

## RESEARCH ARTICLE

### The Implications of Near-Death Experiences for Research into the Survival of Consciousness

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Submitted 9/9/2010, Accepted 11/20/2011

**Abstract**—It is generally supposed by psychical researchers that (a) evidence suggestive of consciousness surviving bodily death would always be compatible with the so-called “super-psi hypothesis,” according to which living-agent psi is wholly responsible for the evidence, and (b) in terms of their respective scientific merits the super-psi hypothesis and the survival hypothesis are on a par. This has produced an explanatory impasse regarding survival evidence. In this paper, I argue that certain kinds of near-death experience cases challenge the premises and the parsimony of the super-psi hypothesis. I argue that from this base the general explanatory impasse between the super-psi hypothesis and the survival hypothesis can be broken.

*Keywords:* near-death experiences (NDEs)—super-psi—survival—consciousness—mind–body dualism

#### Introduction: The Super-Psi Challenge

In a recent essay in this *Journal*, Emily Kelly called for a revival in mediumship research, in the spirit of psychical research (2010). She pointed out that psychical research originated in the late 19<sup>th</sup> century in an attempt to answer first the broad question of whether mind or consciousness is solely a product of the brain, and second the narrower (but related) question of whether human personality survives bodily death (Kelly 2010:247). Both of these questions are still unanswered today.<sup>1</sup> Psychical research represents a distinct interest from that of parapsychology, which is concerned with the narrower objective of the experimental investigation of psi (Kelly 2010:279, note 1), “psi” being a generic designator for cognitive or influential capacities that are not mediated by the known bodily channels (Thouless & Wiesner 1948). Cognitive psi is also known as “extrasensory perception” or ESP, and influential psi is also known as psychokinesis or PK. The research interest in studying psi originated in

psychical research, on the premise that understanding the nature of psi would be of some help in answering the two core questions. At present there is very good evidence for the existence of psi (Braude 1986, 2002, Kelly, Kelly, Crabtree, Gauld, Grosso, & Greyson 2007, Radin 1997), but its nature is still unknown.

The question of whether consciousness can be accounted for in physicalistic terms is currently the subject of a very substantial debate in philosophy of mind, supplemented by research in neurology, psychiatry, and cognitive psychology. This debate is still very far from developing converging points of view (Crane 2001:viii, Heil 2004:129, Searle 2005:1,6). Jaegwon Kim has since the 1990s been arguing that the mainstream view is logically inconsistent (e.g., 2006:290–299), and some claim that this debate has reached an impasse (Burge 2010:236, note 4, Heil 2003:2). Kim has recently argued that the commitment to the world being “at bottom” exclusively physical in nature renders the puzzle of consciousness insoluble (Kim 2008:271). Carl Gillett similarly argues that the mainstream view, which he calls *Standard Non-Reductive Physicalism*, “is such that we cannot even imagine how it could be true” (Gillett 2010:27).

In this context, research into whether consciousness can survive the death of the body (hereafter, “survival research”) may be of seminal importance, since it may show the way in which mainstream scientific premises have to be extended if the nature of mind and consciousness is to be understood. However, the survival question has largely disappeared from mainstream research, both philosophically and scientifically. As Stephen Braude reports, “only a handful of philosophers have taken both a serious and a well-informed interest in the conceptual problems of survival research” (2009:200). Early empirical investigation into the survival question was dominated by research into the phenomena of trance mediumship, and a vast amount of high-quality evidence was amassed in the first 50 years or so (Gauld 1982, Grattan-Guinness 1982, Griffin 1997). However, this research pretty much ground to a halt in the middle of the 20th century because researchers found themselves unable to adjudicate between the hypothesis that discarnate entities were involved in the production of mediumistic phenomena (“the survival hypothesis”) and the alternative view that the psi of living agents was wholly responsible for it (“the super-psi hypothesis”) (Cook 1987, Gauld 1961). This impasse still stands today (Kelly 2010:251). Braude recently (2009:209) reiterated his long-standing view (1992, 2003) that it may be impossible to defend the survival hypothesis against the super-psi hypothesis.

Some have argued that the super-psi hypothesis is unfalsifiable (e.g., Almeder 1992:51–53), but according to Braude it is not invulnerable. According to him it is not that nothing can count against the super-psi hypothesis, but that the evidence we have in hand is not good enough to break the impasse. Unfortunately, evidence of the right sort is unlikely to be forthcoming (Braude

2003:18–20). Braude has gone to some lengths to explain what sorts of evidence would be compelling (e.g., 2003:Chapter 9, 2005). He has argued that for cases sufficiently rich in detail we would be rationally warranted to rule against the super-psi hypothesis even though the evidence would still be compatible with the super-psi hypothesis (2003:17–18). However, he recently said that we still do not have any such cases (2010).

However, finding such cases is not necessarily the only way in which the super-psi hypothesis can be challenged. I will argue below that given the commitments of the super-psi hypothesis it is possible to see how there can in fact be counterexamples to it, and then go on to argue that certain NDE cases present such counterexamples.

### **The Super-Psi and Survival Hypotheses Compared**

To set the stage for the discussion to follow, I will first explain the rationale behind the super-psi hypothesis, and then compare the main commitments of the super-psi hypothesis with those of the survival hypothesis. Following that I will show how the impasse between the hypotheses arises.

#### ***The Nature of the Super-Psi Hypothesis***

In general terms, the super-psi hypothesis works like this. There is good evidence that people have informational and influential faculties that are not mediated by the known bodily channels, and that may be in principle beyond explanation in purely physicalistic terms. This is normally referred to as “psychic ability” or “psi” (for accessible overviews, see Braude 1986, 2002, Broughton 1991, Radin 1997). This capacity appears to be widespread (Cardeña, Lynn, & Krippner 2000:222–223, Haraldsson 1985) but typically very weak (Palmer 1979, Thalbourne 1994, 2004), especially under test conditions, where it is often undetectable (Irwin & Watt 2007:4,6,7). Nevertheless, certain individuals (“psychics” or “mediums”) normally have strong abilities of this kind (see for example Barrington, Stevenson, & Weaver 2005, Méheust 2003), and *under special conditions*, typically crises, average people can have powerful psychic experiences, too (see for example Gurney, Myers, & Podmore 1886). The inference is drawn that most people, if not all, have potentially powerful psi, but that for most this ability is normally inhibited (or only used in inconspicuous ways), although it can manifest more powerfully (or more openly) under certain conditions, typically mortal danger or deep psychological stress. Just like any other faculty, the use and focus of this ability is determined by an agent’s needs and interests. For this reason, Braude calls this the “*motivated psi hypothesis*” (2003:13). The implication is that if people have a sufficiently strong motivation, they can manifest psi powers to an extraordinary degree. This is typically called

“super-psi” in contrast to “ordinary psi,” but as Braude argues it is really just the normal psi faculties somehow unleashed (or unmasked) by the agent’s strong needs or interests.

The idea is therefore that if people’s psi can manifest powerfully to collect information or cause effects that would serve their deep or intense needs, then if they really yearned to believe in survival of consciousness (e.g., in their grief over a deceased child), their psi could subtly obtain relevant veridical information from this-world sources, and present it to them in such a way as to give them the reassurance they are yearning for. The argument now goes that, granted this possibility, and given evidence ostensibly indicating survival of consciousness (e.g., apparent communication with a deceased person via a medium or in a dream), it is not possible to decide whether the origin of the experience lies in the super-psi of the needful agent or in the actions of a discarnate entity. This indecision is rendered the more acute by how difficult it is to identify people’s “real” drives and motivations, since so many of these are unconscious and may even be contrary to what they themselves consciously think their needs and drives are (if they think consciously about them at all).

The only philosopher to have subjected this argument to substantive scrutiny in the light of a wide range of relevant evidence is Stephen Braude, in his book *Immortal Remains* (2003). He concluded that philosophical considerations and the evidential weight support a rational hope of survival, but not much more than that—he only grants “believing” with “little assurance but with some justification” that *some* survive for *some* time (Braude 2003:23,306).<sup>2</sup> The reason for his carefully caveated conclusion is that the super-psi hypothesis appears to be, on the wide range of evidence he considered, ineliminable and infeasible. His analysis was focused, however, on the historically dominant areas of survival research, which is represented largely by cases of mediumship and ostensible reincarnation or possession (jointly six chapters), hauntings (one chapter), and out-of body experiences (OBEs) (one chapter). The more recent field of NDE research was only given just over five pages (as a subsection of the OBE chapter). Near-death studies is, however, a rapidly growing field of research, and I would suggest that developments in this area provide scope for a reassessment of Braude’s conclusions.

