Parnia. These theories view near-death experiences as genuine. That is, as experiences as real as any other experience that man has when he is in a conscious state.

Here the NDE represents evidence of the supposed immaterial existence of a soul or mind, which would leave the body after death. Therefore, an NDE will provide information about an immaterial world where the soul will travel when it ends its existence on earth.<sup>8</sup>

#### A. PSYCHOLOGICAL EXPLANATIONS

Here we will refer to the main psychological theories prevailing today.

- Terror management theory.

According to this theory, death anxiety prompts people to adopt worldviews that protect their self-esteem, worth, and the viability and allow them to believe that they play an important role in a meaningful world. Thus, people must isolate themselves from their deep fear of living an insignificant life destined to be erased by death. One way to deal with this fear is to make sure they are part of an important group. TMT (Terror Management Theory) suggests that individuals are motivated to develop close relationships within their own cultural group in order to convince themselves that they will somehow - albeit symbolically - live on after their inevitable death. While some of the seminal studies on which TMT is based have not been replicated, thus drawing criticism within the field of psychology, the framework still resonates for many.<sup>9</sup> For this reason, says this theory, man can interpret an NDE spiritually, precisely because he is "made" by his fear of death to believe that there is a life after death and that what he sees during the NDE is reality and not just a malfunction of his brain.

- The Depersonalization Model.

A depersonalization model was proposed in the 1970s by psychiatry professor Russell Noyes and clinical psychologist Roy Kletti, which proposed that the NDE is a form of depersonalization experienced under emotional conditions such as life-threatening danger, potentially unavoidable danger, and that the NDE can best be understood as hallucinations. According to this model, those facing imminent death become detached from their surroundings and bodies, no longer feel emotions, and experience time distortions.

This model, however, seems too limited to explain NDEs for people who do not have the sensation of being out of their bodies. Unlike most descriptions of NDEs, the experiences are dreamlike, unpleasant, and characterized by anxiety, panic, and emptiness. Also, during NDEs,

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<sup>7</sup> Barrett William, *Death-Bed Visions*, Methuen & CO., London, 1926. We do not mention a specific page here since the whole book deals with the subject in detail, in each of its chapters, citing at the same time the examples of audio-visual experiences and their interpretation by the people who experienced them.

<sup>8</sup> Sam Parnia, *What Happens When We Die, a groundbreaking study into the nature of life and death*, Hay House, Carlsbad, 2006, p. 27.

<sup>9</sup> Patrick McNamara, *Terror Management Theory (TMT) and REM Sleep*, Psychology Today, July 5, 2020. <https://www.psychologytoday.com/us/blog/dream-catcher/202007/terror-management-theory-tmt-and-rem-sleep>

people who describe them state that they remain very clear about their identity and their sense of identity does not change unlike those who experience depersonalization.<sup>10</sup>

- The expectation model (expectancy model).

Another psychological theory is called the expectancy model. It has been suggested that although these experiences could seem very real, they were actually constructed in the mind, either consciously or subconsciously, in response to the stress of an encounter with death (or perceived encounter with death), and did not correspond to an actual event. In a way, they are like wish-fulfillment: because someone thought they were going to die, they experienced certain things according to what they expected or wanted to happen. The fantasy of a heavenly place was actually a way to soothe the anxiety of knowing that they were close to death. Subjects use their own personal and cultural expectations to imagine a story that will protect them from an imminent threat to their lives. The problem with this theory is that the subjects' accounts often differed from their own religious and personal expectations about death, which contradicts the hypothesis that they might have imagined a scenario based on their cultural and personal background. This is especially evident in children's accounts of NDEs. These are similar to those of adults, although children are less affected by religious and cultural influences about death.<sup>11</sup>

- Dissociation model.

The dissociation model suggests that the NDE is a form of withdrawal to protect a person from a stressful event. In extreme circumstances, some people may withdraw from certain unwanted emotions to avoid the emotional impact and suffering associated with them. The person is also detached from their immediate environment.<sup>12</sup>

- Birth model.

The birth model suggests that near-death experiences could be a form of reliving the birth trauma. As a baby travels from the darkness of the womb to the light and is greeted by the love and warmth of nursing and medical staff, and so, it is suggested, the dead brain could recreate the passage through a tunnel into light, warmth and affection. This theory also presents some problems, for example, reports of exiting the body through a tunnel are common among both cesarean and natural births. Also, newborns lack the visual acuity, mental alertness, and ability to record memories of the birth experience.<sup>13</sup>

## B. PHYSIOLOGICAL EXPLANATIONS

Explanations that are categorized as physiological are divided into several groups, depending on the specific perspective or method chosen to investigate the phenomenon.

