

Near-Death Experiences and the Mind-Body Relationship: A Systems-Theoretical Perspective

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ABSTRACT: In this paper I support the view that NDEs provide empirical support for mind-body substance dualism and argue that a systems-theoretical analysis of the evidence is required to obtain valid insights into the nature of the mind as a substantial object existing in addition to the body. Without such an approach, systems phenomena such as property emergence and property masking could lead to mischaracterization of both the nature of the mind itself and the ways in which the mind and body work together holistically. Applying a systems-theoretical perspective, I show that some psychic abilities are emergent capacities of the mind-body system, that ordinary faculties such as emotional perceptiveness can be understood within the same framework as extraordinary faculties such as telepathy, and that NDE evidence favors a naturalistic form of Substance Dualism.

KEY WORDS: near-death experience, systems theory, mind-body problem, psychic ability, filter theory

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Introduction and Background

NDEs and the Empirical Case for Substance Dualism

Near-death experiences (NDEs) are profoundly moving events that are so-called because people typically experience them in moments of emotional or physical crisis. Near-death experiencers (NDErs) typically report an out-of-body experience (OBE), a transition to another realm, and encounters with a being of light or a spirit guide. Often there is a life review, encounters with deceased relatives, a barrier or limit, and a decision to return to the body (Moody, 1975; Zingrone & Alvarado, 2009).

NDEs are not rare phenomena; survey studies indicate that the incidence may be around 4% of the general population (Gallup & Proctor, 1982; Knoblauch, Schmied, & Schnettler, 2001). Researchers have collected tens of thousands of cases. Three important case archives have been established: one at the Religious Experience Research Centre, based in the University of Wales Trinity Saint David; one at the Division of Personality Studies of the University of Virginia; and one in the Near-Death Research Foundation. These archives hold approximately 4,000 case reports. By 2005, more than 65 research studies involving nearly 3,500 NDErs had been published (Holden, Greyson, & James, 2009, p. 7).

Mainstream neuropsychiatry appears to be stumped in terms of explaining NDEs (Greyson, Kelly, & Kelly, 2009; van Lommel, 2010, pp. 113–134), opening up the possibility that important discoveries may result from deeper investigation of NDEs. Of particular importance in this regard are cases in which people report having conscious experiences under conditions of cardiac arrest. Researchers have found that 10–20% of the people who survive cardiac arrest report such experiences (Greyson, 2003; Parnia, Waller, Yeates, & Fenwick, 2001; Schwaninger, Eisenberg, Schechtman, & Weiss, 2002; van Lommel, van Wees, Meyers, & Elfferich, 2001).

According to mainstream medical and philosophical paradigms, such experiences cannot happen. Cardiac arrest is a physiologically brutal event that leads within 10–20 seconds to a state of clinical death, with no heartbeat, no breathing, no detectable electrical activity in the brain, and no brain-stem reflexes (Fenwick & Fenwick, 2008, p. 206; Greyson, 2010a). It is a very serious condition; only about 10% of people who suffer a cardiac arrest survive (Ballew, 1997; Nichol et al., 2008; Peberdy et al., 2008). Without medical intervention, cardiac

arrest typically leads within five minutes to the onset of irreversible brain damage (Safar, 1988) and within 10 minutes to actual death (Kaplan, 2007; Safar, 1988). The signs of clinical death and actual death are the same; the difference is merely that patients in a state of clinical death can be revived with appropriate medical attention.

If consciousness does persist during cardiac arrest, it would clearly be of great significance for the current academic debate about the nature of mind and consciousness, as many researchers have pointed out. For example:

This conflict between neuroscientific orthodoxy and the occurrence of NDEs in conditions of general anesthesia or cardiac arrest is profound and inescapable. . . only when neuroscientists examine current models of mind in the light of NDEs will we progress in our understanding of consciousness and its relation to the brain. (Greyson et al., 2009, p. 234)

Similar views have been expressed by Emily Kelly and colleagues (Kelly, Greyson, & Kelly, 2007, p. 421), Bruce Greyson (2007), and Pim van Lommel (2010, p. 158). These scholars have not made this argument lightly.

First, there is a substantial body of cardiac arrest NDE cases. By 2007, more than a hundred had been reported in the scholarly literature (Kelly et al., 2007, p. 418), and many more have been reported since (Holden, 2009; Rivas & Dirven, 2009; Van Lommel, 2010).

Second, the credibility of these reports are strongly reinforced by their high accuracy. In a recent review, Janice Holden (2009) found that 90% of NDE reports of perceptual experiences under physically challenging conditions such as cardiac arrest, prolonged respiratory arrest, or sensory isolation contained no errors; around 35% of these reports had been independently corroborated (p. 196). Using a different research method, a prospective hospital study, Penny Sartori (2005) found corresponding results: Whereas cardiac arrest survivors who reported NDEs described their resuscitations with virtually no error, those who did not report NDEs were unable to make accurate guesses as to what happened during their resuscitations (p. 292).

Third, some cardiac arrest NDE reports include very unusual incidents that occurred during the crisis. These incidents that were anomalous, were unexpected, and/or contradicted expectations further strengthen the credibility of NDEs and also reinforce the claim that these reports represent contemporaneous experiences (e.g., Cook et al., 1998, pp. 388–390; Moody & Perry, 1988, pp. 18–19,

19–20; Morse & Perry, 1993, p. 201; Ring & Cooper, 1999, pp. 18–21; Ring & Lawrence, 1993; Sharp, 1995, pp. 3–16).

Fourth, several cases include veridical reports of incidents that occurred beyond the range of the ordinary bodily senses. This factor substantially increases the challenge of finding orthodox interpretations (Cook et al., 1998, pp. 388–390, 392–395; Moody & Perry, 1988, pp. 18, 19–20, 172; Sharp, 1995, pp. 3–16).

It has been suggested—although not by skeptics, as far as I know—that these experiences might arguably involve precognitive or retrocognitive impressions that occur just before or just after the arrest period and, hence, would then not be synchronous with the cardiac arrest. If this were the case, the special significance of cardiac arrest NDEs for understanding the nature of consciousness and the mind-body relationship would be radically diminished. However, I have argued elsewhere that these so-called super-psi or super-ESP theories do not present a credible challenge, because (a) there are cases where such theories cannot possibly apply, and (b) the phenomenological consistency across cases with different etiologies implies that a similar mechanism underlies all NDEs (Rousseau, under review). This new work supersedes previous arguments against the super-psi hypothesis that Titus Rivas (2003, 2010) and Michael Potts (2010) presented.

Overall, there seem to be good grounds for accepting that some people really do have mental experiences during cardiac arrest and, hence, are conscious while physically in a state of clinical death. The implications are, as quoted above, “profound and inescapable.”

On the weight of the evidence cited above, most NDE scholars are now convinced that consciousness, identity, memory, and perception can function while the body is clinically dead (Holden, 2010, p. 363). But these functions must be the functions of something: if not of the body then necessarily of something else. So this conviction amounts to a conviction that ‘minds’ are distinct things aside from bodies, that is, that some kind of mind-body substance dualism is true. This conviction is reinforced by further evidence that suggests that individualized ‘minds’ can survive the irreversible death of the body. The central evidences here are veridical encounters with the ‘spirits’ of deceased relatives or ancestors or of people not known at the time to have died (Fenwick & Brayne, 2011; Greyson, 2010b).

That NDE evidence generally, and cardiac arrest cases specifically, suggest that ‘minds’ are distinct things aside from bodies and that

'mind' can survive the irreversible death of the body, are dramatic and important findings. However, the thrust of the present paper is not further to defend that point as such. Rather, my purpose is to argue that humanity can learn much more about the nature of this 'mind' and its relation to the body by studying the NDE evidence and that a systems-theoretical perspective is necessary and helpful in exposing some of these implications. In the present paper, I will not attempt to fulfill all this promise but aim only to defend this proposition and show some examples of how it can play out in practice. The amount of work still to be done in this area is enormous, and the present paper can do no more than show where some of the important opportunities lie and give an idea how they might be approached.

The importance of developing this additional empirical depth in an understanding of the mind is that it presents an opportunity to bring NDE evidence, and the light it casts on deep human questions, into the mainstream debate about the nature of consciousness and personhood. Within the mainstream debate is a rising tide of opinion that the premises on which orthodox views are based are inadequate for explaining the nature of consciousness. Empirical evidence for substance dualism can help to focus effort in the right direction, in that substance dualism is not presently among the leading options being considered. However, even for those who would countenance dualism, there are many possibilities to consider, as I discuss below. Richer empirical indications than just a bare suggestion of dualism can help to guide the way through the maze of logically available options.

Philosophical Context

Structural Dualism goes directly against mainstream views in philosophy of mind, consciousness studies, and neuropsychiatry, which hold that insofar as there are real mental phenomena, they are comprehensively contingent on physical processes in the brain (Stoljar, 2009). However, as intimated above, there is increasing dissatisfaction amongst philosophers about the mainstream position, and this without taking account of anomalies such as NDE evidence. The basic issue is that there seems to be no plausible way to account for the subjectivity and intentionality of mental properties if, ultimately, there are only physical facts to draw on, as many philosophers assert. For example:

Consciousness is deeply mysterious on anyone's view. We have no idea how to accommodate consciousness to the material world, no idea how to explain the phenomenon of consciousness (Heil, 2004, p. 129).

There have been massive attempts in mainstream philosophy since the 1950's to show that worries about materialism are just mistaken . . . The attempts have, in my view, failed to give good reasons for believing any form of materialism about the mind. (Burge, 2010, p. 236, n.5)

Since the 1990s, Yaegwon Kim has been arguing that the mainstream view is logically inconsistent (e.g., 2006, pp. 290–299) and has recently argued that the commitment to the world being “at bottom” exclusively physical in nature renders the puzzle of consciousness insoluble (2008, p. 271). Carl Gillett similarly argued that the mainstream view, which he called *Standard Non-Reductive Physicalism*, “is such that we cannot even imagine how it could be true” (2010, p. 27). The rising tide of opinion against orthodoxy was heralded a decade ago by Gillett and Loewer's (2001) edited volume *Physicalism and Its Discontents* and is very evident in recent compilations such as *Psycho-Physical Dualism Today: An Interdisciplinary Approach* (Antonietti, Corradini, & Lowe, 2008) and *The Waning of Materialism* (Koons & Bealer, 2010).