### ***The Super-Psi and Survival Hypotheses Summarized***

The two competing hypotheses can now be stated more succinctly, and their commitments compared, as follows:

***The Super-Psi Hypothesis:*** *All evidence suggestive of survival is the product of powerful subconscious psychic activity by living agents, mobilized and guided by deep-seated psychological needs.*

The super-psi theorist is obviously committed to the existence of psi, but as it stands the super-psi hypothesis does not commit the super-psi theorist either way concerning the existence of souls or survival. However, it does rule out a belief in discarnate souls that can interact with the world of the living (“discarnate interactionism”).<sup>3</sup> So the super-psi theorist may in fact be sympathetic to the ideas of dualism and/or survival, but just not think that discarnate interactionism is the best explanation for the evidence suggestive of survival.

***The Survival Hypothesis:*** *The best cases representing evidence suggestive of survival derive mostly from interaction between living people and the discarnate souls of formerly living persons.*

As it stands, the survival hypothesis commits the survival theorist (“survivalist”) to the following:

1. Living persons are composed of a physical part (“body”) and a supra-physical part (a “soul”);
2. The soul survives the death of the body;
3. The soul is the essential bearer of the person’s mental and psychic properties;
4. Discarnate souls (“spirits”) can via their psychic abilities interact with living people and the ordinary physical world.

The survivalist is not in a position to regard the super-psi hypothesis as unlikely. On the survivalist model, discarnate persons are just souls, and therefore the commitment to discarnate interactionism entails that souls have psychic powers. By implication, the survivalist must then hold that incarnate persons have psychic powers because souls have them. Absent a theory about how psi operates, and how embodiment affects the soul’s psychic powers, it is reasonable to suppose that living people could have psychic powers that are in principle of similar power to those of discarnate souls. The survivalist has therefore to be sympathetic to the idea that something like the process implied by the super-psi hypothesis is plausible, and may in fact sometimes occur, at least to some degree. And in practice this is apparently how things turn out—Sudduth has argued that in the case of mediumship evidence the power and complexity of psi demanded by discarnate interactionism (in accordance with the survival hypothesis) is of the same order as the living-agent psi required by the super-psi hypothesis, and he presented evidence that psi among the living is at least sometimes a component of mediumship evidence (2009:184,169).

Although the reasonable survivalist cannot reject the plausibility of the super-psi hypothesis, or that living-agent psi accounts for some of the evidence, they must nevertheless hold that the best explanation for the survival-suggestive evidence is that some interaction with discarnate souls is involved.

***The Nature of the Impasse between the Survival Hypothesis and the Super-Psi Hypothesis***

Theories have qualities philosophers of science call “theoretical virtues.” These are qualities good theories typically have, such as explanatory power, falsifiability, parsimony, predictive powers, and coherency. These qualities are especially valuable in cases where we have to choose between theories with different underlying assumptions but which explain the data equally well (Harman 1965, Lipton 2000, 2004, Thagard 1978) (this is a common occurrence in science).

The impasse between the super-psi and survival hypotheses really exists not because they are equivalent in the virtue of explanatory power, but because when they are compared in terms of other theoretical virtues neither has a decisive overall advantage.

The super-psi–survival virtue tradeoff discussions given in the literature vary widely in depth and clarity, but the classic text is Braude (2003), supplemented by Braude (2009) and Sudduth (2009). Largely following these sources, the tradeoff seems (briefly) to play out like this:

1. **Empirical adequacy:** So far, the super-psi and the survival hypotheses both account for all the known data, so on empirical adequacy we have a draw (see, e.g., Braude 2003:20, but there seems to be widespread agreement on this).
2. **Ontological conservatism:** The super-psi hypothesis draws only on claims for psi powers and psychological mechanisms that there are already ample independent evidence for (Sudduth 2009:168), but the survival hypothesis assumes the existence of discarnate souls with psi powers, which we do not have independent evidence for outside the context of survival-suggestive evidence (Sudduth 2009:189). In terms of ontological conservatism, the super-psi hypothesis has the advantage.
3. **Explanatory simplicity:** The super-psi hypothesis produces very complex explanations, while the survival hypothesis produces very straightforward explanations. Advantage to the survival hypothesis (Braude 2003:216,305).
4. **Causal interference:** Causal exchanges are subject to modulation and interference by other causes operative at the same time. The super-psi hypothesis requires navigation of a very complicated causal nexus, but the survival hypothesis requires only that a single connection be made and hung on to. Braude regards the survival hypothesis as having the better chance of succeeding as far as causal interference is concerned (2003:305–306). Sudduth has pointed out that for some mediumship

cases the hurdle is similar (2009:179–181), but this is not enough to suggest that it is always similar, so the advantage to the survival hypothesis stands.

5. **Antecedent probability:** Antecedent probability of each hypothesis being right is about the same, since we have multiple lines of evidence for survival but also a very substantial database on living agent psi (Sudduth 2009:302–303).
6. **Plausibility:** The strength of psi required by either hypothesis is about the same (Braude 2003:20, Sudduth 2009:184), so the survival and the super-psi hypotheses are equally plausible.
7. **Actuality:** David Lund (2009:149–150) argued that the logical possibility of the super-psi hypothesis does not mean that that is what is actually going on in these cases, and nothing has been said to defend that super-psi is what is actually going on. However, the converse is also true: The survival hypothesis equally stands in need of a defense that something like discarnate interactionism is actually going on in these cases. Neither side seems able to do either without begging the question, so we have another draw. Sudduth has shown that some of the information in mediumship cases comes from psi among the living (Sudduth 2009:169, note 4,190), but this is not sufficient to show that this is superpsi at work or that nothing else is going on, so the draw stands.
8. **Minimal ad hocness:** Both the super-psi and the survival hypotheses appear to be compatible with all the data, but neither can be used to produce testable predictions (Braude 2003:18–19). Since they were each invoked specifically to explain the given dataset, and neither has explanatory or predictive value beyond the dataset they were set up to account for, they are both ad hoc hypotheses.
9. **Falsifiability:** Both the super-psi and the survival hypotheses are regarded as unfalsifiable in a strong sense, since they do not generate testable predictions. Braude has pointed out there may nevertheless be rational grounds for ruling against the super-psi hypothesis if we obtain sufficiently detailed cases (Braude 2003:17–19), and as Steven Hales has pointed out there may be rational grounds for ruling against the survival hypothesis, for example if we discover that mischievous but technologically advanced aliens are behind the survival-suggestive evidence (Hales 2001:342). However, these would be pragmatic decisions about specific cases and not a general refutation of the possibilities entailed by the respective hypotheses. Another draw.

There are many other virtues, but these are not normally brought into the

super-psi vs. survival discussion because neither hypothesis has any of them. I know of at least another 16 theoretical virtues that here play out in that way, for example neither hypothesis has any predictive power (since they are both ad hoc), neither fits into the mainstream scientific framework (because they are both committed to the existence of psi), both challenge fundamental scientific assumptions (again because of their commitment to psi), neither has theoretical depth (since we have no theory of either souls or psi), neither has relevance for areas of knowledge outside the survival-suggestive evidence, and so on.

In terms of the virtues mentioned, numbers 2 and 3 cancel each other out. Apart from number 4, everything else is a draw already. We can draw up a scorecard where we award a point to a hypothesis for each virtue it has, except when its rival is better in which case it gets a zero. From the list discussed above, the scorecard would appear as given in Table 1 below.

Table 1 shows that the survival hypothesis has a slight advantage, as Braude concluded in *Immortal Remains* (2003:306). However, this advantage is not worth very much. First, both hypotheses are weak, since in principle at least 25 criteria are at stake. In percentage terms, the score ratio is therefore something like 16%:20%. Second, as Braude and others have argued, the virtue of explanatory simplicity is somewhat suspect, since explanatory simplicity in one part of a theory is often later offset by complexity somewhere else

**TABLE 1**  
**A Simple Theoretical Virtues Scorecard**

	Theoretical Virtue	Score	
		Super-Psi Hypothesis	Survival Hypothesis
1	Empirical adequacy	1	1
2	Ontological conservatism	1	0
3	Explanatory simplicity	0	1
4	Causal interference	0	1
5	Antecedent probability	1	1
6	Plausibility	1	1
7	Actuality	0	0
8	Minimal ad hocness	0	0
9	Falsifiability	0	0
10–25	Unconsidered criteria	0	0
	<b>Total score</b>	<b>4</b>	<b>5</b>
	<i>Possible score</i>	25	25

(2003:301). If this is right, the ratio is 16%:16%. Either way we have an impasse (or something near enough) between two weak theories.

The evaluation given in Table 1 is of course debatable. The scoring was very coarse, the virtues were not weighted relative to each other, they are not completely independent of each other, and there are other virtues that have not been mentioned. The issue of weighting is a particular concern, since some theoretical virtues are more important than others, for instance virtues such as empirical adequacy and ontological conservatism are usually given more weight than for example explanatory simplicity. As things stand, applying such weightings would favor the super-psi hypothesis. On Sudduth's remarks, we might also regard number 4 as being closer to a draw than giving a clear advantage to survival hypothesis. The super-psi hypothesis would then be favored even more, and likewise the draw in number 7 could be regarded as a tradeoff giving a slight advantage to the super-psi hypothesis. Given what is at stake, and given the great uncertainties that remain, these slight differences are probably not enough to break the impasse. However, as things stand the super-psi theorist is probably entitled to feel more optimistic about the potential of the super-psi hypothesis to win out than the survivalist is entitled to feel about the prospects for defending the survival hypothesis.