There are neurochemical, neuroanatomical, and so-called multi-factorial explanations that attempt to fit all or many neurophysiological explanations into a single model.

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<sup>10</sup> Bruce Greyson, Emily Williams Kelly, and Edward F. Kelly, *Explanatory Models of the Near-Death Experience*, Research Gate, January 2009, p. 216. [https://www.researchgate.net/publication/288006914\\_Explanatory\\_models\\_for\\_near-death\\_experiences](https://www.researchgate.net/publication/288006914_Explanatory_models_for_near-death_experiences)

<sup>11</sup> Bruce Greyson, Emily Williams Kelly, and Edward F. Kelly, *Explanatory Models...*, 2009, p. 214.

<sup>12</sup> Harvey Irwin, *The near-death experience as a dissociative phenomenon: An empirical assessment*, Journal of Near-Death Studies, January 1993, p. 96.

<sup>13</sup> *AIPR Information Sheet: Near-Death Experiences*, The Australian Institute of Parapsychological Research, 2016. <https://www.aiprinc.org/near-death-experiences/>

The main physiological explanations are: cerebral hypoxia, anoxia and hypercapnia, endorphins and other neurotransmitters, and abnormal activity in the temporal lobes. Neurobiological factors in experience have been investigated by researchers in medical science and psychiatry. Among the researchers and commentators who tend to emphasize a naturalistic and neurological basis for experience is the British psychologist Susan Blackmore<sup>14</sup>, with her "dying brain" hypothesis<sup>15</sup>. It is important to point out here that even these explanations, while they can shed light on the state of the brain during the NDE, and while many researchers tend to rely on them, present certain problems and limitations. In part it is the same problems that arise in the other theories. Physiological-biological explanations usually present a state in which the brain is plunged into chaos, its functions being drastically reduced and fragmented, which does not correspond with descriptions of NDE experiences, which, as mentioned above, are usually very holistic and positive.

## **2. Out of Body Experiences.**

### **2.1 What is an out-of-body experience?**

The out-of-body experience, or Out of Body Experience, is a phenomenon in which the person is outside his body, as he usually states later.

There are various types of OBEs such as those that occur during sleep or during vigorous physical activity such as mountain climbing. There are also out-of-body experiences that are intentionally induced in various ways. Due to the limited scope of this work, we will not deal with them. The most important type of natural (uninduced) out-of-body experience, and the one most studied of all others, is the near-death experience (NDE) OBE. The researches on the subject are many and different in the method and the conclusions they propose.

### **2.2 The out-of-body experience in the context of the near-death experience.**

The main characteristic of the near-death experience is the out-of-body experience<sup>16</sup> along with the other experiences described by the people who declare it, such as the feeling of absolute calm and the presence of light, as already pointed out.

A near-death experience OBE is one of the few types of OBE that occur spontaneously, without being intentionally induced. For this reason, but not only, they cause a great interest in the scientific community, with the big question, if they can really prove in some way the possibility of the existence of human consciousness (consciousness) independently of physical existence. Since many people who have experienced such an experience, interpret it as a sign or proof of life after death, which most of the time completely changes their life. The answers given by scientists dealing with the subject to this question are varied, as we have already noted on the subject of NDEs in general.

In this small survey we would like to concentrate on a small series of the most famous and interesting studies that have been done on this topic. These are the findings of cardiologist Sam Parnia.

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<sup>14</sup> Susan J. Blackmore, *A postal survey of OBE and other experiences*, Journal of the Society of Psychical Research, Volume 52, No. 796, February 1984, p. 225.

<sup>15</sup> Sam Parnia, *What Happens When We Die...*, 2006, p. 19.

<sup>16</sup> Bruce Greyson, Emily Williams Kelly, and Edward F. Kelly, *Explanatory Models...*, 2009, p. 220.

### 3. Investigations by Sam Parnia.

#### 3.1 First survey.

In 2001, Sam Parnia and colleagues published the results of a year-long study of cardiac arrest survivors. 63 survivors were interviewed. 7 had memories of the time they were unconscious and 4 had experiences that, according to the study criteria, were NDEs. The out-of-body claims were tested by placing figures on suspended boards that face the ceiling and are not visible from the floor. The number of participants was small, and while a fair number of NDE cases were reported, the research did not yield positive results in terms of OBE<sup>17</sup>. At the same time, however, the physician-researchers could not find a physiological explanation for the NDEs that occurred.<sup>18</sup> Which leaves, at least for them, the question of the independence of consciousness open.<sup>19</sup>

#### 3.2 AWARE Research.

While at the University of Southampton, Parnia was the principal investigator of the AWARE Study, which began in 2008. This study, completed in 2012, involved 33 researchers at 15 medical centers in the UK, Austria and the US and examined consciousness, memories and awareness during cardiac arrest.