A wide variety of alternatives are now being discussed in mainstream philosophy, ranging from dual aspect monisms, proponents of which hold that consciousness must be in some way inherent to “physical” matter (Chalmers, 1995, p. 210; Laszlo, 2004; Nagel, 1986, pp. 7–8; Searle, 1992, pp. 93, 95), to full-blown substance dualisms (e.g., Hart, 2009; Hasker, 2001; Meixner, 2008; O'Connor & Churchill, 2010; Swinburne, 1986). Even amongst the substance dualists there are a wide variety of views, for instance on whether mind is field-like or object-like, whether it has structure or is indivisible, whether it interacts with the body or merely has correlated states, whether it survives the death of the body or not, and if it survives whether it does so as an individual being or merges into some kind of universal consciousness (e.g., Antonietti et al., 2008; Laszlo, 2004; Meixner, 2010; Nida-Rümelin, 2007). This variety reflects, in part, the reasonable struggle to stay within a Naturalistic framework insofar as the workings of the everyday world (“Nature”) are concerned, on the grounds that the success of science has made supernaturalistic models incredible.

Against the backdrop of all this swirling philosophical doubt and uncertainty, empirical evidence that can provide discriminating indi-

cations could provide welcome relief. At least some of the confusion stems from an unfortunate ignorance of empirical data relevant to the issues. I agree with Mario Bunge's (2010) recent statement that

the variety of bizarre philosophical views about the nature of the mind stems from the tacit, alas mistaken, conventions that the philosophical imagination should not be constrained by scientific findings, and that philosophical problems can be tackled one by one rather than in bundles. I . . . hold the view that philosophy should be intimately bound with science, and that none of the Big Questions involving facts can be successfully handled except in the light of precise empirically testable theories about the nature of reality and the knowledge of it. (p. 148)

It is unlikely that Bunge had NDEs in mind when he made this comment, but in my view the evidence from NDEs generally, and cardiac arrest NDEs specifically, has exactly such import. Not only does NDE evidence indicate in favor of some kind of mind-body substance dualism (as reported above), but, as I will argue below, it is rich in information about the nature of this distinctly existing mind and its relationship to the body.

Methodology

A Systems-Theoretical Approach

I am not merely present in my body as a sailor is present in his ship, but I am very closely joined, and, as it were, intermingled with it, so that I and the body form a unit. If this were not so, I . . . would not feel pain when the body was hurt, but would perceive the damage purely by the intellect, just as a sailor perceives by sight if anything in his ship is broken. (René Descartes, 1641, in Descartes, Cottingham, Stoothoff, & Murdoch, 1985, p. 56)

In the analyses to follow, I will assume—reasonably, on the arguments presented above—that scholars have sufficient evidence to conclude that the mind is a thing aside from the body and will focus on how empirical investigation can be advanced beyond that inference. To do this, I will adopt a system-theoretical approach, on the grounds that if the mind and the body are distinct things, then a human being is a system in which the two are integrated into a whole. The idea that the mind and body together form a unity that stands in need of specialized analysis was already evident to Descartes, but the theoretical tools for handling such an analysis have been avail-

able only since the formalization of General Systems Theory in the mid-twentieth century (e.g., von Bertalanffy, 1969). The hitherto unrealized opportunity is exemplified by Bunge's (2010) recent comment that the system concept has not yet reached mainstream metaphysics (p. 75).

The significance of the system concept for the present topic is this: When parts are integrated into systems, new properties emerge at the system level while some part-properties become obscured. For example, water is wet, but its constituents, oxygen and hydrogen, are not. This phenomenon is called *emergence*. On the other hand, wooden planks are electrically neutral even though most of the constituent particles—protons and electrons—are electrically charged. This phenomenon is called *submergence* or *masking*. Of course, some properties just add up; for instance, the mass of a system is typically just the sum of the masses of the parts. Such system properties are called *resultant* properties. Sometimes the properties of the parts just supplement each other to provide new functionality; for instance, a hand holding a hammer can do things that neither a hammer nor a hand can do by themselves. This phenomenon is called *synergy*. Synergetic properties are more significant than resultant properties—because functions are enhanced—but are not emergent properties because the kinds of properties present have not changed. The part-configurations that make resultant and synergetic properties possible restrict the freedoms of the parts, so although there is no submergence in the case of the person and hammer, there is *constraint*: The more securely the hand holds the hammer, the less well can it hold anything else.

If minds and bodies are distinct things integrated into a system, then some of the properties of an integral human being would be emergent or synergetic system properties that neither part has on its own. On the other hand, some of the mind's (and body's) properties will have become obscured (submerged) or constrained by the systems context. These effects all need to be unraveled if the nature of the mind is to be understood. It will not do just to take every property of a human being that cannot be explained from physical principles and assign it to the nature of the mind. That sort of analysis could end up very far from the mark indeed, but I contend that this is exactly where theorizing is headed if the lessons from systems theory are not heeded.

The potential confounds of which systems theory warns can be avoided only if the empirical context allows for it, and this is where

cardiac arrest NDEs becomes crucially important. If the integration between system parts is weakened, the parts begin to operate more as things in themselves, and the holistic aspects of the system start to fade. In such a case, emergent and synergetic properties are weakened, and the previously submerged or constrained properties become evident. This phenomenon is called *re-emergence*. It is important to keep in mind that this interplay between emergence and submergence need not result in a complete exchange of properties but can be just a partial one. For example, in chemical atoms the masses of the constituent particles are obscured in proportion to the stability of the atom: The more stable the atom, the more the mass of the atom drops below the sum of the masses of the constituent particles; this proportional loss is called the *mass defect*.

Cardiac arrest NDEs provide a suitable context for doing such analysis in relation to the mind-body system. As will be discussed below, during an NDE the mind appears to be in working order as a thing in itself while the interaction with the body is completely or nearly completely suspended. This situation provides an opportunity to look for differences in properties compared to the integrated condition. Furthermore, in general the more severely a complex system's integration is disrupted, the greater are the chances that things don't go back together again in quite the right way—at least not at first—creating further opportunities to study the system under different degrees of integration and, hence, under different degrees of property emergence/submergence. Cardiac arrest seems to be about as severe a disruption of system integration as one could hope to survive. In addition, recovery is usually slow, and often there is lasting damage to the body or its control systems.

An Important Generalization

Within the database of NDE cases, cardiac arrest cases are relatively rare, representing less than 1% of all documented cases—a few hundred cardiac arrest cases have been recorded, and not much over a hundred cases published. However, a useful connection can be made with the wider database, in the following way.

Phenomenological analyses indicate that there are no significant qualitative differences between the experience reports from the cardiac cases and NDEs triggered under different circumstances such as birth trauma, surgical emergency, accidents, and suicide attempts (Fenwick & Fenwick, 1995, pp. 158–159; Fox, 2003, pp. 98–103; Grey-

son, 1991, 2007; Greyson & Stevenson, 1980). This finding suggests that all NDEs are mediated by a common mechanism—that can be ‘activated’ in multiple ways. Peter and Elizabeth Fenwick (1995) made essentially the same point when they compared the phenomenology of NDE OBEs and ‘spontaneous’ OBEs presumably occurring in the absence of near-death circumstances: “If the phenomena seem the same, even though they occur in different circumstances, then the chances are that all OBEs have an underlying common mechanism” (p. 37).

As I will discuss further below, from a dualistic systems perspective, the cardiac arrest NDE can be interpreted as entailing some degree of disruption of system integration, followed upon resuscitation by full or partial restoration of the system integration. My analysis will, therefore, focus on the phenomenological differences between the normal and the disrupted conditions to make inferences about the nature of the mind and the mind-body system under different conditions. However, given the generalization just made, when doing the *phenomenological* analysis it will not be necessary to be guided only by the cardiac cases. This is a valuable extension, because it dramatically increases the phenomenological database available for theory-building.

Terminological Issues

Kinds of NDEs. NDEs can take several ‘forms,’ such as a ‘material-plane’ OBE or a mystical ‘unitive experience.’ These ‘forms’ are overarching aspects that represent the narrative context of the specific individual experiences that constitute particular NDEs. The different forms of NDEs occur with different frequencies and can occur either exclusively or in various combinations or sequences. In rare case they can even overlap. The present analysis will focus on three kinds of largely positive-affect forms of NDE, which can be called OBEs, other-realm experiences (OREs), and mystical unitive experiences, respectively.

In OBEs the everyday world is experienced from an out-of-body perspective; this feature occurs in about 60% of NDEs. About 40% of NDEs include the feature of an ‘other-realm experience’ (ORE) in which the NDEr finds oneself in another realm experienced as a beautiful place where the NDEr typically has encounters with friendly spirit beings and/or deceased friends or relatives. Lastly, in about

55% of cases the NDEr experiences a mystical unitive experience in which one's sense of identity and ego is lost to differing degrees—sometimes totally—and the NDEr 'becomes one' with some kind of greater or cosmic consciousness accompanied by a sense of great understanding or comprehensive knowledge (Pennachio, 1986; Ring, 1984a). NDE researchers have not systematically studied these unitive experiences, even though such experiences appear to be nearly as common as OBEs and more common than OREs (Greyson, 1983a, 2003; Schwaininger et al., 2002).

In about 17% of cases NDErs have negative-affect experiences. These NDEs are typically either counterfoils to the OREs, involving frightening or demonic beings and unpleasant (but structured) environments, or counterfoils to the unitive experiences, involving a sense of isolation in a void, mist, or abyss. These experiences will not be considered here, but for a comprehensive review, readers may refer to Bush (2009).

The 'mind' as a substance. In substance dualisms the term "mind" is very inadequate for designating the counterpart of the body in what I have here called "the mind-body system" that constitutes a human being. Terms such as soul, ego, personality, self, individual, and consciousness are really not much better because they are all conceptually loaded in different ways, and in any case usually signify a commitment to some kind of exclusively individualized mode of existence, behavior, or awareness, contrary to the state of being NDErs sometimes attained in unitive experiences. A new term is really needed, one representing something that can be characterized afresh on empirical and modern philosophical grounds. However, given the general resistance to terminological reform, and also to maintain compatibility with conventional debates and familiar usage, I will continue to use conventional terms such as "mind" (without quotes), on the understanding that conventional meanings are to be understood in a nuanced way (to accommodate the dualistic context), and subject to refinement in light of empirical data from NDEs.

