

## **On the Scope of Analysis for the AWARE Study**

To the Editor:

Sam Parnia (2008a) recently announced the AWARE study (AWAREness during REsuscitation) which will be conducted by the Human Consciousness Project<sup>SM</sup>, an international multidisciplinary collaboration of scientists and physicians to study the relationship between the mind and the brain during clinical death. The researchers will examine prospectively 1,500 survivors of cardiac arrest across 25 participating hospitals in Europe and North America for 36 to 60 months. The study organizers expect as many as 300 of the cardiac arrest survivors to report a near-death experience (NDE), of whom perhaps 30 to 60 patients will also report an out-of-body experience (OBE) with perceptions of the physical surroundings.

One major objective of the study is to test whether the perceptions reported by the OBE patients during the cardiac arrest episode are veridical (verified as accurate). The study team will place complex images on shelves above the heads of 50 to 100 hospital beds in the participating hospitals. These images will be visible only from the ceiling. In addition, each patient's brain oxygen level will be measured during resuscitation using a cerebral oximeter that measures changes in regional saturation of oxygen in the cerebral cortex using infrared sensors placed on the patient's forehead. If the initial results include some positive cases, the study team may install tablet computers to show random images and video recording cameras to record both the resuscitation and the images to allow verification of perceptions of the resuscitation procedure, including idiosyncratic events such as the doctor knocking over a bucket of instruments.

### **What are the Criteria for Evaluation?**

Parnia (2008b) stated the criteria for evaluation of possible veridical perception as follows:

If after 36 months, hundreds of patients report being 'out of body' yet no one can report seeing the images, then we must consider these reports to be nothing more than illusions. If on the other hand there are hundreds of positive reports, then we will have to redefine our understanding of the mind and brain during clinical death.

Parnia (personal communication December 29, 2008) clarified, "In terms of seeing an image we will have to wait to get a large enough sample and see if they claim to have been in the direct area above the images before considering whether they could or could not have seen them. At any rate all results will be positive in terms of the overall study whether the images are identified or not." He further clarified the last sentence (personal communication February 24, 2009), "we will document all experiences from the cardiac arrest period."

We are excited that Parnia and his collaborators are planning the AWARE study because it presents an excellent opportunity for systematic analysis of cases to assess whether NDE OBE perceptions are veridical. The focus of the study is on perceptions of the hidden images. We suggest that near-death experiencers (NDErs) are likely also to report *other* veridical perceptions and that the study's researchers should give equal emphasis to these other perceptions for verification. For example, suppose a patient gives the response, "No, I didn't notice any shelf in the room – I was looking down at my body. But I noticed an odd shaped birthmark on the back of the doctor's neck when she put the paddles on my chest," and on further investigation, the patient's drawing of the birthmark matches the mark on the neck of a doctor who had treated the patient only while the patient was unconscious. We suggest that this case would be as strong a case of corroborated veridical perception as a verified perception of the hidden image.

### **Experimental Conditions Can't be Controlled**

A major difficulty with the study's experimental design is that the experimental conditions can't be controlled. First, the experiment can't control where the NDEr is "located" in the room (usually reported at the ceiling in a corner opposite the bed) or where the NDEr "looks." In a similar prospective study with hidden images, Penny Sartori (2004) reported some NDE OBE patients did not rise high enough to view the hidden image and some reported viewing the scene from a position opposite from where the image was located. Other NDE OBE patients have reported focusing their attention on their body or on the actions of the resuscitation

personnel, to the exclusion of everything else. Thus, the hidden image on a shelf above the patient's head may frequently be out of the NDEr's area of visual focus.

Second, the experiment can't control how long the OBE component of the NDE lasts and therefore how much opportunity the NDEr has to look around and "see" the hidden image. The OBE may be interrupted by some other aspect of the NDE (for example, being drawn into a tunnel) and the NDEr "leaves" the material environment, or it may be interrupted by the resuscitation and the patient's consciousness is brought back to the physical body. With increasing improvements in resuscitation technology, the latter scenario may become more common. In either case, the OBE portion of the experience may be so brief the NDEr may not see much at all, and because their attention did not have time to focus, what they report seeing may be incomplete or inaccurate.

Third, an accurate report of a hidden image will not, in itself, establish the timing of the perception. Skeptics will be able to argue that the perception was made by some other means such as extrasensory perception or a lucky guess, either before the cardiac arrest or after resuscitation. However, an accurate perception of the hidden image that is reported in the context of other verified perceptions of the resuscitation will establish the time of the perception, which then can be correlated with other information about the physiological condition of the patient.

In the five prior prospective studies of NDEs involving the detection of remote visual targets, the researchers used a variety of different targets and placements in the room. In no study did the researchers report that any NDEr had identified a target (Augustine, 2007, pp. 230–234). All of these studies were small; in three of them the researchers reported no NDEs. In the other two studies, they reported NDEs with an OBE component but the patients either reported only the early stages of an OBE (Lawrence, 1997, p. 159), did not rise high enough to view the hidden image, or were viewing from the wrong location (Sartori, 2004). Increasing the number of patients in the present study will provide more OBE cases, but even with 30 to 60 cases, it is possible that no patient will perceive the hidden image. However, patients might report other veridical perceptions.