Most researchers favor one of the hypotheses, but granted the virtue balance (or something near enough) they presumably derive their position from other grounds, such as religious convictions, intuition, personal experiences, different views on how to assign weights to different theoretical virtues, or even inadequate information. However, the objective for anyone in the debate must be to try to find a way of breaking the impasse in a *generally acceptable* way. Limited options are available for doing *that*. Possibilities include trying to find arguments or evidence that breaks the draw on some of the virtue tradeoffs, or introducing arguments around unconsidered virtues that may be differentiating (e.g., predictive power or vertical depth), or arguing for weighting the virtues so that the differentiating ones do not overall end up cancelling each other out. However, given that not everyone views the scorecard in quite the same way, and that in any case the variety and relative weights of theoretical virtues are not settled in the philosophy of science (Maxwell 2004), the impasse probably cannot be decisively broken without developing a range of discriminating advantages.

### ***Falsifiability Reconsidered***

As mentioned above, the super-psi hypothesis is widely regarded to be unfalsifiable in a strong sense, on the basis that it does not entail any predictions we can test. It is furthermore supposed that for all evidence suggestive of survival, it would always be possible to construct a super-psi-based theory that is compatible with the given evidence, since we do not know how powerful psi

could be, nor how subtle or covert it could be, and we cannot hope to fathom all the unconscious mediating processes that may be involved. On this basis it has been argued that perhaps the only way to rule against the super-psi hypothesis would be to find cases that are so rich in details that it would be unreasonable (perhaps even irrational) not to rule against it (Braude 2003:17–19).

However, in my view there is another way to challenge the super-psi hypothesis, by identifying cases that challenge its premises or ontological parsimony. The super-psi hypothesis is grounded in the conjunction of two very specific claims, namely that super-psi is motivated by deep-seated needs or intense emotions, and that it operates to produce compensatory or mitigating outcomes. This suggests that at least in principle it may be possible to find cases where psychological motivations needed to mediate super-psi are clearly absent, or where the outcomes are contrary to how things would be if super-psi were involved (e.g., the psychological stresses are not mitigated, and may even be enhanced). Note that such a counterexample would not count against the existence of super-psi, but only against it being the source of the survival-suggesting evidence in that given case. However, for these cases it may be impossible to develop explanations that maintain the super-psi hypothesis's neutrality about the existence of souls.

I will argue below that such counterexamples exist.

## **NDEs and the Super-Psi Hypothesis**

### ***Background***

In my view, evidence that is crucially telling for this debate is becoming available from the new field of academic research called near-death studies that was triggered by the publication of Raymond Moody's book *Life after Life* in 1975. This research is centered on near-death experiences (NDEs). NDEs are "profound psychological events with transcendental and mystical elements, typically occurring to individuals close to death or in situations of intense physical or emotional danger" (Greyson 2000:315). However, qualitatively equivalent experiences occur under non-crisis conditions as well. 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 about 4% of the general population (Gallup & Proctor 1982, Knoblauch, Schmied, & Schnettler 2001). Tens of thousands of cases have been collected by researchers. Three important case archives have been established: one at the Religious Experience Research Centre, based at the University of Wales Trinity

Saint David; one at the Division of Personality Studies of the University of Virginia; and one at the Near-Death Research Foundation. These archives hold approximately 4,000 case reports. More than 65 research studies involving nearly 3,500 NDErs had been published by 2005 (Holden, Greyson, & James 2009:7).

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

According to mainstream medical and philosophical paradigms, such experiences cannot happen. Cardiac arrest is a physiologically brutal event, which leads within 10–20 seconds to a state called clinical death, with no heartbeat, no breathing, no detectable electrical activity in the brain, and no brainstem reflexes (Fenwick & Fenwick 2008:206, Greyson 2010a). It is a very serious condition to be in, and only about 10% of people who suffer a cardiac arrest survive it (Ballew 1997, Nichol, Thomas, Callaway, Hedges, Powell, et al. 2008, Peberdy, Omato, Larkin, Braithwaite, Kashner, et al. 2008). Without medical intervention, cardiac arrest typically leads within five minutes to the onset of irreversible brain damage (Safar 1988), and within ten 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. For this reason, researchers sometimes refer to these two conditions as “reversible death” and “irreversible death.”

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, Kelly, & Kelly 2009:234)

Similar views are expressed by Kelly et al. (2007:421), Greyson (2007), and van Lommel (2010:158). These assertions are not lightly made, as explained below.

First, there is a substantial body of cardiac arrest NDE cases. By 2007, more than one hundred had been reported in the scholarly literature (Kelly et al. 2007:418), and many more have been reported since (Holden 2009, van Lommel 2010, Rivas & Dirven 2009).<sup>4</sup>

Second, the credibility of these reports is strongly reinforced by their high accuracy. In a recent review, Janice Holden has found that 90% of NDE reports of perceptual experiences during cardiac arrest or prolonged respiratory arrest contain no errors (2009:196). About 35% of these reports have been independently corroborated (Holden 2009). In contrast, Penny Sartori found that cardiac arrest survivors who did not report NDEs were unable to make accurate guesses as to what happened during their resuscitation (2005:292).

Third, some cardiac arrest NDE reports include very unusual incidents that occurred during the crisis, further strengthening their credibility, and also reinforcing the claim that these reports represent contemporaneous experiences (e.g., Cook, Greyson, & Stevenson 1998:388–390, van Lommel, van Wees, Meyers, & Elfferich 2001:2041, Moody & Perry 1988:18–19,19–20, Morse & Perry 1993:201, Ring & Cooper 1999:18–21, Ring & Lawrence 1993:226–227,227,227–228, Sharp 1995:3–16).<sup>5</sup>

Fourth, several cases include veridical reports of incidents that occurred beyond the range of the ordinary bodily senses, which substantially raises the stakes against finding orthodox interpretations (Cook, Greyson, & Stevenson 1998:388–390,392–395, Moody & Perry 1988:18,19–20,172, Ring & Lawrence 1993:226–227, Sharp 1995:3–16).

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 2010:363). But these functions must be the functions of something, and 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, a conviction that some kind of mind–body substance dualism is true. Substance Dualism is among the least popular mind–body models in current philosophy, largely due to a mistaken but widely held view that substance dualism equates to *Cartesian* Substance Dualism, which is not only a supernaturalistic doctrine but actually an incoherent one (see, e.g., Dennett 1991:35, Kim 2001). However, it is possible to frame substance dualism in a way that escapes the problems inherent to Cartesian Dualism, as some monists admit (e.g., Lycan 2009). For recent examples of Non-Cartesian Dualisms, see for example Beck (2008), Hart (2009), von Kutschera (2008), Meixner (2008), and Thompson (2008). It should also be kept in mind that such substance dualisms need not be ultimate theories, but may represent a contingent state of affairs grounded in an underlying Neutral Monism. Such models, which combine “functional dualism” with “energy monism,” have

been proposed, for example by Mark Woodhouse (1996:Chapters 5,6) and Ervin Laszlo (2004:111–113).

Within the database of NDE cases, cardiac arrest cases are relatively rare, representing less than 1% of all documented cases. 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, suicide attempts, etc. (Fenwick & Fenwick 1995:158–159, Fox 2003:98–103, Greyson & Stevenson 1980, Greyson 1991, 2007). This suggests that all NDEs are mediated by a common mechanism, which can be “activated” in multiple ways.<sup>6</sup> This is a valuable connection to be able to make since it dramatically increases the phenomenological database we can draw on for theory-building.

The conviction that NDEs provide support for a dualistic view is reinforced by further evidence that suggests that individual “minds” can survive the irreversible death of the body by a significant period, as discussed in the next section.