Just so that this caveat does not render the use of these terms erratic, I will, broadly speaking, adopt the conventional meanings of these terms in the following way. The conventions I am about to propose are rather question-begging (as I explain in the next section), but I will show later, on independent grounds, that they are, in fact, apt. I begin with the assumption that the substantive thing that is the counterpart of the body in the human being considered dualisti-

cally can be designated as some kind of 'soul,' the exact nature of which remains to be worked out. Talk of 'the mind' is then to be construed as talk of the soul in the sense that it is the ultimate bearer of the person's mental properties such as the ability to think, behave rationally, display intentionality, have feelings, and experience qualia. Talk of 'the self' is then to be construed as talk of the soul in the sense that it is the ultimate bearer of the person's unified consciousness with a point of view that is personal, perspectival, and recognized as one's own. Talk of 'the person' is then to be construed as talk of the soul in the sense that it is the ultimate bearer of the being's moral rights and responsibilities—and so on.

Note, however, that given the systems context, a human being is an integral kind of thing in which the body is as essentially a part as the soul is. A soul conceived in this way does not 'wear' a body like a suit nor 'drive' a body like a machine-operator. A human being is an integral whole, and for a *human being* matters such as perspectival point of view, mental capacity, and moral rights may be different compared to how they are for a *human soul* when not physically embodied. For example, the way in which a *human being* thinks is, in general, contingent not only on the relevant capacities of the soul but also on the capacity and condition of the brain. In this conjunction the capacities of the soul may be dominated by the synchronic capacities and condition of the brain. Overall the way in which a human being thinks may be quite different from how the soul might be able to think if it could be disembodied, and the brain may work differently depending on whether it is ensouled or not. Human beings, from this dualistic systems understanding, have "psychological" properties emergently, or synergistically, or resultantly, but when human beings have them they are no less the properties of human beings for being rooted in the properties of their parts. The task at hand is to work out how they are rooted and how they are conditioned by their systems context.

Psychonic properties. It is not clear, at this point, whether human beings really have mental properties, selfhood, personhood, and agency due to souls having these properties by themselves, or whether these are, in fact, emergent properties of the soul-body system. It is conceivable, for instance, that after destruction of the body, personal consciousness merges back into a "universal consciousness," so that selfhood endures only while the body does. Investigating such possibilities will be the second objective of the analysis below. However, it is possible at the outset to say that, granted dualism, these properties

are not physical properties, in the sense that they are properties no purely physical things can have. I define *psychonic* properties both as the properties that souls have that distinguish them from physical things and also as the emergent properties that distinguish soul-incorporating systems from purely physical ones. Things that have such non-physical properties *inherently* are then *psychonic things*. This distinction differentiates psychonic things, such as souls, from physical things, such as bodies, but does not provide an adequately descriptive term for compound systems such as human beings. A characterizing term needs to await the accumulation of more insight into the nature of these compound systems. For the present, I accept the awkward conjunction “soul-body system” and, as needed, nuanced versions such as “mind-body system.”

Analysis

NDEs and Mind-Body Integration

The first task is to show that NDEs involve a disruption of mind-body integration and, therefore, provide an opportunity for a systems-theoretical analysis. This task is relatively straightforward, once it is pointed out that mind-body integration necessarily involves an exchange of information and influence between the mind and body, so that the mind can have knowledge of what is happening to/in the body, and the body can execute the actions intended by the mind.

With very rare exceptions (see below), the onset of an NDE is accompanied by a very rapid loss of all control over the body and all sensation of bodily states. These are rapidly regained when the NDE ends. NDErs notice this phenomenon primarily because they lose, and then regain, the sensation of pain, and find they are unable to communicate physically with people around their body during the OBE portion of the NDE. The following cases are very typical:

There was the most searing pain in my arm . . . Then I was aware that I was losing consciousness and of people rushing around me, knocking things over in the rush to get emergency equipment set up. Then there was nothing—*no pain at all*. And I was up there on a level with the ceiling . . . I could see . . . my body, down there on the bed . . . the light . . . I . . . was being drawn into it . . . I had the most wonderful feeling of peace . . . And then suddenly, I was pulled back, away from it, back, slammed into my body again, *and back with the pain*, and I didn't want to go. (Fenwick & Fenwick, 1995, pp. 5–6, emphasis added)

I began bleeding badly after the birth of my daughter and I was instantly surrounded by medical staff who started working on me. I was in great pain. Then suddenly *the pain was gone* and I was looking down on them working on me. I heard one doctor say he couldn't find a pulse. Next I was travelling down a tunnel toward a bright light. But I never reached the end of the tunnel. A gentle voice told me I had to go back . . . I hit the hospital bed with an electrifying jerk *and the pain was back*. I was being rushed into an operating theatre for surgery to stop the bleeding. (Morse & Perry, 1993, pp. 114–115, emphasis added)

The phenomenon of very sudden transition from a state of intense pain to complete painlessness at the onset of the OBE, and the immediate return of pain when the OBE ends, is very remarkable. Natural endorphins can suppress pain and engender feelings of well-being, but their effects last for hours whereas NDEs last only seconds or minutes (Greyson, 2007, p. 51), so it is unlikely that these effects are due to exclusively *bodily* mechanisms. This point is reinforced by cases in which people can see their bodies receiving electric shocks, their chests being pounded, their faces stroked, and so on, while they themselves feel no related bodily sensations (e.g., Fenwick & Fenwick, 1995; Moody, 1975; Sabom, 1982). Greyson reported an interesting case in which the NDEr could see his body reacting to hallucinatory drugs while he, in his OBE, was mentally lucid (Greyson, 1998).

It seems very clear that the reciprocal flows of information and/or influence that would be required for mind-body interaction is severely or totally disrupted during the NDE. That said, it is noteworthy that the transition to a state of painlessness is not always complete. In a prospective study of cardiac arrest NDE cases, 10% of NDErs reported some level of pain sensation during their OBEs (Schwaninger et al., 2002). This finding suggests that mind-body integration is not an all-or-nothing affair but can be partial.

This analysis suggests that actual death comes when the disruption of the mind-body integration not only is total but also becomes irreversible. The conditions and/or dynamics that make it irreversible are presently unknown, but in complex systems critical failure modes can be triggered by a range of circumstances and the same is likely to be true here. Some evidence indicates that sometimes restoring the integration is under voluntary control; some NDEs survivors report having been given the choice to recover, or willed themselves to recover (Ring, 1980; Schwaninger et al., 2002), and sometimes the integration breakdown can be slowed but not entirely resisted (Fenwick & Fenwick, 2008, pp. 225–228).

Having established that mind-body integration is disrupted during NDEs, I will now characterize the properties of the mind while in this disrupted state and consider this characterization in the light of normal understandings about the properties of integrated human beings.

Consciousness During Cardiac Arrest

Reports of consciousness during cardiac arrest—and during NDEs in general—are very extraordinary in themselves. People report not only that they were conscious but also that their thinking was clearer, faster, and more coherent than normal. An analysis of the large collection of NDE cases in the University of Virginia archive revealed that 80% of NDErs reported the clarity of their thinking to have been unimpaired during their NDEs (45% “clearer than usual” and 35% “as clear as usual”), 74% reported the speed of their thinking to have been unimpaired (37% “faster than usual” and 37% “at the usual speed”), 65% reported their logic to have been unimpaired (29% “more logical than usual” and 36% “as logical as usual”), and 55% reported no decline in control over their thoughts (19% “more control than usual” and 36% “as much control as usual”) (Kelly et al., 2007, p. 386 n. 16).

The important point about this finding for present purposes is that because consciousness and clear rational thinking can take place even when brain functioning is severely compromised, sentience (consciousness, awareness) and “mental properties” such as thinking, remembering, and having feelings really are properties of the mind as such and are neither side-effects of bodily processes nor emergent capacities of the mind-body system.

Selfhood During NDEs

As noted above, NDEs can take several different forms, the most common ones being OBEs, OREs, and unitive experiences. The important points for present purposes are these.

First, in OBEs and OREs selfhood (represented by a unified consciousness with a personal point of view), personhood (as a locus of moral rights and responsibilities), and agency (designating the ability to make decisions freely and act on them) remain intact (Mays & Mays, 2008). Thus, these properties of selfhood, personhood, and agency are properties of the soul as such and are neither bodily properties nor emergent properties of the soul-body system. In unitive ex-

periences these properties can become submerged, but because they can persist both outside of unitive experiences and outside of soul-body integration, it is clear that they are really properties of the soul. The submergence of these properties in unitive experiences must, therefore, be due to the way in which the soul is becoming integrated into a super-ordinate psychonic system.

Second, the soul has the ability (under the right circumstances) to integrate with physical things—the body being the archetypal example—and, under the right circumstances, with otherworldly ‘mental things’—as happens in unitive experiences. Some evidence also suggests that such integration can involve other living people (Greyson & Bush, 1992, p. 105; Morse & Perry, 1990, p. 177). Unitive experiences are, of course, well known from studies of mystical experiences (Hollenback, 1996; James, 1902; Marshall, 2005). The connection made here is important because by implication (a) the analysis of NDEs may shed additional light on mystical experiences, and (b) mystical experiences may shed additional light on the nature of psychonic properties as illuminated by the analysis of NDEs. For example, some mystical unitive experiences involve integration with non-human organisms or even simple physical things, as in the following two striking examples that Paul Marshall (2011, pp. 5, 6) recently discussed.