### **Veridical Perceptions Do Occur**

Indeed, a number of cases of veridical perceptions *have* occurred during cardiac arrest resuscitation and were verified, at least informally. In the Sartori prospective study, a patient reported seeing the physiotherapist peeking around the curtains during the resuscitation to check on him, and the researchers verified those perceptions (Sartori, Badham, & Fenwick, 2006). Kimberly Clark Sharp (1995; 2007) reported that patient Maria's perceptions of a tennis shoe on a ledge outside a third story window in the hospital during her resuscitation were accurate, that Sharp recovered the shoe, and that Maria recounted the story to a number of hospital workers at the time. Rudolf Smit (2008) reported that a patient later recognized the nurse who had removed his dentures during resuscitation and accurately described the wooden tray where they were placed and other features of the hospital room, even though he was completely unconscious. Other cases occurring during resuscitation include a patient who saw a penny out of normal sight on top of one of the cabinets in the room, which a nurse later found (Morris & Knafl, 2003, p. 155), a patient who saw a nurse unsafely opening a glass vial in another room (Moody & Perry, 1988, pp. 19–20), and three cases that Kenneth Ring and Madelaine Lawrence (1993) reported: a red shoe on the roof of the hospital that a patient saw and a doctor later recovered, plaid shoelaces that a patient saw and that the nurse who had worn them later confirmed, and a yellow smock that a patient saw and that the nurse who had worn it later confirmed.

We suggest that all perceptions of physical reality reported by the OBE patients in this study should be investigated and verified. The fact that a patient can accurately describe in detail the unique sequence of events during their resuscitation is evidence of veridical perception and helps to establish *when* those perceptions occurred. If all or most of the patients with extensive OBE perceptions can do this, it would constitute a strong case for veridical perception. However, other explanations are possible; for example, the perceptions could have been imagined, mentally constructed, or inferred from subliminal sensory awareness, from prior general knowledge, from expectations derived from earlier experiences, from information that others supplied, from physical aftereffects (for example, soreness from defibrillation), or from lucky guesses (Blackmore, 1993).

Therefore, detailed verification should focus on cases where other possible explanations can be eliminated unambiguously. To eliminate the possibility of subliminal sensory awareness, the perceptions should be purely visual information (that is, not involving other senses) which was out of the patient's physical line of sight. To eliminate the possibility of inference from prior general knowledge, from expectations, from information that others supplied, from physical aftereffects, and from lucky guesses, the visual information should be unusual or idiosyncratic, for example, a penny on top of a cabinet, plaid shoelaces, or a nurse unsafely opening a vial in

another room. To eliminate the possibility that the patient could have obtained information from others after the fact, the patient and other witnesses should be interviewed separately and as quickly as possible, and hospital staff should be instructed not to discuss the details of the resuscitation with the patient until after the patient interview. To increase the strength of corroboration and reduce the chance of lucky guesses, the interviewers should attempt to obtain as many details from the patient and witnesses as possible. These details could include drawings or sketches, for example, a drawing of the position and orientation of the penny on the cabinet or of how the nurse held the glass vial in her hands.

The hidden images, of course, would be among the possible idiosyncratic, purely visual perceptions the NDER could “see,” and the researchers should apply the same detailed verification to them, including having the patient sketch the image and its orientation. By verifying all other such unusual visual perceptions, the researchers can reduce the effects of uncontrolled experimental factors, such as where the NDER is “located” and where and how long the NDER “looks”. Detailed verification of all cases of OBE perceptions of the sequence of the resuscitation will help establish when the perceptions occurred and will strengthen the case that veridical perceptions do occur.

## Recommendations

We recommend that the AWARE researchers collect and verify in detail all NDE OBE perceptions using a prescribed investigative protocol (1) to establish where the patient was “located” in the room, how long the patient was “present,” and where the patient’s “attention” was focused during the resuscitation; (2) to record and verify all aspects of the patient’s perceptions during the OBE portion in detail, especially purely visual, idiosyncratic perceptions, including the hidden images; (3) to collect independent detailed accounts from other relevant witnesses; and (4) to collect ancillary evidence from NDErs and witnesses, like drawings and photographs of the relevant aspects of the experience.

We also recommend that the study focus verification on any idiosyncratic, purely visual perceptions that were out of the patient’s physical line of sight, but include all perceptions during the NDE OBE, since verified details of the perceived events of the resuscitation will help to establish *when* the perceptions occurred, which cannot be done from isolated reports of perceptions. This information can then be correlated with other information about the patient’s physiological condition.

We would also expect a small percentage of NDE OBE perceptions to be non-veridical (Holden, 2009, in press), for example, “seeing” the hidden image but giving a vague or inaccurate description. In some cases, NDE OBErs have perceptions but the content appears to be distorted, to be dream-like, or to have more symbolic than veridical content. It is important to analyze these cases, as well, to develop a complete understanding of the phenomenon.

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