

Response to “Could Pam Reynolds Hear?”

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ABSTRACT: In this article, I reply to Gerald Woerlee’s (2011, this issue) claim that during Pam Reynolds’ near-death experience (NDE), she actually could hear through normal means. I respond in terms of my 35 years experience as a clinical anesthesiologist, researcher into mechanisms of anesthesia and consciousness, and proponent of a theory of non-local consciousness put forth by mathematical physicist Sir Roger Penrose and me.

KEYWORDS: near-death experience, consciousness, awareness under anesthesia, out-of-body experience

I do not claim expertise on the Pam Reynolds case, nor any other particular case of near-death experience (NDE), out-of-body experience (OBE), extrasensory perception (ESP), etc., all of which I consider to be claims or examples of non-local consciousness. I *do* consider non-local consciousness to be quite plausible, as consciousness is, I maintain, a quantum process. Specifically, I ascribe consciousness to quantum computing in microtubules inside neurons, as mathematical physicist Sir Roger Penrose and I have proposed (Hameroff & Penrose, 1996; Penrose & Hameroff, 1995). Quantum processes are inherently non-local.

Thus, I stake my belief in non-local consciousness not in any one case or example but in (1) a multitude of claims from many cultures over eons, (2) scientific plausibility for non-local, quantum consciousness, and (3) the lack of any materialistic explanation for normal in-the-brain consciousness.

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Having said that, and having read Woerlee's account, and assuming it is accurate, especially in its portrayal of the case and the Sabom description, I have to say that Woerlee does cast some doubt that the Pam Reynolds case is airtight for non-local consciousness. It appears that the four examples of auditory awareness occurred when Ms. Reynolds was under general anesthesia, not when she was on hypothermic circulatory arrest. Thus it is possible she experienced awareness during anesthesia, a recognized complication of anesthesia. Against this (and in favor of something non-local) is the BAER, brain-stem auditory evoked response, which, at that time and still today, is the gold standard to monitor depth of anesthesia and to detect and prevent possible signs of awareness.

Woerlee did not present the actual BAER results; rather, he reported that they indicated Reynolds was unconscious and asserted they were faulty. He is correct that monitoring depth of anesthesia to avoid awareness is imperfect, as recent studies with EEG-based devices have shown (Avidan et al, 2011). But BAER is regarded as the definitive depth-of-anesthesia monitor.

So if we are willing to assume the BAER was faulty or improperly utilized, then it is possible Reynolds had awareness during anesthesia rather than an OBE or NDE. (We proponents of non-local consciousness should be even more rigorous than our critics!) Auditory perception is the sensory process most resistant to anesthesia. But, again, that is why BAER is so sensitive. If no auditory stimuli register in the brain, it is difficult to understand how auditory stimuli can reach consciousness. I know Dr. Spetzler and many of the anesthesiologists at Barrow-Neurological Institute. They were at that time, and remain, world leaders in neurosurgery and neuroanesthesia, so I find it highly unlikely that the BAER was improperly utilized. That would be tantamount to pilot error on Air Force One. Nonetheless, it is possible. In addition, the lack of EEG burst suppression by the barbiturates prior to bypass and hypothermia is surprising—and worrisome. But burst suppression is not necessary for adequate anesthetic depth.

Woerlee questioned how auditory consciousness can occur without ears (and visual consciousness without eyes). To me, these questions are not problematic, because the means by which auditory or visual consciousness occur *with* ears and eyes in awake, conscious subjects under normal circumstances is unknown. In both cases the conscious experience is in the brain, or rather, according to Penrose and Hameroff (1995), is at the level of Planck scale geometry in the brain but capable of distributing non-locally.

Nor am I bothered by Woerlee's objection to non-local consciousness passing through material objects, like a building floor and roof in another case described. If Penrose and I are correct, consciousness involves perturbations at the finest level of space-time geometry at the Planck scale—far, far smaller than atoms or sub-atomic particles. Non-locality is non-locality. Quantum entanglement is not blocked by material objects.

To me the most interesting developments in this field stem from brain monitoring at the time of death, for example as performed by Lakhmir Chawla, Associate Professor of Anesthesiology and Critical Care Medicine at The George Washington University Medical Center. Chawla and colleagues (2009) have found bursts of coherent high frequency EEG—seemingly indicative of conscious awareness—at the time of death, after heart rate and blood pressure have dropped off. I would be curious to hear how Woerlee, or any skeptic, would account for these findings.

I didn't know Ms. Reynolds passed away. May she rest in peace.

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