Poet and literary scholar Kathleen Raine had this unitive experience while gazing at a hyacinth:

I found that I was no longer looking *at* it, but *was* it; a distinct, indescribable, but in no way vague, still less emotional, shift of consciousness into the plant itself. Or rather I and the plant were one and indistinguishable; as if the plant were a part of my consciousness. I dared scarcely to breathe, held in a kind of fine attention in which I could sense the very flow of life in the cells. I was not perceiving the flower but living it. I was aware of the life of the plant as a slow flow or circulation of a vital current of liquid light of the utmost purity. (Raine, 1975, p. 119)

The next case involved a unitive experience while gazing at a crystal:

Then while immersed in this emotion of reverence, he looked at a piece of quartz which he held in his hand, and as he looked at it and its glistening gold-like speckles, suddenly an intense illumination engulfed him. He saw millions of little stars with rainbow rings streaming from them in place of the piece of quartz, and he felt his consciousness enter into every particle belonging to an infinite whole, while his being

was buoyant with intense delight for he knew at that moment that he had looked into God. (Laubscher, 1963, p. 229)

These interesting cases challenge prevailing notions of ‘organism’ and ‘physical’ (and ‘simple’, for that matter). A detailed exploration of these interesting phenomena must await another occasion, but for now it is important to note that souls appear to have the ability to integrate with (and then separate from) other things, both physical and mental. This is a new kind of psychonic property beyond the kinds already identified above such as mental properties, selfhood, personhood, and agency. When this integrative capacity is enacted, the sense of self is altered and can become either subsumed in a greater self or enlarged state of consciousness, or can shift its perspective to see into, or via, other kinds of being. The selfhood property of the soul can thus become submerged in special systems contexts, or synergistically modified in others. These phenomena, however, do not weaken the inference that selfhood is ultimately rooted in the nature of the soul as such. I will return to the consideration of this special psychonic property after the next section, in which additional kinds of properties will be identified.

Informational and Influential Faculties of the Mind

The main reason the testimonies of awareness, mental lucidity, and rational thinking during cardiac arrest are credible is that these reports provide accurate information about the situation in the environs of the body (as discussed above). When an NDE takes the form of an OBE, the experiencer is able to perceive the physical environment in a manner that is analogous to ordinary visual perception, although the perspective is from a point of view outside the body. The cardiac cases indicate that this perception does not involve the bodily faculties. This finding is underscored by the many cases collected by Kenneth Ring and Sharon Cooper (1999) that involve blind persons, including some also involving cardiac arrest (pp. 18–21, 71–72). Ring and Cooper called this apparent perceptual ability *mindsight*. The inference that this ability is not-bodily is further reinforced by the many reports of people “seeing” in more complex ways than physical eyes do, for instance being able to see in all directions at the same time (Couliano, 1991, p. 150), seeing things from all angles at once (Ring & Cooper, 1999, p. 139), seeing through things (Lawrence, 1993, p. 125),

or seeing things in remote locations (Tart, 1981; Tyrrell, 1945, p. 197). Ring and Cooper (1999) distinguished mindsight from psychic abilities such as clairvoyance and telepathy on the grounds that it also encompasses unusual forms of 'seeing' such as those just mentioned as well as non-perspectival perceptions such as those experienced in unitive states of consciousness (pp. 108–114). This conceptual extension is regarded with favor by parapsychologist Adrian Parker (2001, p. 236).

Visual perception is, however, not the complete story: NDE reports include analogues for all the bodily sensory modalities, including hearing, feeling textures, smelling, sense of orientation, and sense of motion, as recently reviewed by Robert and Suzanne Mays (2010). (For specific examples, see Anonymous, 1996, p. 80; Blackmore, 1982, p. 52; Fenwick & Fenwick, 1995, p. 180; Gabbard & Twemlow, 1985, p. 158; Ring & Valarino, 1998, p. 63; and Sabom, 1982, p. 100.)

In addition, people in the OBE state also commonly have the ability to know what embodied people are thinking, and sometimes they are able to 'telepathically' transmit information to them; in the ORE state they are even able to have two-way conversations in this 'telepathic' way (Mays & Mays, 2008). There is no analogue for such ability amongst the known bodily communication channels. However, there is good evidence that in everyday life average people have a weak version of this capacity, for instance being able to detect if someone is staring at them (Sheldrake, 2005) or thinking about them (Sheldrake, 2000; Sheldrake & Brown, 2001). These data are controversial exactly because proponents of the mainstream view accept that the known bodily sensori-kinetic channels cannot mediate such perceptions (Kurtz, 1985).

These extraordinary cognitive capacities are well known in psychical research and parapsychology under such terms as extrasensory perception (ESP), clairvoyance, and psi gamma (Broughton, 1991; Irwin & Watt, 2007; Radin, 1997). Interestingly, the kinetic counterpart of this ability, known as psychokinesis (PK), appears to be absent from the NDE literature. It is remarkable that many NDErs try to interact with the ordinary world during the OBE portion of their NDEs, usually in order to signal that they are all right, but are unable to do so. I know of only one case in which an NDEr reported eventual success in interacting with the physical world, but this is an uncorroborated anecdote (Corazza, 2008, p. 65)—and only two cases of an NDEr informing a person in a normal state of consciousness, but it is undetermined which party's abilities mediated the effect (Greyson & Bush, 1992, p. 105; Mays & Mays, 2010).

On this evidence, the soul by itself has, in terms of *interaction* with other things, very powerful cognitive faculties but exceedingly weak, if any, kinetic faculties. On the other hand, the human person, as a soul-body system, appears to have much weaker ESP and weak but not insignificant PK abilities. PK ability is well documented in human beings (Braude, 1986; Hasted, 1981; Heath, 2003, 2011; Radin, 1997) and is even the subject of both a commercially viable technical product, the Psyleron (see www.psyleron.com) and a commercially viable entertainment product, the so-called “PK party” (see e.g., www.jackhouck.com/ for a provider, and for participant reports, see e.g., Crichton, n.d.; Radin, n.d.). From a systems perspective, it appears that the psychokinetic faculty of human beings, weak as it normally is, is nevertheless an emergent capacity of the soul-body system, whereas the normally powerful ESP capacity of the soul becomes significantly submerged in the context of an integrated soul-body system.

This interactive faculty of the soul is to be contrasted with the *integrative* faculty discussed above, which appears to involve not only powerful cognitive capacities but also, at least in the case of soul-*body* integration, powerful influential capacities as well.

The Four-Category Model

In complex systems, informational and influential (“sensori-kinetic”) capacities operate in a co-ordinated way so as to make effective goal pursuit possible. The systemic field of study concerning this interplay is called “Cybernetics” (Wiener, 1961), and therefore these capacities in complex systems can be called *cybernetic faculties*. Norbert Wiener’s term ‘cybernetics’ applies to both organisms and mechanisms. To make a distinction accommodating a dualistic perspective, I will refer to the soul’s inherent capacities involving interregulated informational and influential channels *psychonetic* faculties; by extension, the body’s analogous capacities are then *somatonetic faculties*.

The psychonetic faculties appear to facilitate four distinct kinds of interactions, each potentially involving a flow of information and/or influence.

At first, it appears that there are two types of interaction, as follows:

- (i) Integrative interaction, which involves unification with or connectedness of the individual to things in its environment. Mystical unitive experiences and soul-body integration are examples. This interaction can be called “holotropic interaction;” and

- (ii) Differentiating interaction, in which the distinctness or separate-ness of other things in the environment is retained. Clairvoyance and telepathy are examples. This interaction can be called “allotropic interaction.”

However, given the dualistic scenario under consideration here, it is evident that each of these two interaction types can be directed in two distinct ways, as follows:

- (iii) Interactions with the psychonic aspects of things. Telepathy and certain unitive experiences are examples. This interaction can be called “psychotropic interaction;” and
- (iv) Interactions with the physical aspects of things. Clairvoyance, psychokinesis, and soul-body integration are examples. This interaction can be called “physicotropic interaction.”

Every specific interaction between the soul and other things will involve one of the attributes from the first dichotomy and one from the second dichotomy, so that every interaction is either integrative (holotropic) or differentiating (allotropic) *and* is directed either to a thing's psychonic aspects (psychotropic) or its physical aspects (physicotropic). This dual dichotomy produces four possible interaction categories, as shown in the following four-quadrant diagram:

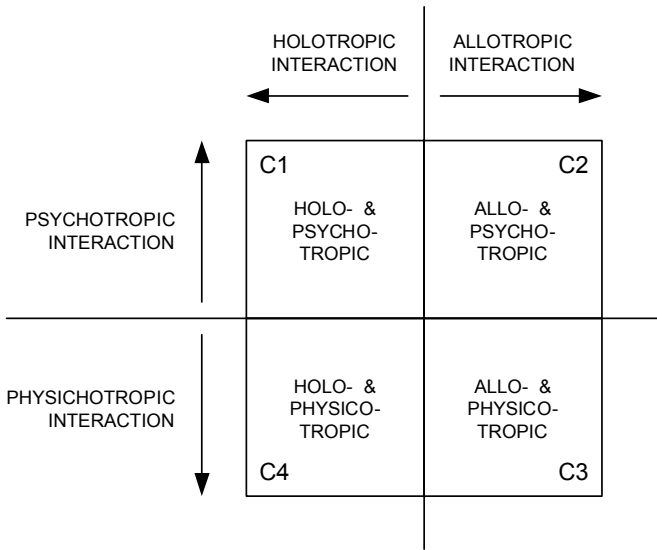


Figure 1: The Four-Category Model of Psychonetic Interaction

Using this model, it is now possible to assign any particular kind of psychonetic interaction to one of these quadrant categories, as shown for example in Figure 2:

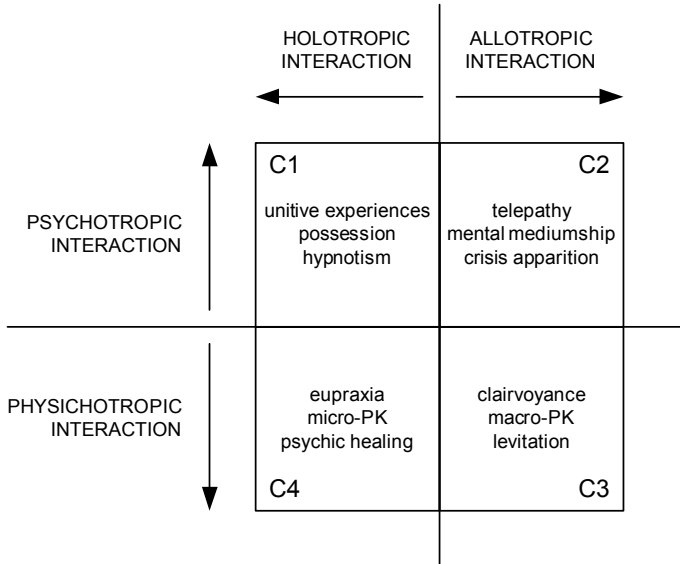


Figure 2: The Four-Category Model with examples

Because it is at present radically unclear how the example faculties work, the assignments of the examples to particular quadrant categories are provisional. However, the categories themselves are not provisional, because the breakdown is a purely logical one.