The research progressed as follows:

The AWARE study has two objectives, (1) to examine the frequency of awareness and a variety of mental experiences during cardiac arrest resuscitation and (2) to develop a methodology to test the accuracy of visual and auditory perception reports against the duration of the cardiac arrest. The study began in 2008 and, in the first four years, examined 2,060 patients.

Cardiac arrest survivors were interviewed in three stages, (1) to determine if there were any memories or perceptions during the cardiac arrest, (2) to determine if the memories or perceptions constitute an NDE (with or without auditory/visual awareness) and (3) to verify the accuracy of any auditory/visual perceptions of the physical environment experienced during the NDE.

To assess the accuracy of visual awareness claims, 50 to 100 racks were installed in each hospital near the ceiling of areas where CPR was likely to occur.<sup>20</sup> Each shelf had an image that was only visible from above the shelf. The hypothesis of the study was that the images on the shelves could test the validity of claims of an NDE or even OBE, if enough cases of NDEs occur where the patient had visual awareness from a vantage point high enough to see the image.

Of the 2,060 patients in the study, only 140 survived and were well enough to have a Stage 1 interview. Of those 140, 39 were unable to complete the Stage 2 interview, mainly due to fatigue. Of the remaining 101 patients interviewed in Stage 2, only 9 were considered to have had an NDE (9%) and of these 9 NDErs, only two reported memories of auditory/visual awareness of the physical environment. Of these two, one was unable to attend an in-depth interview at Stage 3 due to ill health.<sup>21</sup> The other patient had verified perceptions of NDE events:

During the NDE, the patient felt euphoric.

The patient heard a voice say "shock the patient, shock the patient".

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<sup>17</sup> Sam Parnia, D.G. Waller, R. Yeats, P. Fenwick, *A qualitative and quantitative study of the incidence, features and etiology of near-death experiences in cardiac arrest survivors*, Resuscitation Interdisciplinary Medical Journal, volume 48, issue 2, pages 149-156, 2001.

<sup>18</sup> Sam Parnia, D.G. Waller, R. Yeats, P. Fenwick, *A qualitative and quantitative study...*, 2001, p. 151.

<sup>19</sup> Sam Parnia, *What happens when we die...*, 2006, pp. 41-43.

<sup>20</sup> Sam Parnia, Josh Young, *Erasing death...*, pp. 227, 230.

<sup>21</sup> Sam Parnia, Josh Young, *Erasing death...*, pp. 234-237.

The patient stood up near the ceiling and looked down at his physical body, the nurse, and another man, bald and "a rather fat man," wearing blue scrubs and a blue hat. The patient could tell the man was bald because of where the hat was.

The next day, the patient recognized the bald man who attended him during the resuscitation. The medical record confirmed the use of an AED (Automated External Defibrillator) which would have given the automated instructions heard by the patient and the role the identified man played in the resuscitation.

Unfortunately, both NDE cases with auditory/visual sensitivity occurred in non-acute areas of the hospital, without shelves, so further analysis of the accuracy of their statement was not possible.

## Conclusions.

The authors of the study concluded that:

In most cases of cardiac arrest, the memories of visual awareness compatible with so-called out-of-body experiences are not of the nature of a dream or hallucination, but of an experience that is pure and real, just like the experiences of everyday life, or even more real. A number of NDErs may have vivid near-death experiences but do not recall them due to the effects of brain injury or sedative drugs on memory circuits, as evidenced by the fact that 90% of cardiac arrest survivors remember nothing of the experience.<sup>22</sup>

In both cases of OBE noted and investigated, the cardiac arrest was of a very short duration (up to 5 minutes)<sup>23</sup>, which may partially prove the authenticity of the statements in the research interviews: if the arrests were of short duration, the brain trauma is smaller or minimal, so the person's ability to remember an NDE or OBE is greater, which is almost impossible in people who have suffered from severe brain trauma.

While the researchers were unable to collect enough evidence/testimony that could substantiate any hypothesis, the results brought to light new findings that can promote new research on the topic. The relationship between the duration of the interruption and the memory of the experience is of great importance. The question remains whether the NDE occurred during the cardiac arrest, or after CPR.

The results of the study were published in October 2014. Both the initiation and the results of the study were widely discussed in the media.