### ***NDEs as Evidence Suggestive of Survival***

Persons who are dying while conscious often experience visions in which they report the presence of previously deceased family members or friends (Barrett 1926, Fenwick & Fenwick 2008, Kelly et al. 2007:390–391). Similar encounters occur in NDEs: About 21% of NDE accounts include reports of encounters with deceased persons (Greyson 2010b). In a survey of 74 NDE cases, Emily Kelly found 129 reports of encounters with spirits, mostly representing a previous generation (81%). Only 16% were from the same generation as the NDEr (e.g., siblings or spouses), and 2% were from the next generation (e.g., daughters or nephews) (Kelly 2001). Kelly has pointed out that while such experiences might conceivably be triggered by expectations of imminent personal death, this hypothesis seems less plausible when the visions include deceased persons other than the one(s) the experiencer would wish to see and/or visions of unidentified deceased persons (Kelly 2001). Even more challenging for the “expectancy hypothesis” are cases with special veridical attributes, such as the so-called “Peak in Darien” cases,<sup>7</sup> reviewed in some depth by Bruce Greyson (2010b). There are three kinds of these cases, namely:

- (a) cases in which the person seen had died up to a week before the vision, although that death was apparently unknown to the experiencer;
- (b) cases in which the person seen actually died at the time of, or immediately before, the vision, allowing no normal possibility for the

- experiencer to have learned of the death;
- (c) cases in which the deceased person seen was someone whom the experiencer had never known, but could afterward identify (e.g., from old photographs).

As Greyson reports, such cases are scattered throughout the literature. Although they are often inadequately documented, they are by no means rare. Fenwick and Brayne report six cases in a single recent study (Fenwick & Brayne 2011). Greyson reviews 28 cases: 15 examples of the first type (including two NDE cases, one of them a cardiac arrest case), nine of the second type (including four NDEs, two of which were cardiac arrest cases), and four of the third type (all four NDEs, two of them cardiac arrest cases) (2010b).

Of the 28 cases, ten also included encounters with persons who had been dead for years or decades (at least 16 encounters). Two of *these* cases were NDEs, one of which was a cardiac arrest case.

The veridical aspect of “Peak-in-Darien” cases suggests that these experiences cannot have a purely psychological origin, but must involve psi in some way. However, given the super-psi hypothesis presented above, it would appear undecidable whether these experiences really represent encounters with discarnate souls or are in fact merely need-serving hallucinations mediated by living-agent super-psi. The next sections will take a closer look at the forms the super-psi hypothesis must take to account for NDEs, and consider whether it is really the catchall solution it is generally assumed to be.

### ***The Super-Psi Hypothesis in Relation to NDEs***

The NDE evidence contains not only cases strongly suggestive of survival (e.g., “Peak in Darien” cases) but also cases strongly suggestive of mind–body dualism (e.g., lucid consciousness and veridical perception during cardiac arrest). Some “Peak in Darien” cases are also cardiac arrest cases, so carry both suggestions.

As discussed above, the super-psi hypothesis is neutral with regard to whether dualism and survival is true or not, rejecting only discarnate interactionism. In this way the super-psi hypothesis rejects that the survival-suggestive evidence counts in favor of the existence of souls (dualism) or their endurance beyond the death of the body (survival). It is an important theoretical virtue of the super-psi hypothesis that it can be used to construct explanations for the survival-suggestive evidence that do not involve claims about the existence, endurance, or interaction capabilities of souls. In order for the super-psi hypothesis to preserve its ontological conservatism when constructing explanations for NDE cases, it must therefore be set up in such a way that it blocks not only the inference to survival but also the inference to dualism.

This can be done, but it is severely constraining. It has been suggested (but not by super-psi theorists, as far as I know) that the cardiac arrest NDEs might involve precognitive or retrocognitive impressions that occur just before or just after the arrest period, such as would create the impression of continuity of consciousness during the cardiac arrest. In this scenario the subjects really are completely unconscious during their cardiac arrest, just as orthodox medical models would suggest. However, they would not be able to tell, since they have no experience of unconsciousness, and the experience they *did* have reflected the events that actually occurred during the arrest period. The experience would be convincing to them, but in fact it would be a false impression created as a psychological coping mechanism that deals with their fear of dying. By choosing the timing of the living-agent psi in this way, neither dualism nor survival is required to explain the data.

There is good evidence that people can have powerful psychic experiences during times of stress or danger (Gurney, Myers, & Podmore 1886, Sidgwick, Johnson, Myers, Podmore, & Sidgwick 1894), and we have good evidence for the existence of both precognition and retrocognition (Radin 1997), so this does not seem a far-fetched hypothesis. However, on closer consideration this proposal must be refined even further, in the following way.

The first thing to note is that the people who have NDEs are in no way exceptional individuals before their NDE. There appear not to be any personal or demographic factors that would make one more prone to having an NDE. As a group, NDErs appear to be psychologically healthy individuals and to be similar to comparison groups in age, gender, race, occupation, religion, religiosity, education, and mental health (Gabbard & Twemlow 1985, Greyson 1991, Irwin 1985, Ring 1980a, Sabom 1982). NDErs are not unusual in terms of measures of intelligence, neuroticism, extroversion, trait and state anxiety, and relevant Rorschach measures (Locke & Shontz 1983). The evidence also indicates that as a group NDErs are, before their NDE, no more prone to psychic experiences than the average population (Greyson 2003, Kohr 1982, 1983, Sutherland 1989). Some studies have suggested that NDErs remember their dreams more often, and are adept at using mental imagery (Irwin 1985), and have good short-term memory (van Lommel 2004). However, the nature of these traits suggests that these individuals report more NDEs because they are better able to remember and describe their experiences, rather than that these traits make them more prone to having an NDE.

For the present argument, the important implication is that NDErs are neither psychologically nor psychically unusual. They have the same motivations and fears people typically have, and do not have unusual psychic abilities (at least before their NDE). If NDEs are powerful precognitive or retrocognitive events, then they are indeed super-psi phenomena, that is, produced via the normal psi

of ordinary people put powerfully into play in service of a deep need or fear, such as fear of dying.

Fears related to dying are plausible as typical triggers for such super-psi events. 34% of Americans who have a close brush with death report associated “experiences” (Gallup & Proctor 1982). This is higher than Americans’ admission of fear of death as such, which ranges from about 20% for late teens to under 7% for those over 65 (Pinkus, Richardson, & Amet 2000), but lower than the number who fear a painful death (67%), or leaving loved ones behind (65%), or dying alone (43%) (Yankelovich Partners 2000).

If cardiac arrest NDEs actually occur precognitively or retrocognitively, this raises the question of just when they do occur. There is a good case for ruling out the transitional phases during which consciousness is lost or restored. At the onset of a cardiac arrest there is a very rapid transition to unconsciousness, and at normal body temperatures cerebral iso-electricity is reached in about 11 seconds. It is implausible that this rapidly declining brain activity can support the rich coherent narrative experiences afterward reported. After resuscitation, the recovery to full consciousness is slow and confusional, as it takes time for blood pressure to rise back to a level where the brain is properly oxygenated. This confusional state is very different from what is needed to support the clear coherent narrative structure of NDEs (Fenwick & Fenwick 2008:206–210). For present purposes, the implication is that if cardiac arrest NDEs are mediated by super-psi, they have to happen outside these transitional phases. However, if a retro-cognitive event occurred after the confusional recovery phase, there would be confused memories, but memories nonetheless, of this confusional period between the arrest and the retrocognitive event, which would destroy the illusion that the NDE occurred simultaneously with the arrest. A precognitive event immediately before the transition to unconsciousness would be convincing, however, since there is no intervening memory to give away the temporal asynchrony, and the alignment between the contents of the experience and the actual events would make them seem synchronous. So the overwhelming likelihood is that if NDEs are super-psi-mediated experiences then they are precognitive episodes. This has the implication that the NDE must be triggered in relation to deep fears or interests that the subject already had *before* the event, and not by concerns that are raised by the recognition that such an event has occurred or the actual shock to the system the event produces. The NDE therefore serves to provide reassurance in relation to these pre-existing concerns, not event-triggered new concerns.

In sum, a super-psi hypothesis that can explain cardiac arrest NDEs while remaining neutral about dualism and survival must be based on precognitive super-psi motivated by antecedently existing concerns. As I argued above, it is reasonable to suppose that the same sort of mechanism underlies all NDEs,

since they are phenomenologically consistent across different contexts. The implication is that the super-psi hypothesis would in general view NDEs as precognitive experiences motivated by antecedently existing concerns.

### ***NDEs of Young Children***

The NDEs of children have been much studied (e.g., Atwater 2003, Morse & Perry 1990, Sutherland 1995), and they are phenomenologically very similar to adult ones (Long & Perry 2010:137, Sutherland 2009:89). Children report them from all ages, and some even retrospectively report NDEs that occurred to them before they were able to talk (Sutherland 2009:92–93).

It has been suggested, for instance by Elisabeth Kübler-Ross, that young children do not understand death in the same way as adults do, and hence do not have death anxieties (1997). Titus Rivas has recently suggested that because children do not fear dying, they would not have the motivation needed to trigger a super-psi episode to help them cope with a life-threatening crisis (2010:358–359). Unfortunately things are not so straightforward. Children do have *some* understanding of death, since for example the deaths of grandparents and pets (their own or others') have to be explained to them (Badham & Badham 1984:80). So, they can probably recognize a death event, even if they do not fear it. More importantly, their parents will have been training them from the outset to keep themselves safe, and this would involve training them to recognize and avoid mortally dangerous events. It is therefore very plausible that children would be very aware of the distress that their own deaths would cause their parents, and this deep need to please, or at least not distress, their parents, could, in the face of an impending physical crisis trigger an experience of continuity of consciousness, whereby they can (afterward) reassure their parent that they were not actually dead or dying. If this were the case, one would expect the experience to take the form it does for adults, which it does. This proposal is akin to what Braude calls the *multiple process* super-psi hypothesis sometimes posed in relation to mediumship evidence (2003:11). Given the present context, call this the *child* super-psi hypothesis.