With this model at hand, it becomes possible to analyze the difference between “mindsight” and “psi” or “psychic ability,” as presently understood, in the following way. Mindsight encompasses interactions in categories (Cs) 1, 2, and 3 only, and apparently involves informational channels only. Psychic ability or “psi” encompasses only C2 and C3, but explicitly involves both informational and influential channels. Soul-body integration, which is a concern of the present paper, involves informational and influential channels in C4. This integration was part of psi as originally conceived by Thouless and Wiesner (1948), who coined the term “psi,” but was soon dropped because of its dualistic commitments, so that by 1985 John Beloff called for a new term to encompass this category of interaction as well, as

it was no longer considered part of “psi” or “psychic ability” as the terms were by then understood (1985, p. 226). The idea of “psychoneurotic faculties” as introduced in the present paper, encompasses more than Beloff wished for, because it embraces not only C2 and C3 as per Thouless and Wiesner’s original conception of psi, but also C1 as well—as advocated by Ring and Cooper (1999) and also recently by Marshall (2011). I propose the term “psychonesis” as a collective term for the process of utilizing these faculties.

For ease of reference, I have provisionally labelled the category of interaction in each quadrant as follows:

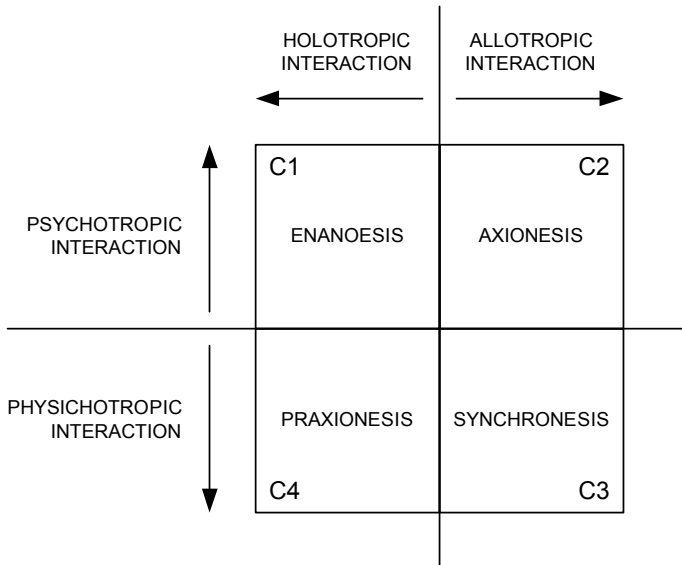


Figure 3: The Four Categories of Psychonesis

Enanoesis draws on the Greek terms “*ena*” meaning ‘one’ and “*enono*” meaning ‘merge.’ This term is appropriate to its involvement in unitive experiences. *Axionesis* draws on the Greek term “*axios*” meaning ‘value’ or ‘worth.’ This term reflects the ability of this faculty to perceive affective or axiological properties of other beings, as the term ‘telepathy’ typically signifies. (For an extensive discussion of axionesis, see Rousseau, 2011). *Synchonesis* was chosen for the apparent relevance of this faculty in everyday life to synchronicity, intuition, and luckiness. *Praxionesis* was chosen for the relationship to ‘eupraxia,’ which designates good mind-body integration.

Power Dependencies Between Psychonetic Faculties

Granted these different psychonetic faculties, and the emergence/submergence effect that was noted in the preceding section, it is now relevant to look more closely at the interplay between the expressions of these faculties. There appears to be a straightforward trade-off. Briefly, and too simply, the situation appears to be as follows.

Under ordinary circumstances, reflecting good soul-body integration (eupraxia), people typically have weak (but not insignificant) psychonetic abilities, enabling them for instance to detect when they are being stared at, to know when a remote friend is thinking about them, to sense that a remote loved one is in crisis, to engender useful “co-incidences,” and to facilitate or hinder the smooth working of equipment (Gurney, Myers, & Podmore, 1886; Shelldrake, 1999, 2000, 2002, 2005; Shelldrake & Brown, 2001; Walach & Schmidt, 2005, pp. 58–60). Surveys reveal a high prevalence of notable but minor experiences (Targ, Schlitz, & Irwin, 2000, pp. 222–3) and that the incidence of strong effects or dramatic experiences is very low (Palmer, 1979; Thalbourne, 1994; 2004, p. 118). When soul-body integration is disrupted, for example by the onset of cardiac arrest, the flow of information and influence between the body and the soul (praxionesis) is drastically (or totally) reduced, and the informational aspects of psychonesis is dramatically enhanced, thus enabling the powerful clairvoyance and telepathy characteristic of OBEs and the powerful noetic states characteristic of unitive experiences. Upon resuscitation, soul-body integration is re-established, and praxionesis becomes powerful again while the other psychonetic faculties become largely suppressed again. This inverse relationship between the power of soul-body integration and the power of psychic/mystical functioning was anticipated by Frederic Myers (1886). He spoke on the one hand about a *familial* relationship between these faculties:

Perhaps when I *attend* to a thing, or *will* a thing, I am directing upon my own nervous system actually that same force which, when I direct it on another man's nervous system, is the ‘vital influence’ of mesmerists, or the ‘telepathic impact’ of which Mr Gurney and I have said so much. (p. 173)

Myers (1891) spoke on the other hand of kinds of mental functioning that vary “inversely, rather than directly, with the observable activity of the nervous system” (p. 638).

From a system-theoretical perspective, this inverse relationship has a particular significance. All the forms of psychonesis involve

flows of information and/or influence. The effective application of influence of course requires information processing, too (Wiener, 1961), so both aspects of psychoneurosis depend ultimately on the ability to process information. The interplay in strengths between these faculties, as seen across fluctuating conditions, suggests that the information processing capacity of the soul is limited, and this resource is allocated to different uses at different times based on needs, interests, and contexts. This dynamic suggests that the workings of the soul are subject to conservation laws.

“Cognitive resource management” is an established concept in psychology and well known in phenomena such as attentional blindness, but in the present context it carries a special implication. No one is (or should be) surprised to learn that the brain/body has limited capacity and that its operations are subject to conservation laws. However, the implication here is that *the soul* has limited capacities, too, and its operations are likewise subject to conservation laws. This implication is interesting because having limited capacities and being subject to conservation laws are hallmarks of *natural systems*. This phenomenon suggests that souls are natural rather than supernatural and, hence, that they are not only accessible to study by the methods of science but that their addition to the ontological catalogue will not subvert the scientific enterprise. By implication, the dualism suggested by NDEs is, in fact, a Naturalistic Substance Dualism—that is, a naturalistic dualism of the sort involving *structural* dualism and not just *property* dualism.

A confirmation of this suggestion is found in the interplay between submergence and emergence of properties as the interaction between the soul and the body is modulated. An analogy for the example given above is the interplay between the stability and mass defect of the chemical atom. The exchange of one kind of property for another in a proportional way is well known in natural systems and, again, is rooted in energy conservation laws. This phenomenon suggests that the human being is a natural system *in toto*; that is, its parts (body and soul) are natural things, and the way in which they work together is natural as well.

This suggestion needs to be followed up in some detail and could be pursued in the following way. It is possible to ask, and to give an answer, about what has to be true of the soul if it were to be a natural kind of thing. Examples are having a location in space, a shape, and an internal structure as well as being subject in all its operations to energy conservation principles. Once such a specification has been

stipulated, it is then possible to look for evidence in support of such requirements, both in the NDE evidence and elsewhere. I have undertaken such an analysis, but discussion of it must await another occasion. For the present I can only report that the idea of a natural soul appears to be a viable one.

The Spectrum of Psychonetic Capacities

Based on the discussion up to this point, it is possible to develop a new understanding of the reasons why a spectrum of qualities or competencies has been observed in different individuals and under different contexts. My report on a detailed analysis along these lines must await another occasion, but a hint can be given here of how it goes. Consider again the breakdown given in Figure 3. When psychonetic faculties are operating powerfully—either because of natural talents or because of re-emergence due to soul-body dissociation—the individual might be capable of unitive states (C1), telepathy (C2), clairvoyance (C3), and/or micro-PK (C4). In everyday life for average people, these otherwise powerful faculties are systematically submerged, so that they might manifest merely as, for example, empathy (C1), emotional perceptiveness (C2), intuitiveness or luckiness (C3), and eupraxia (C4). *Disabilities* in these faculties might manifest as sociopathy (C1), autism (C2), unluckiness (C3), and dyspraxia (C4). If this model is essentially correct, it would support the development of new models in cognitive psychology in which ‘ordinary’ faculties of human beings, such as emotional perceptiveness, can be understood in the same framework as extraordinary faculties such as telepathy.

Comparison with Filter Models

As noted above, something very like the inverse relationship discussed above was anticipated by Myers (1886, 1891). That idea was further developed into so-called filter theories or transmissive/permissive theories of the relationship between the workings of consciousness and the workings of the brain/body by William James (1900), Henri Bergson (1896/1913), F. C. S. Schiller (1894), Aldous Huxley (Huxley, 1954), and more recently Rick Strassman (2001). These theories suggest that the brain either filters or transmits consciousness but does not produce it and that this process can be seen in inverse correlations of mind/brain activity as opposed to the direct proportionalities that would result if the “production” theories were correct. Edward

Kelly (2007) recently reviewed these theories and expressed his support for permissive theories (pp. 603–639). These theories argue for the logical plausibility of some kind of mind-body substance dualism and, hence, the logical possibility that consciousness might survive the death of the body.