## 3.3 AWARE II Research.

The AWARE II trial is a two-year observational study of 900-1,500 cardiac arrest patients, with subjects recruited on August 1, 2014, and a trial end date of May 31, 2017.

## Methods.

In this research paranoia and other research collaborators presented novel methods for administering audiovisual stimuli to test implicit and explicit memories using a computer with images and sounds delivered during continuous CPR.

## The results.

Among 465 in-hospital 5-minute heart attacks, 44 (9%) survived and 21 were interviewed. Of these, 4 (19%) reported explicit memories, including (internal) cognitive processes such as feeling

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<sup>22</sup> Sam Parnia, Josh Young, *Erasing death...*, p. 253.

<sup>23</sup> Sam Parnia, Josh Young, *Erasing death...*, p. 254.

peaceful, happy and perceiving seeing relatives, while other memories indicated external awareness e.g., listening to people talk. One of the 19 correctly recalled the audio stimuli given during CPR, but none recognized the visual test. In this limited sample, there were no signs of implicit learning. These were then compared to 22 reports from cardiac arrest survivors who self-reported an NDE. The following themes emerged from these statements: 1) feeling joy and peace (95%), light perception (86%), tunnel (59%), a review and judgment of significant life events, including a person's actions and intentions (54%), and an overall sense of positive transformation after the event (95%).

## Conclusions.

External awareness and internal cognitive activity may occur during cardiac arrest. However, it is not clear whether explicit recall adequately describes the full range of cognitive processes during inhibition, or whether implicit memories can also be formed. For some survivors, memories lead to greater meaning in life and a positive transformation, which contrasts with negative psychological outcomes such as PTSD (Post Traumatic Stress disorder). In this context, in place of the NDE a more appropriate term might be the transformative experience of death (TED-transformative experience of death). Further studies are needed to delineate the role of implicit and explicit learning and how cognitive activity during CPR may relate to the quality of brain resuscitation and overall psychological outcomes.<sup>24</sup>

## 4. Critique and comment on Sam Parnia's research.

Acceptance of Parnia's research as would be expected from a study on such a complex and sensitive topic was rather cautious, as can be seen from the various comments and criticisms we find in connection with the publication of the AWARE and AWARE II research. We will address the various comments shortly.

One of the researchers who expressed the greatest reservations about Parnia's findings is a neuroscientist Steven Novella, who claimed that a single case verified from the set of "highly selected and filtered from a larger data set" shows almost nothing. He also opined that Parnia is desperately trying to save the study by simply citing subjective accounts of what people remember long after the event. According to Novella, what Parnia is trying to prove is a case of OBE is actually a "memory" that is built in the mind of the person stating the fact, during the ongoing process of his recovery and has nothing to do with anything other than the normal functioning of the mind (in a period of trauma<sup>25</sup>). Another critical comment was heard from parapsychology researcher Dr. Caroline Watt, who said that the period of consciousness in the patients that Parnia mentioned was not relevant to his objective study. Rather, it was a patient who gave a supposedly accurate account of events during his recovery. He didn't recognize the images; he described the noise of the defibrillator. Watt believes this proves nothing as many people know what happens in an emergency environment from television.<sup>26</sup>

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<sup>24</sup> Sam Parnia, Tara Keshavarz, Meghan McMullin, Tori Williams, *Awareness and Cognitive Activity During Cardiac Arrest*, AHA Journals, November 11, 2019. [https://www.ahajournals.org/doi/10.1161/circ.140.suppl\\_2.387](https://www.ahajournals.org/doi/10.1161/circ.140.suppl_2.387)

<sup>25</sup> Steven Novella, *AWARE results finally published-no evidence of NDE*, Neurologica Blog, October 9, 2014. <https://the-ness.com/neurologicablog/index.php/aware-results-finally-published-no-evidence-of-nde/>

<sup>26</sup> Laurin Bellg, *AWARE study initial results are published*, International Association for Near-Death Studies INC, April 22, 2015. <https://www.iands.org/news/news/front-page-news/1060-aware-study-initial-results-are-published.html>

An important and detailed critical commentary, which we believe deeply and purposefully analyzes the problems arising in Parnia's research results, belongs to researchers Robert and Suzanne Mays, NDE researchers (Robert is a chemist and software developer and Suzanne is in medical secretarial science). Due to the short length of this work, we will not refer to the comment in all its details, but we will try to get the gist. Their opinion is as follows:

According to Mays, the design of the study has significant problems. First of all, the fundamental issue is that it examines only those cases that have occurred during cardiac arrest and only in an experimental model of hidden optics, targets placed on shelves. The goal of the research is to demonstrate consciousness activity while there was no electrical activity in the brain.

