LETTER TO THE EDITOR

Is it Rational to Extrapolate from the Presence of Consciousness During a Flat EEG to Survival of Consciousness After Death?

To the Editor:

A few months ago, I read your review of Jeffrey Long's important publication, *Evidence of the Afterlife,* for *Noetic Now* of the Institute for Noetic Sciences (Holden, 2010). Although you have done an excellent job discussing his book, there is one specific idea about which I probably disagree with you.

It seems quite certain that there is some rather strong evidence for consciousness during a flat EEG caused by a cardiac arrest (Atwater, 1994; Cook, Greyson, & Stevenson, 1998; Holden, 2009; Moody, 1989; Parnia, et al., 2001; Rawlings, 1991; Rivas, 2008; Sabom, 1982, 1998; Sartori, 2008; Smit, 2008; Smit & Rivas, 2010; van Lommel, 2010; van Lommel, van Wees, Meyers, & Elfferich, 2001). Following an interview I gave to a local newspaper, a new case of this type was recently reported to me by a Dutch male ICU-nurse who wishes to remain anonymous. Many years ago, immediately following a succesful resuscitation, a photographer who had suffered a spinal cord lesion and manifested cardiac arrhythmia, gave my informant a detailed description of the specific medical procedures he had witnessed from above while floating in a corner of the room. The patient was able to give a correct account of all the activities that had taken place and all the persons present in the room, and he could also point out who had taken care of each individual action. All of the members of the medical team were extremely surprised, because the patient was supposed to have been completely unconscious at the time (Rivas & Dirven, 2009). I expect we may basically agree that there is a substantial amount of evidence of this specific type.

Now, as I understand it, you believe that this remarkable finding cannot be extrapolated to consciousness after death, at least not with the certainty manifested by Long. From a scientific point of view, it would still take quite a 'leap' to conclude that consciousness survives irreversible bodily death. It is on this issue that I would like to com-

ment. I have divided my comments into four parts, each one introduced by a particular question.

(1) Can the presence of consciousness during the absence of (neo)cortical brain activity be explained through known neurological processes?

Some scholars seem to believe that subcortical areas of the brain may vicariously support conscious cognition as soon as the cortex stops functioning. Others, such as Peter Fenwick (2004) and Pim van Lommel (2010), reject the hypothesis that a flat EEG during cardiac arrest is functionally compensated by an increase in subcortical activity. Please note that I am referring to a flat EEG, not to other conditions in which a surge of electrical energy could (hypothetically) be released as the brain runs out of oxygen (Chawla, Akst, Junker, Jacobs, & Seneff, 2009).

In my own view, even with the speculation that subcortical activity somehow increases during cardiac arrest, such a supposed increase does not explain how areas that normally are not involved in higher, typically-human cognition could instantly take over mental functions from the inactive cortex without any gradual transfer. I know of no evidence for this hypothetical possibility, and it is certainly incompatible with the basic materialistic assumption that mental functions are 'embodied' in neural networks in the brain. How could complex mental contents and cognitive 'programs' be transferred—within a fraction of a second—from the inactive cortex to subcortical structures?

Also, vicarious subcortical support could not explain enhanced, lucid cognition during a near-death experience (NDE). Even with serious consideration of the hypothesis that subcortical areas could take over normal cognition, I think you will agree such a vicarious support could certainly not enhance normal cognition up to the level reported by near-death experiencers (NDErs).

If I'm right, this line of reasoning implies that, from a functional point of view, a flat EEG caused by a cardiac arrest offers a remarkably close model of the lack of cortical brain activity after irreversible physical death. It does not matter that during clinical death, organs remain intact and resuscitation remains possible, as long as we are specifically looking at the relationship between the mind and the brain. Within the materialistic model, mental functions are considered embodied brain functions that most certainly cannot be instantly transferred from an inactive part of the brain to another part that is still active. In other words, materialism predicts that what holds for irreversible death (*there will be no conscious mental activity after death*) will also hold for clinical death with a flattened EEG

(i.e., *there will be no conscious mental activity during clinical death either*). In this functional sense, I believe that Sam Parnia (2005) is right that clinical death and irreversible death are part of the same continuum, the main difference being that clinical death is reversible and death is not.

(2) Could unknown somatic processes be responsible for consciousness during a flat EEG?

By unknown somatic processes, I mean processes that would be part of the body's physiology but thus far remain undiscovered by science.

In my view, it is of course possible that a large part of human (neuro)physiology is still uncharted territory, but there is no reason to believe that such unknown processes are related to the type of consciousness manifested in NDEs. Notwithstanding exceptional and controversial cases like John Lorber's patients with hydrocephalus (Lewin, 1980), as it stands, all physiological processes that are directly related to "higher" human cognition in average subjects seem directly linked to the brain's cortex. Even if some aspects of cerebral physiology are still unknown, this missing information could be relevant only if the (neo)cortex is still active. The point is, however, that the cases in point involve a flat EEG. Therefore, there is, as far as I can see, no reason to suppose that some unknown physiological process is responsible for consciousness during a flat EEG.

(3) Could a psychical process be responsible for consciousness during a flat EEG without thereby implying continuation of consciousness after death?