The solution these theories offer to the mind-body problem raises a new one: *Why* are things like this? What is the purpose of embodiment? On conventional conceptions of psychic ability, the mind seems to have faculties analogous to the bodily ones, but the mental ones appear to be much more powerful and also more diverse. Why bother with physical embodiment? Bergson's (1913) answer was that the brain restricts the flow of information to the mind, which would otherwise be overwhelmed by psychically-accessed information unrelated to immediate survival. If this filtering action could be bypassed, he argued, psychic awareness could be vastly extended. His model does not suggest *how* the brain achieves this power over the mind or how this filtering action can be bypassed. Bergson's model is not supported by the evidence from cardiac arrest NDEs: Here the limiting action of the brain (to use Bergson's terms) is completely suppressed and psychonetic faculties completely empowered. Contrary to what one would expect on the basis of the filter model, people in this state do not report being overwhelmed by their 'new-found' competence but typically function better than ever before.

The systems model developed in the present paper can be seen as a revision and extension of these ideas. First, an account is given of *how* the brain inhibits mental powers, via the finding that mind-body integration and psychic faculties draw on a joint and limited reserve of information-processing power, forcing a managed prioritization across the use of different psychonetic faculties. However, from this new perspective the brain is not a filter or 'reducing valve' but a valuable system component, and a price is paid for employing it effectively. The 'purpose of embodiment' question is now approached in a different way: Systems have properties that none of the parts have (emergent properties), and on this view (*contra* Bergson) embodiment is important because of how it *extends* rather than how it *limits* the mind. The identification of emergent properties in the soul-body system covered in the present paper establishes this point, but obviously this development marks only the beginning of efforts to elucidate this important issue.

A Psychonetic Control System

From a systems theoretical perspective the inverse relationship identified above, and correspondingly the discovery of managed prioritization of the soul's use of psychonetic faculties, suggest the existence of a control system that regulates this prioritization, presumably on a need-oriented or goal-oriented basis. Once one knows to look for such a control system, evidence from NDEs and other exceptional experiences can be analyzed for insights into how it works, leading to interesting insights into the human condition. This is a huge subject, however, and for the present it must suffice just to give an outline of how it can be approached and to what further developments it might lead.

The inverse relationship suggests that people should be able to enhance their psychic ability by reducing the flow of information between the body and the mind, for example by sensory deprivation or meditative states. Ample evidence indicates that things do indeed work this way. Spontaneous psychic experiences occur predominantly in dreams (Rhine, 1962, 1981; Sannwald, 1963) or when a person is alone and engaged in activities that are minimally demanding in both mental and physical respects (Targ et al., 2000, pp. 224–5; Irwin, 1994, p. 23). In fact, the use of mild sensory deprivation and physiological calm has become standard practice in certain kinds of parapsychological experiments, resulting in positive results with good reliability (Bem & Honorton, 1994). These findings are suggestive in the following ways.

First, an *increase* in mental alertness or sensory activity has an immediately suppressive effect in psychonetic ability. This principle suggests that mind-body integration, and the effective operation of the body, is ordinarily highly prioritized over psychic/mystical ability, again affirming that embodiment is valuable in its own right, as suggested in the previous section. This inference is supported by NDE evidence whereby resuscitation of the patient typically results in immediate cessation of the OBE and the immediate return of full subjective awareness of the bodily condition.

Second, psychonetic enhancement effects due to calming are, for average persons, usually very weak, and typically only very small enhancements in psychic ability are obtained even under very significantly calming conditions. This finding stands in contrast to NDE evidence, wherein the complete disruption of mind-body integration results in a very significant increase in psychonetic ability, even for

average persons. In control systems terms, this evidence suggests the presence of some kind of safety interlock that prevents the quality of the mind-body integration from falling below some limit. Such features are common in complex systems; for instance, the idling speed of a car is maintained to ensure readiness for quick action, and the stall speed of an aircraft is maintained to ensure that sufficient lift is always generated. The interesting thing about safety interlocks is that they are not deadlocks: They protect the system against risk without making potentially risky activity impossible. The natural occurrence of powerful but unplanned psychic experiences, such as premonitions of danger or crisis apparitions, suggests that this block is indeed an interlock and not a deadlock. The implication is that in certain situations the use of powerful psychic/mystical faculties is allowable or even advisable but that special care is required to ensure the system is not endangered. This inference resonates with the well-known warnings not to indulge in practices or take substances that enhance psychic powers without the guidance of a spiritual teacher and suggests that these warnings are well founded.

It is interesting to consider what the systemic risks associated with disruption of mind-body integration might be. There is much evidence to consider here, but one example will suffice for present purposes. Given the complexity of the soul-body system, one possibility is that after a severe disruption, the reintegration might be incomplete or misaligned somehow, at least temporarily. In systems terms, incomplete reintegration means that some system functions are lost or weakened, whereas misaligned reintegration means functions don't work smoothly anymore. Incomplete mind-body integration would result in what presents as neurological deficits, but, given the inverse relationship discussed above, this development would be accompanied by the emergence of functional psychic abilities, perhaps in the same way that psychic mediumship abilities sometimes emerge after head traumas (which result in *actual* neurological deficits) (Fenwick & Fenwick, 1995, p. 148; Nelson, 1970). On the other hand, 'misaligned' reintegration would distort the emergent properties of the soul-body system; given the finding above that PK is an emergent property of the soul body system, the implication is that 'misaligned' reintegration would result in subsequently dysfunctional PK abilities. Evidence in the professional literature indicates that NDE aftereffects include both enhanced *functional* psychic abilities of the informational type (e.g., telepathic or precognitive impressions)

and *dysfunctional* PK abilities (e.g., disrupting nearby electronic equipment) (Fenwick & Fenwick, 1995, p. 141; Greyson, 1983; Migliore, 2007; Morse & Perry, 1993; Nouri & Holden, 2008; Ring, 1984; Sutherland, 1989). This evidence suggests that both these speculated risks are real.

All this material needs treatment in much more depth, but even this sketchy analysis suggests interesting implications. The idea that disruptions of mind-body integration would present as neurological deficits, even though no physical damage may be present, suggests an avenue for investigating so-called conversion disorders. These conditions represent a substantial mystery to orthodox medical practice, where the prevalence of unexplained neurological symptoms typically ranges between 30 and 50% and in some specialities approaches 70% (Carson, Ringbauer, Stone, McKenzie, Warlow, & Sharpe, 2000; Nimnuan, Hotopf, & Wessely, 2001; Snijders, Leeuw, Klumpers, Kappelle, & Gijn, 2004). On the insights from studying NDE cases from a systems perspective, it may be possible to develop better diagnostic tools (e.g., by looking into emerging psychic abilities) and better therapeutic approaches (e.g., via practices that strengthen, or increase the efficiency of, mind-body interaction). The latter possibility suggests that it may also be possible to help NDErs mitigate or overcome the problems with disruptive PK they so commonly report afterwards.

Summary of Findings

In this paper I supported the view that NDEs provide empirical evidence for mind-body substance dualism and argued that a systems-theoretical analysis of the evidence is required to obtain valid insights into the nature of the mind (“soul”) as something that exists in a substantive way in addition to the body. Using such an approach, I argued that consciousness, mental properties, selfhood, and agency are properties of the soul, and none of them are properties of the body or emergent properties of the soul-body system. Likewise, informational types of psychic ability such as clairvoyance and telepathy appear to be powerful native powers of the soul, but these are severely curtailed in the context of the soul-body system. On the other hand, psychokinetic faculties appear to be an emergent capacity of the soul-body system and not a powerful capacity of the soul by itself.

I defined “psychonesis” as representing the operation of the infor-

mational and influential channels of the soul and showed that these can be analyzed in terms of four categories of interactions. Mindsight, psychic ability, and soul-body interaction were then shown to involve different subsets of the psychonetic channels. I argued that in terms of this model, ordinary faculties such as emotional perceptiveness can be understood within the same framework as extraordinary faculties such as telepathy.

I argued for an inverse relationship between the strength of soul-body integration and the other psychonetic faculties and argued from this finding that the soul appears to be a natural kind of thing. On this basis, the addition of souls to the ontological inventory will not subvert the scientific effort to understand the nature of human beings or the world.

Finally, I argued that investigation of the control system implicated in regulating the prioritization of psychonetic faculties might yield important insights with relevance for spiritual development, medical diagnosis, and therapeutic treatments. This thread of argument demonstrates the promise of studying NDEs from a systems perspective.

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References

- Anonymous. (1996). *When ego dies: A compilation of near-death and mystical conversion experiences*. Houston, TX: Emerald Ink.
- Antonietti, A., Corradini, A., & Lowe, E. J. (Eds.). (2008). *Psycho-physical dualism today: An interdisciplinary approach*. New York, NY: Lexington.

- Ballem, K. A. (1997). Recent advances: Cardiopulmonary resuscitation. *BMJ: British Medical Journal*, 314(7092), 1462.
- Beloff, J. (1985). Robert Henry Thouless 1894–1984: An appreciation. *Journal of Parapsychology*, 49(3), 221–227.
- Bem, D., & Honorton, C. (1994). Does psi exist? Replicable evidence for an anomalous process of information transfer. *Psychological Bulletin*, 115(1), 4–18.
- Bergson, H. (1913). *Matter and memory*. (N. M. Paul & W. S. Palmer, Trans.). London, England: Allen & Unwin.
- von Bertalanffy, L. (1969). *General System Theory: Foundations, development, applications*. New York, NY: Braziller.
- Blackmore, S. J. (1982). *Beyond the body: An investigation of out-of-the-body experiences*. London, England: Heinemann.
- Braude, S. E. (1986). *The limits of influence: Psychokinesis and the philosophy of science*. New York, NY: Routledge & Kegan Paul.
- Broughton, R. S. (1991). *Parapsychology: The controversial science*. New York, NY: Ballantine.
- Bunge, M. (2010). *Matter and mind: A philosophical inquiry*. New York, NY: Springer.
- Burge, T. (2010). Modest dualism. In R. C. Koons & G. Bealer (Eds.), *The waning of materialism* (pp. 233–250). Oxford, England: Oxford University Press.
- Bush, N. E. (2009). Distressing Western near-death experiences. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation* (pp. 63–86). Santa Barbara, CA: Praeger/ABC-CLIO.
- Carson, A. J., Ringbauer, B., Stone, J., McKenzie, L., Warlow, C., & Sharpe, M. (2000). Do medically unexplained symptoms matter? A prospective cohort study of 300 new referrals to neurology outpatient clinics. *Journal of Neurology, Neurosurgery & Psychiatry*, 68(2), 207–210.
- Chalmers, D. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2(3), 200–219.
- Cook, E. W., Greyson, B., & Stevenson, I. (1998). Do any near-death experiences provide evidence for the survival of human personality after death? Relevant features and illustrative case reports. *Journal of Scientific Exploration*, 12(3), 337–406.
- Corazza, O. (2008). *Near-death experiences: Exploring the mind-body connection*. London, England: Routledge.
- Couliano, I. P. (1991). *Out of this world: Otherworldly journeys from Gilgamesh to Albert Einstein*. London, England: Shambhala.
- Crichton, M. (n.d.). Spoon bending. Retrieved from <http://www.crichton-official.com/features-spoonbending.html>
- Descartes, R., Cottingham, J., Stoothoff, R., & Murdoch, D. (1985). *The philosophical writings of Descartes* (vol. 2). Cambridge, England: Cambridge University Press.
- Fenwick, P., & Brayne, S. (2011). End-of-life experiences: Reaching out for compassion, communication, and connection—Meaning of deathbed visions and coincidences. *American Journal of Hospice and Palliative Medicine*, 28(1), 7–15.
- Fenwick, P., & Fenwick, E. (1995). *The truth in the light: An investigation of over 300 near-death experiences*. London, England: Headline.
- Fenwick, P., & Fenwick, E. (2008). *The art of dying: A journey to elsewhere*. London, England: Continuum.