The main problems of the investigation, according to the Mays are divided into three points:

- Very few cases were found for a huge investment of effort.

Of the original 2,060 CA cases reviewed, 95% were excluded before an assessment was made as to whether the case involved an NDE. The remaining 101 patients had the stage 2 interview to determine whether there was an NDE and whether there were memories of auditory/visual awareness of the physical environment. There were 9 NDE cases. Of these only two cases were suitable for the Stage 3 interview to determine the accuracy of statements and only one could complete this detailed analysis.

- Experimental vs. Phenomenological emphasis.

There is general confusion regarding the method used for experiments, that the only acceptable scientific evidence comes from experiments conducted under controlled conditions. However, there are many phenomena where controlled experiments are impossible or impractical. In these cases, scientists use phenomenological research in conjunction with theory development. With this alternative method, the researcher looks for anomalous phenomena (or anomalous aspects of a known phenomenon) and develops a theoretical model that explains the phenomenon, including the anomalous aspects. The explanation may or may not be mathematical in nature. NDEs are very amenable to phenomenological investigation, and the variant of NDEs contains many anomalous or paranormal aspects, where an anomaly may occur on a small number of occasions but is nevertheless repeated enough to warrant theoretical developments. Imposing an experimental requirement in the investigation of NDEs, as in the AWARE study, is problematic because the experimental conditions cannot be controlled.

- Reference to cardiac arrest cases as the best model.

Various studies have convincingly shown that there is no difference in intensity and content between NDEs resulting from sleep, syncope (fainting) and meditation and those resulting from coma-related events such as: drowning, cardiac arrest, severe disease. Much theoretical study and analysis has shown that NDEs occur in their "purest" and "deepest" form when the brain's electrical activity stops. Thus, any anomalous aspect that can be shown to have occurred during the electrical flatline will provide the clearest evidence that consciousness can function independently of the brain. Thus, the best model of NDEs that occur "near death," as Parnia and other NDE researchers argue, is "true death," that is, clinical death that occurs by cardiac arrest. The choice of clinical death from cardiac arrest as the "gold standard" for NDE evidence is based, according to Mays, on a faulty assumption and unfortunate previous analyzes of NDE data. Also, the requirement to prove that there was no electrical brain activity and therefore an actual "separation" of mind from body is very problematic because of the generally short interval between capture in a hospital setting and resuscitation. The cardiac arrest model is also problematic because it provokes endless debate

about exactly when NDE awareness occurred, when brain activity stopped and restarted, and whether there was residual brain activity in between.<sup>27</sup>

## Conclusions

After exploring the subject of out-of-body experiences in the context of near-death experiences, we see that any investigation of the phenomenon is difficult. In addition to the difficulty of finding subjects for a near-death and out-of-body experience statement, as we have seen, of those who survived cardiac arrest, roughly between 10% and 20% were able to report an NDE or something similar to an NDE, even fewer were able to register further statements about an out-of-body experience, and only unique cases can correspond to a positive answer to Parnia's research question, whether there really is a function of consciousness separate from the function of the brain. While the results of Parnia's researches face severe criticism, and while some points of this criticism are of great importance for future research in this field, Parnia himself is curious, although he does not overlook the purely scientific side, saying: "*Thus, while it was not possible to absolutely prove the reality or meaning of patient experiences and sensitization claims, ... It was impossible to disprove them either, and more work is needed in this area. Clearly, the recalled experience around death now deserves further genuine research without prejudice*"<sup>28</sup>. In our opinion, having also studied Parnia's research, the books of William Barrett and Raymond Moody, the various researches and articles and also the criticism of the work of Parnia, the AWARE and AWARE II studies, are of great value. While they are currently struggling to show any positive results, even the unique cases they report are worthy of attention. However, we consider that Mays's criticism is very important since it shows Parnia's weak points and thus opens up the possibility of a new approach to the subject. Of particular importance to us seemed to be the comment on the research method, which concerns the way in which the findings are examined and in which the hypotheses are built. We would venture to say that it seems to us that phenomenological research together with theoretical development could perhaps be a better avenue for further research. At least it would be possible to try a new way, since the one used by Parnia did not bring results to the satisfaction of the scientific community. The question, however, as Parnia points out, remains open.

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<sup>27</sup> Laurin Bellg, *AWARE study initial results are published...*, 2015. <https://www.iands.org/news/news/front-page-news/1060-aware-study-initial-results-are-published.html>

<sup>28</sup> Sam Parnia, Josh Young, *Erasing death...*, p. 256.

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