There is an alternative version of this. Perhaps the child's super-psi is not in play, but the *parent* precognitively senses the imminent danger, their super-psi collects the veridical information about the future event, and their super-psi stimulates the child's hallucinatory experience of continuity of consciousness and veridical perception, so the child can reassure the parent (afterward) that they were not actually dead or dying. If *this* were the case, one would also expect the experience to take the form it does for adults, as it does. This proposal is akin to what Braude calls the *magic wand* super-psi hypothesis sometimes posed in relation to mediumship evidence (2003:11). Given the present context, call this the *adult* super-psi hypothesis.

If the adult super-psi hypothesis was on the right track, preverbal children should not have NDEs, since they would be unable to assuage their parents' fears until many months or even years later. If such cases existed, the adult super-psi hypothesis would be a non-starter, since the parents' needs are *not* served by the child's experience, since they cannot know of it (until much later).

If the child super-psi hypothesis was on the right track, children would not have NDEs until they are old enough to understand what a mortally dangerous event is, and to understand the deep concern their parents feel for their safety. If cases predating this developmental stage existed, the need or fear required to activate the child's super-psi would not be in place. These children would also be in the preverbal group, so once again the parents' needs will not be served by the child's experience.

Surprisingly, there *are* such cases, for example the following 15: (Atwater 1996:12–13, 2003:9–10,69,69 (bis),236–238, Fenwick & Fenwick 1995:183–184, Herzog & Herrin 1985, Ring & Valarino 1998:107–108,108–112, Serdahely & Walker 1990:177–183, Serdahely 1995:178,187, Sutherland 1995:82–83,136–141, Walker, Serdahely, & Bechtel 1991:194). All of these are preverbal cases (ruling out the adult super-psi option), and ten of them are from the first nine months of life (thus also ruling out the child super-psi option). Research supports the credibility of such cases, as follows.

Cases involving preverbal children appear to be consistent in features, depth, and complexity with the NDE reports of postverbal children and adults. Survey studies have shown that adult retrospective accounts of childhood NDEs and contemporary pediatric accounts of NDEs are indistinguishable (Serdahely 1991:223), conformant with a persistent finding that “unlike ordinary memories or dreams, NDE memories do not seem to be rearranged or altered over time” (Morse 1994:142). Furthermore, age seems to have no bearing on the complexity of NDEs, even for preverbal children (Fenwick & Fenwick 1995:182–183, Sutherland 2009:92,93). Phenomenologically, the NDEs of preverbal children are very similar to NDEs generally (Sutherland 2009:92–93). Some of the preverbal cases even have veridical elements, for instance in the case of Mark Bots, who spontaneously reported (at age 5 years) an NDE he had during a cardiac arrest at age 9 months. He reported seeing the doctors and nurses working on him, and seeing his grandmother wandering around the hospital corridors looking for his mother, as his family later confirmed did happen (Ring & Valarino 1998:112).<sup>8</sup>

Cases such as these strongly challenge the motivated psi hypothesis.

Three of the cases cited above were frightening experiences, and such cases further strengthen the challenge to the super-psi hypothesis. The case described by Peter and Elizabeth Fenwick involves a girl who remembers an

NDE after pulmonary arrest at birth. After a typical “material plane” OBE, she “somehow” found herself in a dark space where discarnate beings were trying to grab at her, before experiencing a tunnel leading to the light, and upon reaching the light her experience suddenly terminated. The fright of experiencing “other side” beings trying to grab at her left her with a lifelong fear of death, which she describes as “an awful affliction to have to bear” and a “burden that I carry around every day.” Clearly neither the child nor the parents had the motivation to induce a precognitive hallucination that would *increase* death anxiety for the child. This experience does not even serve the nominal purpose of reassuring that death is not the end of consciousness, since for the child this is now a terrifying prospect, and the parents could not get the report for several years to come.<sup>9</sup>

In these cases, the facts are incompatible with the super-psi hypothesis, as the motivation needed to engage or direct the super-psi is absent, and the outcome is sometimes contrary to what would be expected if super-psi had been involved.

### ***NDEs of Humanists and Atheists***

If NDEs are precognitive events, and serve to assuage fears of death by providing convincing reassurance that death is not the end of existence, we should expect that atheists would not have such experiences, or at least not typical ones. The relevant point here is of course not just that atheists reject the idea of God but some may reject the idea of an afterlife. Such persons might nevertheless still fear death because they have much they want to achieve in *this* life, but evidence of an afterlife would undermine their fundamental conviction that this life, and what they achieve in it, is important because there is no other life. So if they did have NDEs, the point of the experience would be to reassure them that their condition was not really as serious as it seemed at the time, hence their continuing consciousness during that time. Something like a veridical this-world OBE would achieve this. What the experience cannot include is content that undermines their basic assumption that there is no “other world,” no consciousness beyond irreversible death, and no lucid consciousness during severely compromised brain functioning. Experiences suggesting the existence of an after-world and discarnate beings would undermine the belief system they are most fundamentally invested in, and thus be contrary to their pre-NDE needs, and thus not plausibly due to super-psi.

Studies show that atheists *do* have NDEs, and are about as likely to have them as non-atheists and agnostics. Moreover, their NDEs have the same phenomenology that NDEs have in general (Holden, Long, & MacLurg 2009:118, Ring 1980b:4). Cultural or religious suppositions do affect how the experiences are interpreted, but there are clear similarities. For instance,

Buddhists might experience the “being of light” as Buddha, and Christians as Jesus, while atheists typically just encounter a light that is a living person (Badham & Badham 1984:86). Atheists’ pre-existing beliefs do not, therefore, prevent them from experiencing apparent encounters with after-world places and discarnate beings, including beings that are apparently divine. For such cases, it is hard to see how super-psi can be in play. Since such an experience actually *undermines* their fundamental beliefs and the worldview they want to promote, it is not serving their pre-NDE needs.

It is just about possible to imagine, however, that while atheists might not want or believe in an afterlife themselves, they will be aware of the distress their demise would cause people close to them, who might not be atheists. Just as children may have “experiences” that reassure their parents, so atheists might, in the face of a mortal threat, have “experiences” that would reassure *their* loved ones. However, this alternative is not merely far-fetched; it is completely hopeless in the case of feisty atheists who are particularly clear-minded about their non-expectation of an afterlife, as one might find among atheist philosophers. And we have at least one vivid example of such a case, the cardiac arrest NDE in 1988 of the well-known logical positivist A. J. Ayer. He was formerly the Grote Professor of the Philosophy of Mind and Logic at University College London (1946–1959), the Wykeham Professor of Logic at the University of Oxford (1959–1978), president of the Aristotelian Society (1951–1952), and president of the British Humanist Association (1965–1970). He was also a dedicated hedonist and serial seducer, travelled in the most glamorous social circles, and had many famous friends. He was, however, “remote,” it seemed, “from some of the more ordinary human emotions” (Rogers 1999), which would suggest that he was unlikely to have a hallucinatory experience contrary to his own beliefs just to please someone else.

In June of 1988 Ayer had a cardiac arrest while in the hospital recovering from pneumonia. Although he was 77 at the time, he was clearly in complete possession of all his faculties, even after his resuscitation (Cash 2001). He was connected to a heart-rate monitor at the time of his cardiac arrest, which lasted for four minutes. The attending physician Dr. Jeremy George later reported that on that same day, having finished his rounds, he returned to Ayer’s bedside: “I came back to talk to him. Very discreetly, I asked him, as a philosopher, what was it like to have had a near-death experience? He suddenly looked rather sheepish. Then he said, ‘I saw a Divine Being. I’m afraid I’m going to have to revise all my various books and opinions’” (Cash 2001). Three months later, when Ayer wrote an article about his experience for *The Sunday Telegraph*, he was apparently reverting to atheism again, concluding “My recent experiences have slightly weakened my conviction that my genuine death, which is due fairly soon, will be the end of me, though I continue to hope that it will be”

(1988a).<sup>10</sup> Two months later, his remission was apparently complete, and he wrote in an article for *The Spectator* that the most probable explanation for his experience was that his brain had continued to function even though his heart had stopped (1988b). He was not rejecting that he had experiences during that time, but promoting a particular interpretation of them, namely that he was simply hallucinating. This will not do, however. He could not have been having a synchronous hallucination, since having experiences at all during this time would be incompatible with his medical condition. It cannot have been precognitive super-psi either: If his subconscious needs were directing the experience, divine beings would not have featured in it, since their existence is contrary to his deeply held beliefs, and such an experience would subvert his life's work.