- Fox, M. (2003). *Religion, spirituality, and the near-death experience*. London, England: Routledge.
- Gabbard, G. O., & Twemlow, S. W. (1985). *With the eyes of the mind: An empirical analysis of out-of-body states*. New York, NY: Praeger.
- Gallup, G., & Proctor, W. (1982). *Adventures in immortality: A look beyond the threshold of death*. New York, NY: McGraw-Hill.
- Gillett, C. (2010). On the implications of scientific composition and completeness. In A. Corradini & T. O'Connor (Eds.), *Emergence in science and philosophy* (pp. 25–45). New York, NY: Routledge.
- Gillett, C., & Loewer, B. (Eds.). (2001). *Physicalism and its discontents*. Cambridge, England: Cambridge University Press.
- Greyson, B. (1983a). Near-death experiences and personal values. *American Journal of Psychiatry*, *140*(5), 618–620.
- Greyson, B. (1983b). Increase in psychic phenomena following near-death experiences. *Theta*, *11*, 26–29.
- Greyson, B. (1991). Near-death experiences precipitated by suicide attempt: Lack of influence of psychopathology, religion, and expectations. *Journal of Near-Death Studies*, *9*(3), 183–188.
- Greyson, B. (1998). Near-death experiences. Presentation to Esalen Invitational Conference on “Survival of Bodily Death” December 6–11, 1998. Retrieved from <http://www.esalenctr.org/display/confpage.cfm?confid=3&pageid=22&pgtype=1>.
- Greyson, B. (2003). Incidence and correlates of near-death experiences in a cardiac care unit. *General Hospital Psychiatry*, *25*(4), 269–276.
- Greyson, B. (2007). Near-death experience: Clinical implications. *Revista de Psiquiatria Clínica*, *34* suppl. 1, 116–125.
- Greyson, B. (2010a). Implications of near-death experiences for a postmaterialist psychology. *Psychology of Religion and Spirituality*, *2*(1), 37–45.
- Greyson, B. (2010b). Seeing dead people not known to have died: “Peak in Darien” experiences. *Anthropology and Humanism*, *35*(2), 159–171.
- Greyson, B., & Bush, N. E. (1992). Distressing near-death experiences. *Psychiatry*, *55*(1), 95–110.
- Greyson, B., Kelly, E. W., & Kelly, E. (2009). Explanatory models for near-death experiences. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation* (pp. 213–234). Santa Barbara, CA: Praeger/ABC-CLIO.
- Greyson, B., & Stevenson, I. (1980). The phenomenology of near-death experiences. *American Journal of Psychiatry*, *137*, 1193–1196.
- Gurney, E., Myers, F. W. H., & Podmore, F. (1886). *Phantasms of the living* (Vols. 1–2). London, England: Trübner.
- Haraldsson, E. (1985). Representative national surveys of psychic phenomena: Iceland, Great Britain, Sweden, USA, and Gallup’s multinational survey. *Journal of the Society for Psychical Research*, *53*, 145–158.
- Hart, W. D. (2009). *The engines of the soul*. Cambridge, England: Cambridge University Press.
- Hasker, W. (2001). *The emergent self*. Ithaca, NY: Cornell University Press.
- Hasted, J. B. (1981). *The metal-benders*. London, England: Routledge & Kegan Paul.
- Heath, P. R. (2011). *Mind-matter interaction: A review of historical reports, theory, and research*. Jefferson, NC: McFarland.

- Heath, P. R. (2003). *The PK zone: A cross-cultural review of psychokinesis*. Lincoln, NE: iUniverse.
- Heil, J. (2004). *Philosophy of mind: A contemporary introduction* (2nd ed.). New York, NY: Routledge.
- Holden, J. M. (2009). Veridical perception in near-death experiences. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation* (pp. 185–211). Santa Barbara, CA: Praeger/ABC-CLIO.
- Holden, J. M. (2010). Response to “Is it Rational to Extrapolate from the Presence of Consciousness During a Flat EEG to Survival of Consciousness After Death?” *Journal of Near-Death Studies*, 29(2), 362–367.
- Holden, J. M., Greyson, B., & James, D. (Eds.). (2009). The field of near-death studies: Past, present, and future. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation* (pp. 1–16). Santa Barbara, CA: Praeger/ABC-CLIO.
- Hollenback, J. (1996). *Mysticism: Experience, response, and empowerment*. University Park, PA: Pennsylvania State University Press.
- Huxley, A. (1954). *The doors of perception*. New York, NY: Harper.
- Irwin, H. J., & Watt, C. (2007). *An introduction to parapsychology*. London, England: McFarland.
- Irwin, H. J. (1994). The phenomenology of parapsychological experiences. *Advances in Parapsychological Research*, 7, 10–76.
- James, W. (1900). *Human immortality: Two supposed objections to the doctrine* (2nd ed.). Boston, MA: Houghton, Mifflin. (Original work published 1898)
- James, W. (1902). *The varieties of religious experience: A study in human nature, being the Gifford lectures on natural religion delivered at Edinburgh in 1901–1902, by William James*. London, England: Longmans Green.
- Kaplan, J. L. (2007, August). Cardiac arrest: First aid: Merck manual home edition. Retrieved from <http://www.merck.com/mmhe/sec24/ch299/ch299c.html>
- Kelly, E. F. (2007). Toward a psychology for the 21st century. In E. F. Kelly, E. W. Kelly, A. Crabtree, A. Gauld, M. Grosso, & B. Greyson, *Irreducible mind: Toward a psychology for the 21st century* (pp. 577–643). Lanham MD: Rowman & Littlefield.
- Kelly, E. W., Greyson, B., & Kelly, E. F. (2007). Unusual experiences near death and related phenomena. In E. F. Kelly, E. W. Kelly, A. Crabtree, A. Gauld, M. Grosso, & B. Greyson, *Irreducible mind: Toward a psychology for the 21st century* (p. 367–421). Lanham, MD: Rowman & Littlefield.
- Kelly, E. F., Kelly, E. W., Crabtree, A., Gauld, A., Grosso, M., & Greyson, B. (2007). *Irreducible mind: Toward a psychology for the 21st century*. Lanham, MD: Rowman & Littlefield.
- Kim, J. (2006). *Philosophy of mind* (2nd ed.). Boulder, CO: Westview Press.
- Kim, J. (2008). Mental causation and consciousness. In A. Antonietti, Corradini, & E. J. Lowe (Eds.), *Psycho-physical dualism today: An interdisciplinary approach* (pp. 271–283). New York, NY: Lexington.
- Knoblauch, H., Schmied, I., & Schnettler, B. (2001). Different kinds of near-death experience: A report on a survey of near-death experiences in Germany. *Journal of Near-Death Studies*, 20(1), 15–29.
- Koons, R. C., & Bealer, G. (Eds.). (2010). *The waning of materialism*. Oxford, England: Oxford University Press.

- Kurtz, P. (1985). *A skeptic's handbook of parapsychology*. Amherst, NY: Prometheus.
- Laszlo, E. (2004). *Science and the akashic field: An integral theory of everything*. Rochester, VT: Inner Traditions.
- Laubscher, B. J. F. (1963). *Where the mystery dwells*. Cambridge, England: James Clarke.
- Lawrence, M. (1993). Paranormal experiences of previously unconscious patients. In L. Coly & J. D. S. McMahon (Eds.), *Parapsychology and Thanatology* (pp. 122–148.). New York, NY: Parapsychology Foundation.
- Marshall, P. (2005). *Mystical encounters with the natural world: Experiences and explanations*. Oxford, England: Oxford University Press.
- Marshall, P. (2011). The psychical and the mystical: Boundaries, connections, common origins. *Journal of the Society for Psychical Research*, 75(902), 1–13.
- Mays, R. G., & Mays, S. B. (2008). The phenomenology of the self-conscious mind. *Journal of Near-Death Studies*, 27(1), 5–45.
- Mays, R., & Mays, S. (2010, September). The mystery of physical interactions in NDEs. Paper presented at the conference of the International Association for Near-Death Studies, Denver, Colorado.
- Meixner, U. (2008). *The two sides of being: A reassessment of psycho-physical dualism*. Paderborn, Germany: Mentis.
- Meixner, U. (2010). Materialism does not save the phenomena—and the alternative which does. In R. C. Koons & G. Bealer (Eds.), *The waning of materialism* (pp. 417–437). Oxford, England: Oxford University Press.
- Migliore, V. (2007). Statistical summary of near-death experience reports. Retrieved from http://www.iands.org/nde_index/ndes/key_facts_about_near-death_experiences_7.html.
- Moody, R. (1975). *Life after life: The investigation of a phenomenon—survival of bodily death*. Atlanta, GA: Mockingbird Books.
- Moody, R., & Perry, P. (1988). *The light beyond*. Toronto, Canada: Bantam Books.
- Morse, M., & Perry, P. (1990). *Closer to the light: Learning from children's near-death experiences*. New York, NY: Villard Books.
- Morse, M., & Perry, P. (1993). *Transformed by the light: The powerful effect of near-death experiences on people's lives*. London, England: Piatkus.
- Myers, F. W. H. (1886). On telepathic hypnotism, and its relation to other forms of hypnotic suggestion. *Proceedings of the Society for Psychical Research*, 4, 127–188.
- Myers, F. W. H. (1891). Science and a future life. *Nineteenth Century*, 29, 628–647.
- Nagel, T. (1986). *The view from nowhere*. Oxford, England: Oxford University Press.
- Nelson, G. K. (1970). Preliminary study of the electroencephalograms of mediums. *Parapsychologia*, 4, 30–35.
- Nichol, G., Thomas, E., Callaway, C. W., Hedges, J., Powell, J. L., Aufderheide, T. P., . . . Stiell, I. (2008). Regional variation in out-of-hospital cardiac arrest incidence and outcome. *Journal of the American Medical Association*, 300(12), 1423–1431.
- Nida-Rümelin, M. (2007). Dualist emergentism. In B. P. McLaughlin & J. Cohen (Eds.), *Contemporary debates in philosophy of mind* (pp. 269–286). Oxford, England: Blackwell.