By 'psychical' process, I here mean a non-somatic process exclusively linked to the mind or consciousness. Many, though by no means all, modern parapsychologists try to work with a model of the brain-mind relationship that does not include survival after death. (They mostly seem to do so because this model is popular among other scientists, but we are not concerned with underlying motives here.) This approach goes back to the early days of psychical research when there was a battle going on between proponents of the 'spiritualist' or 'spiritist' theory (or what we often call 'survivalists' nowadays) and so-called 'animists' who held that any psychic phenomenon manifested at spiritualist séances or elsewhere could be satisfactorily explained by paranormal abilities of the unconscious mind of the living, or 'anima'. This animism lives on under the proponents of the so-called Super-Psi hypothesis, more commonly known as Super-ESP (Extra-Sensory Perception) hypothesis, who claim any paranormal phenomenon (also known as 'psi'), no matter how spectacular, can always be explained by paranormal 'superpowers' of the human subconscious mind.

In the context of NDE studies, the presence of consciousness is in most cases established on the basis of veridical impressions an NDEr claims to have had during clinical death. According to proponents of Super-ESP, there is no doubt that people may have veridical impressions. However, in their view, it is impossible that these impressions happened during a flat EEG, so that there must be an illusion involved regarding the exact moment the patient experienced the NDE. The NDE must have taken place *before* or *after* the flat EEG, when the patient's cortex was still sufficiently active to support some type of complex, human consciousness. In parapsychological terms, this means the veridical impressions must be based either on *precognition* (when the NDE occurred before the flat EEG) or on *retrocognition* (when it occurred afterwards).

If we wish to oppose the Super-ESP theory in the context of veridical perception in NDEs, we will not question the supposition that such veridical perception rests on ESP. All cases of paranormal impressions in NDEs can easily be explained by ESP, and even survivalists believe that the mind may demonstrate some type of ESP during an out-of-body experience. Most survivalists, including myself, even believe that ESP is part of the basic accessories of a discarnate psyche. What we will oppose, however, is the idea that ESP during an NDE must always be precognitive or retrocognitive in nature. The only reason for this animistic assumption is that our opponents would otherwise have to accept the reality of a conscious entity that survives without support from neurological activity in the cortex. I know of no (convincing) independent empirical evidence against the existence of such an entity, and 'real time ESP' clearly seems to offer a much more parsimonious explanation than precognition or retrocognition.

Now, an animist could try to make the theory more plausible by adding a psychological, motivational rationale to it. In the case of precognition this would mean that the patient was somehow aware that he or she would soon be clinically dead, so that precognitive ESP would be used to fill in the expected gap in consciousness. In the case of retrocognition, the patient would use a similar process, only in retrospect. In both cases, the process would serve a psychological need of reassurance by creating an illusion of having been conscious at a moment when consciousness would have been psychobiologically impossible. This 'illusion of the presence of consciousness' would bring some relief to a patient who knows (or fears) that the moment of irreversible death is soon approaching.

This theory seems far-fetched in itself, but there are cases in which

it certainly could not apply. I'm referring to (a) cases in which the patient had no reason to suppose that he or she was or would be flatlined, and also (b) cases, mostly in very young children, wherein the patient was not aware of any possible link between clinical death and death. Infants and toddlers have no clear understanding or related fear of physical death, which implies that no cases should exist involving claims of consciousness during a flat EEG in such patients. In other words, the theory that veridical impressions in NDEs are always based on precognition or retrocognition is not supported by any independent evidence, it is inherently implausible, and there are cases in which it simply could not apply.

Besides, as even the late Hans Bender (1983)—a German parapsychologist and champion of the animistic tradition—remarked, ESP is in itself a strong argument for a dualistic model of the mind-brain relationship. Any instance of ESP already implies that there is more to the mind than what can be explained by brain physiology alone, which also means there is some independent non-physical factor involved that probably survives brain death. *If it does not depend on the brain for its existence during physical life, brain death should not affect it either. Therefore, we have every reason to believe it will still be there after death.*

If this is true, it is strange to propose a theory that does include ESP but only makes sense if the continued existence of consciousness during clinical death is excluded a priori (Rivas, 2003).

(4) **Could non-physical factors annihilate consciousness after death?**

So far, I've only touched upon (partially) known 'earthly' processes, but what about unknown destructive factors that belong to a non-physical realm? Could these perhaps annihilate consciousness at the moment of death? There is absolutely no evidence for such factors so that this possibility remains purely speculative and unfounded. Also, as far as I know, there is not even a single religious or esoteric tradition that accepts the ultimate independence of consciousness but claims that consciousness will be automatically terminated by some daemoniacal power at the hour of death. Therefore, I personally find it very hard to take this theory seriously, but even if I did, accepting it would still be less parsimonious than assuming that an ultimately independent consciousness will simply continue to exist after bodily death.

In conclusion, based on the argumentation mentioned above, I personally believe that the survival of personal consciousness during a

flat EEG does indeed imply survival of consciousness after death. Acceptance of any other theory requires a substantially *greater leap* than acceptance of the theory of the ultimate ontological independence and survival of the conscious mind or self. It is the most parsimonious hypothesis we have of what happens to consciousness after death. Therefore, if we believe in a life (or conscious existence) after death based on cases of consciousness during a flat EEG, this is a *rational belief*, as the late Ian Stevenson would call it.

Based on the parsimonious and rational hypothesis of a continued conscious existence after death, we humans may wish to know what it will be like in the afterlife. The nature of the afterlife will probably be best understood after death, but we may try to get at least some limited picture of it by combining data gathered from NDEs with convergent data from other areas, such as pre-existence memories, intermission memories in children who remember previous lives, deathbed visions, and even some statements from purported discarnate entities (notably so-called drop-in communicators and communicators involved in complex cross-correspondences.)

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