Publicly, he tried to trivialize his experience, but privately things had changed. His wife, Dee Wells, said: "Freddie became so much nicer after he died. He was not nearly so boastful. He took an interest in other people" (Cash 2001). The writer Edward St. Aubyn said Ayer told him that he had had a "kind of resurrection" and that he had recently started to notice scenery. In France, on a mountain near his villa, he said, "I suddenly stopped and looked out at the sea and thought, my God, how beautiful this is . . . for 26 years I had never really looked at it before" (Cash 2001). Near the end of his life, he spent more and more time with his former BBC debating opponent, the Jesuit priest and philosopher Frederick Copleston. According to Dee, "They got closer and closer and, in the end, he was Freddie's closest friend. It was quite extraordinary" (Cash 2001). This sort of transformation is not usually associated with cardiac arrest or hallucinatory episodes, but it is well-known in NDE cases. These include a more caring and compassionate attitude to others, a greater interest in spirituality, a sense of having been "reborn," and a greater appreciation of nature (Noyes, Fenwick, Holden, & Christian 2009). It is very likely that Ayer's intellectual pride motivated him to compromise his public account of his NDE (Cash 2001). What is not open to serious doubt is that (a) he did have a cardiac arrest, (b) he did have an NDE that suggested the continuity of his consciousness, and (c) he did not secretly desire any reassurances about his mortality on his own account or on behalf of others.

The precognitive super-psi hypothesis cannot account for his experience because the motivation needed to engage or direct the super-psi was absent, and the outcome was contrary to what would be expected if super-psi was involved.

This is consistent with what we find overall regarding the NDEs of atheists and agnostics. As noted above, their disposition before their NDE apparently does not impact the likelihood of them having an NDE or the likely content of it. On the whole atheists and agnostics respond in the same way to NDEs as others do, and come away openly convinced of survival and with a heightened

interest in spiritual matters (e.g., Ring 1984, Sutherland 1990; for a detailed case discussion, see the Wren-Lewis case in Bocking 2006). Given the facts of these cases, it cannot credibly be claimed that need-motivated super-psi is responsible for these experiences.

### ***Dualism versus Survival***

In cases such as these, involving very young children or committed atheists, the facts are incompatible with the super-psi hypothesis. Similar arguments could be developed in relation to other kinds of NDE cases, such as certain kinds of harrowing NDEs, young children who have “other world” experiences contrary to their parent’s religious perspectives, and cases where NDE-like experiences occur in non-crisis circumstances such as during meditation, yoga, shamanic drumming, or even while listening to music.

If the precognitive experience super-psi hypothesis does not apply in these cases, the implication is that NDEs occur contemporaneously with their physiological contexts. Absent precognitive super-psi, the NDEs that involve veridical OBEs associated with cardiac arrest periods then entail that persons must have a “part” that is not only capable of lucid consciousness while brain functions are severely compromised, but has competent perceptual capacities independently of the physical body. By implication, some kind of soul–body dualism is implied, in which the soul is the ultimate bearer of the person’s consciousness and rationality, and also has powerful psi abilities (for a broader discussion and analysis of this argument, see my paper, Rousseau 2011).

These are momentous claims, both ontologically and scientifically. However, substance dualism and consciousness during cardiac arrest are not enough to establish that consciousness can survive the irreversible death of the body. Until the issues are pointed out to them, most people (including most philosophers) assume that substance dualism entails survival, and that survival entails immortality. However, the situation is not so simple. It might be the case that the mind depends for its existence as a structured whole on the body existing as a structured whole, in which case it will not last much past the irreversible death of the body. Nature provides us with many examples of compound systems that have such dependencies, e.g., parasites and symbiotes. And just as there is a world of difference between consciousness surviving for minutes and surviving for years or centuries, there is a world of difference between something that is contingently enduring and something that is in principle everlasting. On these points, further evidence needs to be considered.

I did earlier present NDE evidence suggestive of souls surviving beyond the irreversible death of the body, in particular the so-called “Peak in Darien” cases, which occur both as NDEs and in other contexts. Some “Peak in Darien” NDEs are also cardiac arrest cases. Such cases might answer the empirical

question just posed, but first a new version of the super-psi hypothesis has to be overcome. The soul-body dualism just inferred entailed that the soul has powerful psychic abilities during the NDE OBE.<sup>11</sup> This opens the door to a new kind of super-psi hypothesis, as follows.

The super-psi theorist might concede dualism at this point, but not yet give up their neutrality regarding survival, and thus still reject the existence of discarnate interactionism. It is now conceded that during the OBE people really are conscious, and their psi faculties are operating powerfully, so they can observe local and remote events, read minds, and so on. The argument would now go that the actual NDE serves as a powerful reminder of the NDEr's mortality, even in the non-cardiac cases, since most NDEs are triggered by some kind of physiological trauma or threat. This fear of dying then powerfully engages their psi to gather veridical information from this-world sources including the memories of other living persons, and based on this it stimulates a hallucinatory experience that is incorporated into their NDE. The hallucination itself provides them with a reassuring "encounter" in the form of a meeting with deceased spirits, and sometimes it even includes information new to them which they can afterward verify by normal means, thus reinforcing the conviction that these were "encounters" with enduring spirits. However, once again it is all just a psychological coping mechanism to assuage their fear of actual death.

This dualistic super-psi hypothesis works very like the precognitive super-psi hypothesis: Deep fears motivate the focussing of psi faculties to produce experiences that assuage the fear. It is different from the precognitive super-psi hypothesis in that the sufficient fear and the veridical hallucination are postulated to occur simultaneously with their physiological contexts.

### ***NDEs and the Dualistic Super-Psi Hypothesis***

It is interesting to look at NDE cases from the point of view of looking for evidence that something like what the dualistic super-psi hypothesis asserts is going on.

It is notable that most NDErs find the OBE realistic and vivid, in the same way that waking consciousness is. For some it even seems more real and more vivid than waking consciousness (Kelly et al., 2007:386, note 16). People reflexively interpret this experience of being lucid while apparently separate from their bodies as meaning that their bodily death will not be the end of their consciousness. It is very clear from their reports, and survey studies bear this out. In Sutherland's study of 51 NDErs, she found that 84% had some fear of death before their NDE, but this dropped to 2% afterward (1992). Margot Grey found a drop from 63% to 0% (1985), and Anja Opdebeeck found a drop from 45% to 0% (2001). At the same time, belief in an afterlife increased from 38% to 100% in Sutherland's study, 25% to 96% in Opdebeeck's, and 22% to

92% in Cassandra Musgrave's study of 50 NDErs (1997). Compared to these widespread changes, only 20% of NDErs experience encounters with spirits, of which perhaps half are long-dead. Clearly the driver for these changes in conviction is not the experiences of spirit-encounters, but rather the experience of personal consciousness dissociated from the body.

This is not really a surprise, because although the idea that dualism entails survival, and that survival entails immortality, is unwarranted, it is incredibly widespread. I have never come across anyone unfamiliar with the academic literature on survival, who did not make this automatic connection between dualism, survival, and immortality. And many people who *are* familiar with the literature seem to make the same connections anyway, or at least speak as if such views do not stand in need of a defense. The statistics quoted above suggest that the number of NDErs to whom it occurs that their experience does not entail long-term survival is very low, if not actually zero.

In this light, the dualistic super-psi hypothesis is shown up to rest on a philosophical esotericism—average people do not have this concern during their NDE OBE. Whatever their death-anxieties might have been *before* their NDE, once their OBE starts the motivation to focus their psi on constructing a reassuring hallucinatory encounter with spirits of the deceased is simply not there, because by then, as far they are concerned, they have already discovered that death is not the end.

From this it is clear that the dualistic super-psi hypothesis is a non-starter. By implication, the experienced encounters with what presents as deceased spirits cannot be dismissed as psychic fabrications, but can instead be regarded as experiences that are as objective as the out-of-body perception of the physical environment. Some of these encounters involve what appears to be the spirits of the *long* dead, so from these NDE cases we can infer that there is some manner in which personal consciousness can indeed survive the irreversible death of the body for a significant period (many decades at least), and that, whatever the true nature of this continuant, it has the causal means needed to interact with living persons.

### ***The Problem of Recalcitrant Evidence***

Every scientific theory encounters “recalcitrant evidence” from time to time, and it is rarely a reason to reject the theory. It might reasonably be retained anyway because it may have something going for it in terms of other theoretical virtues, or there may be some hope of modifying its auxiliary hypotheses in such a way that it would bring the problematic data back into its explanatory scope, or there may simply be no known viable alternatives. It is on such considerations that Ptolemy's planetary model, Galen's heart model, and Newton's theory of

universal gravitation were all retained, despite challenging evidence, until more competent alternatives were available.

The present situation is, however, hardly comparable.

First, in the present instance we do not merely have evidence that the super-psi hypothesis cannot explain: In addition, its premises are contraindicated, for the motivations it relies on are demonstrably absent, and there are outcomes that are actually *contrary* to the super-psi hypothesis's expectations. So in relation to NDE evidence the super-psi hypothesis is not only baffled, it is also undermined and falsified.

Second, the super-psi hypothesis does *not* overall have clear advantages in terms of other theoretical virtues, as was shown above.

Third, it was all along an ad hoc theory (just like the survival hypothesis), so hopes to adjust the super-psi hypothesis's premises and auxiliaries to make it viable again would amount to a scientifically suspect intention to "fix" the theory's explanatory power by adding ad hocery to ad hocery. Ad hocness is a theoretical weakness, so such actions are likely to just offset the gain in explanatory virtue.

Last, it is not as if there are no useful alternatives, since the survival hypothesis *does* accommodate all the evidence and in other ways it is not on balance inferior to the super-psi hypothesis. Some have argued that ontological parsimony should have a high weighting, and that on this basis the super-psi hypothesis would then still have merit, since it is the less ontologically extravagant. This is a moot point, but I will in any case show below that on this criterion the advantage of the super-psi hypothesis has been overstated, which carries the implication that weighting this virtue will not help the super-psi hypothesis.

On these considerations the super-psi hypothesis can fairly be considered to have been eliminated as a potential explanation for NDE phenomena.

### ***NDEs and the Case for Survival***

Having dismissed the challenge of the super-psi hypothesis in relation to NDEs, we are warranted to infer from NDE evidence support for dualism, survival, and discarnate interactionism. NDE evidence can now be analyzed for clues about the nature of the soul and its postmortem condition and capacities. However, NDE evidence is only one kind of survival-suggestive evidence among several, and it may be suspected that the super-psi hypothesis can still stand against the other sorts of survival-suggestive evidence, placing this other evidence out of bounds as further source material for the just-mentioned model development. Given the potential value of this other evidence in this regard it is important to consider how the theoretical virtue tradeoff has shifted in the light of the super-psi hypothesis's failure in the NDE arena.

### **A Revised Virtue Tradeoff between the Super-Psi Hypothesis and the Survival Hypothesis**

I will here consider the theoretical virtues in the same order as before, but discuss some of them at longer length.

#### ***Empirical Adequacy***

The kinds of NDE cases discussed above, and arguably NDEs as a class, cannot plausibly be explained by the super-psi hypothesis (even in a weakened form that accepts dualism). This breaks the draw previously declared in empirical adequacy. However, it is true that in general scientific theories do not explain all the data in their domain of application (Braude 2003:18–19), so it is not immediately obvious that this is a serious problem for the super-psi hypothesis with regard to other kinds of survival-suggestive evidence. For *that* to be the case, the super-psi hypothesis also has to fare worse in a wide range of other virtue criteria. But this does not diminish the point that in the present virtue category the survival hypothesis has an advantage over the super-psi hypothesis, so that overall there is no longer a draw.

#### ***Ontological Conservatism***

It was said earlier that the survival hypothesis is at a disadvantage here, because it assumes the existence of discarnate souls with psi powers, which are entities we do not have independent evidence for outside the survival-suggestive evidence. In principle, there cannot be such evidence in a direct way, since any evidence produced would immediately be classified as survival evidence and therefore would not be “independent evidence.” However, it may be possible to argue for the likelihood that such entities exist, on the basis of independent evidence for each of the components of the claim that discarnate psi-capable souls exist. This can be done for example by presenting evidence that living persons have souls, that the souls of living persons have psi powers, and that souls do not depend on their bodies in an essential way. Each of these steps would reduce the apparent extravagance of the survival hypothesis’s ontological claims, and if all three claims can be sustained then the survival hypothesis’s position would be a reasonable one.

Such evidence can be obtained from NDEs and other sources. NDEs are rich phenomena that involve much more than just putative encounters with discarnate souls—in fact spirit encounters occur in only 20% of NDEs. Without taking the events involving spirit encounters into account, it can be argued that on the failure of the super-psi hypothesis in the case of cardiac arrest OBEs, these incidents are best interpreted as evidence for the existence of souls: The

person's persistent lucid mental functioning in the face of deeply compromised brain functions show that minds are distinct from brains, and the person's psychic observations during the arrest period shows that what is continuing to function constitutes much more than just a mind. This is therefore evidence not only for the existence of souls but of souls with psychic powers. There is even some evidence of NDE OBEs interacting with people in normal states of consciousness (e.g., Greyson & Bush 1992:223), and of course souls can interact with their physical bodies under normal circumstances, so overall the evidence suggests that the souls of living people have, at least in principle, the sorts of interactionist powers that are ascribed to spirits under the survival hypothesis.

The evidence for the existence of souls is bolstered by other evidence, from outside the context of NDEs, for competent mental functioning in the face of severely compromised cerebral conditions. These include cases of so-called "terminal lucidity," where mental faculties are recovered before death despite severe brain disorders such as Alzheimer's and schizophrenia (about 50 published cases, see Nahm & Greyson 2009, Nahm, Greyson, Kelly, & Haraldsson 2011, Nahm 2009), cases of normal (or even above normal) mental functioning despite severe brain developmental disorders such as hydranencephaly (about 80 cases referenced and 20 described, see for example, Baudoin 1996, Berker, Goldstein, Lorber, Priestley, & Smith 1992, BUVFC 1982, Duyff, Davies, & Vos 1996, Feuillet, Dufour, & Pelletier 2007, Lewin 1980, Lorber 1965, 1978, 1983), and cases of serious brain degeneration without significant concomitant cognitive deficits (one case published but many more apparently known, see Archer, Schott, Barnes, Fox, Holton, et al., 2005, Melton 2005).

The way in which this evidence for the existence of souls arises is interesting in relation to the question of whether souls can survive the death of the body. In the NDE cases we have not only mental functioning distinct from brain functioning, but lucid mental functioning concomitant with deeply compromised brain functioning. In fact, 80% of NDEs reported that during their NDE their thinking was at least as clear as usual (45% "clearer than usual"), 74% reported that the speed of their thinking was unimpaired (37% "faster than usual"), 65% reported their logic was unimpaired (29% "more logical than usual"), and 55% reported no decline in the control over their thoughts (19% "more control than usual") (Kelly et al., 2007:386, note 16). This is the opposite of what we would expect if the mind depended on the brain in an essential way—it looks more as if the brain inhibits or constrains the mind in some way, rather than supporting it. Psychic powers are also greatly enhanced during the NDE OBE, suggesting that psychic powers are likewise inhibited rather than facilitated by normal embodiment. The inverse relationship between psychic ability and arousal of the nervous system has of course often been noted outside the context of NDEs (Kelly 2007:603–607, Myers 1891:638). If the soul is the

seat of the person's mental and psychic faculties, and these work better when the functioning of the body is inhibited, then this can be taken as evidence suggesting that the connection between the soul and the body is a contingent one, and not an essential one.

We can therefore argue, without bringing putative spirit encounters into account, that there is evidence for the existence of souls, for souls having psi powers, and for souls not being essentially dependent on bodies. In this light the claim that the survival hypothesis's ontology is extravagant cannot be sustained, and the tradeoff against the super-psi hypothesis is reduced to a draw (or something near enough).

### ***Explanatory Simplicity***

As before, the survival hypothesis provides simpler explanations, so the survival hypothesis still has the advantage.

### ***Causal Interference***

As discussed earlier, the survival hypothesis appears to have the advantage here. No change.

### ***Antecedent Probability***

It was previously argued that both hypotheses are equally probable, since there are multiple lines of evidence for survival, but also ample evidence for powerful living-agent psi. However, since we now have grounds to reject the super-psi hypothesis for NDE cases, the antecedent probability that discarnate interactionism is behind the other kinds of survival-suggestive evidence is increased. It would certainly seem arbitrary to claim for example that NDE-based "Peak in Darien" cases are due to discarnate souls but other "Peak in Darien" cases occurring in for example deathbed visions or dreams are equally likely due to super-psi. In terms of antecedent probability, the survival hypothesis now has the advantage.

### ***Plausibility***

As stated before, the strength of psi required by each hypothesis is the same, so on those grounds they are equally plausible. However, this argument glosses important evidential considerations from NDEs and other kinds of psychical research cases. I have recently argued that the NDE evidence suggests that although people in principle have powerful psychic abilities (because souls have them), embodiment and physiological arousal typically inhibits the expression of these powers (Rousseau 2011). A similar point was in fact previously argued by

other researchers from Myers onward, who pointed out an inverse relationship between the strength of psychical experiences and the level of activation of the nervous system (Kelly 2007:603–607, Myers 1891:638). The implication of these observations is that absent significant physiological calming or severe mind–body dissociation, living-agent psi is unlikely to be available for use in a very powerful way. In those cases where survival evidence is obtained without deep trance or severe dissociation (e.g., hauntings, apparitions, children who remember previous lives, organ memory cases, and certain poltergeist cases), the inherent plausibility of the super-psi hypothesis is therefore diminished. Since the survival hypothesis covers all the case contexts, but the super-psi hypothesis is less plausible in some contexts, the previously assessed draw regarding this virtue is replaced by an advantage to the survival hypothesis.

### ***Actuality***

It was previously argued that although both hypotheses are plausible, evidence has not been presented to show that either mechanism is actually in play in the survival-suggestive evidence. However, since discarnate interactionism has now been shown to be the most likely explanation for “Peak in Darien” NDE cases, we have good grounds for asserting that something like this is also going on in other kinds of survival-suggestive evidence. The previously scored draw is converted to an advantage in favor of the survival hypothesis.

### ***Minimal ad Hocness***

Both hypotheses were previously ad hoc, so this was a draw. Ad hoc theories are sterile, having no explanatory or predictive power beyond the data they were invoked to explain. However, the failure of the super-psi hypothesis in the case of NDEs means that the NDE evidence can now be analyzed in order to develop a rich model about the nature of souls. If such a model had consequences beyond the survival-suggestive evidence, it would defuse the charge of ad hocness against the survival hypothesis. I have been developing such a model, and a part of it was recently published (Rousseau 2011). The published parts of this model *do* have consequences beyond the survival-suggestive evidence, for example it explains why psi is normally weak but can sometimes function powerfully, and why NDErs so often are more psychic after their NDE than before it. It shows how psychic phenomena are related to mystical ones. The model potentially has relevance for understanding certain aspects of dyspraxia, conversion disorders, psychopathy, and autism. It enables new kinds of claims to be made, such as that PK is an emergent capacity of the soul–body system, while other psychic abilities are inherent capacities of the soul as such. The model makes some novel predictions, such as that the soul is a naturalistic substance and not a

supernatural one, and that certain kinds of soul–body dissociation carry certain health risks. On these grounds, the failure of the super-psi hypothesis in the NDE arena can be regarded as having liberated the survival hypothesis from being an ad hoc theory to a scientific one, since its dualistic assumptions are no longer ad hoc but grounds for a scientific model supported by evidence. Overall, the advantage has shifted in favor of the survival hypothesis.

### ***Falsifiability***

I have argued that the super-psi hypothesis is falsifiable in relation to specific kinds of cases, and have presented NDE cases that do this. This suggests that in principle it is possible to find counterexamples in the other kinds of survival-suggestive evidence, too. This improves the super-psi hypothesis's score on this virtue. I have also indicated in the discussion of the previous virtue that the failure of the super-psi hypothesis in the case of NDEs has led to a dualistic model that has explanatory and predictive value beyond NDEs, and makes claims about the inherent abilities and limitations of souls. In consequence, there is now scope to develop a survival model with testable predictions, so in principle the survival hypothesis's falsifiability has also improved. Therefore, there is still a draw in this virtue (but it is now one–all rather than zero–all).

### ***A New Virtue Scorecard***

Without applying weightings to the virtues, a new scorecard based on these revisions would appear as in Table 2.

Table 2 shows not only that the impasse has been broken, but that the survival hypothesis has been considerably strengthened as well: On a percentage basis the score ratio is now something like 8%:36%. It is clear from Table 2 that the balance is now in favor of the survival hypothesis in most virtue categories (seven out of nine), and that the super-psi hypothesis arguably no longer has a distinct advantage in any category. If weightings were to be applied, the survival hypothesis would score even higher. The virtues of empirical adequacy, ontological conservatism, and limited ad hocness arguably weigh much more than the others, and one of these is a draw while the other two favor the survival hypothesis. If the work that I have published elsewhere were taken into account as far as the unconsidered criteria are concerned, the survival hypothesis's score would be even higher (e.g., in terms of predictive power, integration with other areas of knowledge, and practical utility). Now that dualism, survival, and discarnate interactionism have become accessible to scientific modelling, the prospects are there for the survival hypothesis to be developed on the basis of NDE and other evidence, and thus for the survival hypothesis's score to rise even higher.

**TABLE 2**  
**A Revised Scoring of the Theoretical Virtues**

Theoretical Virtue	Score (Original)		Score (Revised)	
	Super-Psi Hypothesis	Survival Hypothesis	Super-Psi Hypothesis	Survival Hypothesis
1 Empirical adequacy	1	1	0	1
2 Ontological conservatism	1	0	1	1
3 Explanatory simplicity	0	1	0	1
4 Causal interference	0	1	0	1
5 Antecedent probability	1	1	0	1
6 Plausibility	1	1	0	1
7 Actuality	0	0	0	1
8 Minimal ad hocness	0	0	0	1
9 Falsifiability	0	0	1	1
10–25 Unconsidered criteria	0	0	0	?
<b>Total score</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>9</b>
<i>Possible score</i>	25	25	25	25

**Conclusion**

I have argued above that NDE evidence escapes the challenge presented by the super-psi hypothesis, and that this allows an inference to be made in favor of dualism, survival, and discarnate interactionism. I have also argued that the failure of the super-psi hypothesis in this arena shifts the balance between the theoretical virtues of the rival hypotheses strongly in favor of the survival hypothesis. The implication is that when considering other kinds of survival evidence where the survival and super-psi hypotheses equally well explain the data, it is warranted to rule in favor of the survival hypothesis on the basis of these other theoretical virtues. In consequence, the non-NDE survival-suggestive evidence is broadly available to be analyzed for clues about the nature of souls, the mind–body relationship, and survival, and new research projects may reasonably be defined with a hope of finding answers (or better answers) to these important questions.

### Notes

- <sup>1</sup> In the mainstream debate there is much controversy over how the relationship between mental phenomena and brain states should be understood, and this is still very much an open issue. However, the working assumption is that the relationship is an essential one, so that in consequence the survival of consciousness is ruled out a priori. This assumption is, however, challenged by a growing body of evidence from psychical research and NDE studies.
- <sup>2</sup> On the whole, advocates of the survival hypothesis radically underestimate what a huge step in metaphysical commitments, compared to mainstream views, this conclusion represents.
- <sup>3</sup> The term “discarnate interactionism” was coined by Michael Sudduth (2009:170).
- <sup>4</sup> The cardiologist Fred Schoonmaker claimed to have 55 such cases from his own research (Audette 1979), but these cases have not yet been published.
- <sup>5</sup> For example, in one case the patient had an out-of-hospital acute massive heart attack, and was brought in unconscious and cyanotic. An attending (male) nurse removed the patient’s dentures before attaching the ventilation mask. After he recovered, he asked for his dentures but no one knew what had become of them. The patient reported that he had observed what happened from his OBE state. He recognized the nurse in question and said that he had placed the dentures on a shelf on the crash cart, where they were then found (van Lommel, van Wees, Meyers, & Elfferich 2001, Smit 2008). In another case, the patient had an OBE in which she drifted outside the hospital room and saw a Christmas tree on the balcony below the window of her room. This was in February (Cook, Greyson, & Stevenson 1998:389).
- <sup>6</sup> Peter and Elizabeth Fenwick make essentially the same point in relation to a comparison they made between the phenomenology of NDE-OBEs and “spontaneous” OBEs, saying “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” (1995:37).
- <sup>7</sup> They are called “Peak in Darien” cases after the name of an 1882 book by Frances Power Cobbe which contained such a report.
- <sup>8</sup> These cases appear to be continuous with a much larger dataset concerning the memories and cognitive capacities of prenatal and perinatal children. For more on perinatal memory cases, see Chamberlain (1983, 1988). See Ring & Valarino (1998) for an independent consideration of such evidence and a positive conclusion (pp. 114–117). See also the *Journal of Prenatal & Perinatal Psychology and Health* (now in its 20th volume).
- <sup>9</sup> For postverbal children, for whom we have a much bigger dataset, frightening NDEs occur in about 3% of cases (Atwater 2003). The motivational psi hypothesis fails here, too.
- <sup>10</sup> Ayer’s irreversible death occurred nine months later.
- <sup>11</sup> I have recently argued (Rousseau 2011) that it appears that a person’s psychic ability is enhanced during cardiac arrest because during that time the integration between the soul and the body is disrupted, and that this makes available psi capacity that is normally engaged in soul–body integration.

## Acknowledgments

I would like to thank Julie Rousseau, Zofia Weaver, Stephen Braude, Michael Sudduth, and two anonymous reviewers for their very helpful comments on this paper, which greatly improved the end result, and to absolve them of any responsibility for weaknesses in the final product. I am grateful to the Society for Psychical Research for their financial support and encouragement with this research.

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