- Nimnuan, C., Hotopf, M., & Wessely, S. (2001). Medically unexplained symptoms: An epidemiological study in seven specialities. *Journal of Psychosomatic Research*, *51*(1), 361–367.
- Nouri, F. M., & Holden, J. M. (2008). Electromagnetic aftereffects of near-death experiences. *Journal of Near-Death Studies*, *27*(2), 83–110.
- O'Connor, T., & Churchill, J. R. (2010). Nonreductive physicalism or emergent dualism? The argument from mental causation. In R. C. Koons & G. Bealer (Eds.), *The Waning of Materialism* (pp. 261–279). Oxford, England: Oxford University Press.
- Palmer, J. (1979). A community mail survey of psychic experiences. *Journal of the American Society for Psychical Research*, *73*(3), 221–251.
- Parker, A. (2001). What can cognitive psychology and parapsychology tell us about near-death experiences? *Journal of the Society for Psychical Research*, *65*, 225–240.
- Parnia, S., Waller, D. G., Yeates, R., & Fenwick, P. (2001). A qualitative and quantitative study of the incidence, features and aetiology of near death experiences in cardiac arrest survivors. *Resuscitation*, *48*(2), 149–156.
- Peberdy, M. A., Ornato, J. P., Larkin, G. L., Braithwaite, R. S., Kashner, T. M., Carey, S. M., . . . Gerg, R. A. (2008). Survival from in-hospital cardiac arrest during nights and weekends. *Journal of the American Medical Association*, *299*(7), 785–792.
- Pennachio, J. (1986). Near-death experience as mystical experience. *Journal of Religion & Health*, *25*(1), 64–72.
- Potts, M. (2010, September). Background assumptions and evidence for survival: A critique of Stephen Braude. Paper presented at the conference of the Society for Psychical Research, University of Sheffield, UK.
- Radin, D. (1997). *The conscious universe: The scientific truth of psychic phenomena*. New York, NY: Harper Edge.
- Radin, D. (n.d.). My spoon-bending experience. Retrieved from <http://www.deanradin.com/spoon.htm>
- Raine, K. J. (1975). *The land unknown*. London, England: Hamish Hamilton.
- Rhine, L. E. (1962). Psychological processes in ESP experiences. Part II. Dreams. *Journal of Parapsychology*, *26*, 172–199.
- Rhine, L. E. (1981). *The invisible picture: A study of psychic experiences*. Jefferson, NC: McFarland.
- Ring, K. (1980). *Life at death: A scientific investigation of the near-death experience*. New York, NY: Coward, McCann & Geoghegan.
- Ring, K. (1984a). The nature of personal identity in the near-death experience: Paul Brunton and the ancient tradition. *Anabiosis—The Journal for Near-Death Studies*, *4*(1), 3–20.
- Ring, K. (1984b). *Heading toward omega: In search of the meaning of the near-death experience*. New York, NY: William Morrow.
- Ring, K., & Cooper, S. (1999). *Mindsight: Near-death and out-of-body experiences in the blind*. Palo Alto, CA: William James Center for Consciousness Studies.
- Ring, K., & Lawrence, M. (1993). Further evidence for veridical perception during near-death experiences. *Journal of Near-Death Studies*, *11*(4), 223–229.
- Ring, K., & Valarino, E. E. (1998). *Lessons from the light: What we can learn from the near-death experience*. New York, NY: Insight Books.
- Rivas, T. (2003). The survivalist interpretation of recent studies into the near-

- death experience. *The Journal of Religion and Psychological Research*, 26(1), 27–31.
- Rivas, T. (2010). Is it rational to extrapolate from the presence of consciousness during a flat EEG to survival of consciousness after death? *Journal of Near-Death Studies*, 29(2), 355–361.
- Rivas, T., & Dirven, A. (2009). Twee BDE's gemeld naar aanleiding van "de man met het gebit" [Two NDEs reported in response to the "Man with the Dentures"]. *Terugkeer*, 20(3), 9.
- Rousseau, D. (2011). Understanding spiritual awareness in terms of anomalous information access. *The Open Information Systems Journal, Special Issue: Information and Spirituality*, 3(1), 40–53.
- Rousseau, D. (under review). The implications of near-death experiences for research into the survival of consciousness.
- Sabom, M. (1982). *Recollections of death: A medical investigation*. New York, NY: Harper & Row.
- Safar, P. (1988). Resuscitation from clinical death: Pathophysiologic limits and therapeutic potentials. *Critical Care Medicine*, 16(10), 932–941.
- Sannwald, G. (1963). On the psychology of spontaneous paranormal phenomena. *International Journal of Parapsychology*, 5(3), 274–292.
- Sartori, P. (2005). *A prospective study to investigate the incidence and phenomenology of near-death experiences in a Welsh intensive therapy unit* (Unpublished doctoral dissertation). University of Wales, Lampeter, Wales.
- Schiller, F. C. S. (1894). *Riddles of the Sphinx: A study in the philosophy of evolution* (2nd ed.). London, England: S. Sonnenschein.
- Schwaninger, J., Eisenberg, P. R., Schechtman, K. B., & Weiss, A. N. (2002). A prospective analysis of near-death experiences in cardiac arrest patients. *Journal of Near-Death Studies*, 20(4), 215–232.
- Searle, J. R. (1992). *The rediscovery of the mind*. Cambridge, MA: MIT Press.
- Sharp, K. (1995). *After the light: What I discovered on the other side of life that can change your world*. New York, NY: William Morrow.
- Sheldrake, R. (1999). The sense of being stared at confirmed by simple experiments. *Biology Forum*, 92, 53–76.
- Sheldrake, R. (2000). Telepathic telephone calls: Two surveys. *Journal of the Society for Psychical Research*, 64, 224–232.
- Sheldrake, R. (2002). Apparent telepathy between babies and nursing mothers: A survey. *Journal of the Society for Psychical Research*, 66, 181–185.
- Sheldrake, R. (2005). The sense of being stared at—Part 1: Is it real or illusory? *Journal of Consciousness Studies*, 12, 10–31.
- Sheldrake, R., & Brown, D. J. (2001). The anticipation of telephone calls: A survey in California. *Journal of Parapsychology*, 65, 145–156.
- Snijders, T., Leeuw, F.-E., Klumpers, U. H., Kappelle, L. J., & Gijn, J. (2004). Prevalence and predictors of unexplained neurological symptoms in an academic neurology outpatient clinic. *Journal of Neurology*, 251(1), 66–71.
- Stoljar, D. (2009). Physicalism. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy (Fall 2009 ed.)*. Retrieved from <http://plato.stanford.edu/archives/fall2009/entries/physicalism/>
- Strassman, R. (2001). *DMT: The spirit molecule: A doctor's revolutionary research into the biology of near-death and mystical experiences*. Rochester, VT: Park Street Press.

- Sutherland, C. (1989). Psychic phenomena following near-death experiences: An Australian study. *Journal of Near-Death Studies*, 8(2), 93–102.
- Swinburne, R. (1986). *The evolution of the soul*. Oxford, England: Oxford University Press.
- Targ, E., Schlitz, M., & Irwin, H. J. (2000). Psi-related experiences. In E. Cardeña, S. J. Lynn, & S. Krippner (Eds.), *Varieties of anomalous experience: Examining the scientific evidence* (pp. 219–252). Washington, DC: American Psychological Association.
- Tart, C. (1981). Transpersonal realities or neurophysiological illusions: Toward an empirically testable dualism. In R. S. Valle & R. von Eckartsberg (Eds.), *The Metaphors of Consciousness* (pp. 199–222). New York, NY: Plenum Press.
- Thalbourne, M. A. (1994). The SPR centenary census: II. The survey of beliefs and experiences. *Journal of the Society for Psychical Research*, 59, 420–431.
- Thalbourne, M. (2004). A note on paranormal belief and paranormal experience: Their levels, absolute and relative. *Journal of the Society for Psychical Research*, 68.2(875), 115–121.
- Thouless, R. H., & Wiesner, B. P. (1948). The psi processes in normal and “paranormal” psychology. *Proceedings of the Society for Psychical Research*, 48(174), 177–196.
- Tyrrell, G. N. M. (1945). *The personality of man*. New York, NY: Penguin.
- van Lommel, P., van Wees, R., Meyers, V., & Elfferich, I. (2001). Near-death experiences in survivors of cardiac arrest: A prospective study in the Netherlands. *The Lancet*, 358(9298), 2039–2045.
- van Lommel, P. (2010). *Consciousness beyond life: The science of the near-death experience*. New York, NY: HarperOne.
- Walach, H., & Schmidt, S. (2005). Repairing Plato’s life boat with Ockham’s razor: The important function of research in anomalies for consciousness studies. *Journal of Consciousness Studies*, 12, 52–70.
- Wiener, N. (1961). *Cybernetics: Control and communication in the animal and the machine* (2nd ed.). Cambridge, MA: MIT Press.
- Zingrone, N. L., & Alvarado, C. S. (2009). Pleasurable Western adult near-death experiences: Features, circumstances, and incidence. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO.