ONE FOOT ON THE OTHER SIDE: CHANGED ORIENTATIONS TO DEATH AFTER A NEAR-DEATH EXPERIENCE

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Abstract

One of the most frequently reported changes after a near-death experience (NDE) is a dramatically reduced or eliminated fear of death. Although a relatively large body of literature has attested to the presence of this aftereffect, the exact nature of this transformation, and why NDEs trigger such changes, has remained speculative. The purpose of this mixed-methods study was to comprehensively explore attitudes and beliefs about death following an NDE, with the aim of expanding existing knowledge in this area. Fifty-nine near-death experiencers (NDErs), 46 people who had experienced a life-threatening event but with no NDE, and 69 participants who had never come close to death, completed an online survey measuring attitudes and beliefs about their own personal death. Seventeen NDErs also took part in a series of semi-structured interviews to better determine how and why attitudes to death change after an NDE. Findings demonstrated NDErs have a significantly more positive orientation to death than others, particularly with respect to transpersonal fears, or what happens following the body's physical demise. Attributions for change included reduced fear of pain and suffering at death, feeling that life (and death) has a purpose, relinquishing control over life, acceptance of death as a reality and increased belief in the continuation of consciousness. NDErs were significantly more likely than others to believe in some form of post-mortem continuation. Overall, results demonstrated the unique, subjective content of the NDE was integral to any changes, and that NDEs appear to affect beliefs and attitudes to death in a relatively specific and consistent manner. These findings are discussed in terms of their potential for death education and the treatment of death anxiety, particularly for those imminently facing their own death.

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Table of Contents

List of Tables

Table of Figures

Introduction

To practise death, is to practise freedom.
A man who has learned how to die, has unlearned how to be a slave. — Montaigne, 1580

Throughout history, death has been a perennial source of contemplation and fascination. As human beings, our capacity for reason and logic sets us apart from other animals. However, this ability is accompanied by the realisation that our existence is finite. At some undefinable point in the future our physical body will cease to exist. While the thought of our own death can provoke a variety of emotional responses, it is often a source of anxiety or fear. This anxiety is often thought to be of such enormous proportions that a considerable amount of human behaviour is devoted to managing or eliminating this fear (e.g., Becker, 1973; Orbach, 2008; Solomon, Greenberg, & Pyszczynski, 1991).

Western[1] civilization is often described as a death denying society that seeks to hide, minimise and suppress any reference to death, for fear it will remind citizens of their own unavoidable mortality (e.g., Kübler-Ross, 1969; Wood & Williamson, 2003). This denial of death is evidenced by a variety of social norms, such as not speaking or even thinking about death (Braun, Gordon, & Uziely, 2010), the expectation that one grieves quickly and quietly over the death of a loved one (Harris, 2010), and social isolation of terminally ill and palliative care patients (Kübler-Ross, 1969). A private and hidden affair, death has become increasingly sanitised and removed from the everyday. Where once individuals died at home surrounded by

[1] Western society is a common referent to the affluent and industrialised societies of Western Europe and their genealogical, colonial, and philosophical descendants, such as the United States, Canada, Australia and New Zealand.

loved ones, around 80% will now die in a hospital or palliative care facility, often alone (Dunlop, Davies & Hockley, 1989; Gomes & Higginson, 2008).

This approach to mortality is perhaps largely due to the Western conceptualisation of death as the absolute end. Bertrand Russell (1957) once said "when I die, I shall rot, and nothing of my ego will survive" (p.34). This assumption is, for the most part, reflected amongst the medical and scientific community (Tassell-Matamua, 2013). Grounded in the predominant worldview of materialist reductionism, death is primarily understood as a purely physiological event - a cessation of all vital bodily function that leads to our ultimate demise in every sense (Carpentier & Van Brussel, 2012). Death is treated like an enemy to be conquered, with the prolongation of life considered paramount, even when quality of life is compromised (Gawande, 2014). Yet, even though people now live longer than ever before, there exists a climate of fear and uncertainty regarding death. Many people are afraid of a painful death, and uncertain of what may come afterwards (Gire, 2014; Kübler-Ross, 1969). Death has become unfamiliar, an unknown, a distant event that happens to somebody else. In a world that prepares the individual only for life, it is little wonder the thought of death is anxiety provoking for many.

Although often considered an insurmountable task (Yalom, 2008), some claim to have transcended the fear of their own demise. Throughout history, many people have recounted an extraordinary conscious experience occurring on the threshold of death or during a state of cardiac arrest. Featuring characteristics such as extreme positive mood, an impression of being outside the physical body, experience of a bright light, and encounters with nonmaterial beings, this anomalous subjective episode is known by the contemporary label, "near-death experience" (NDE). Forty years of scholarly research into NDEs have demonstrated these events can have a transformative quality, dramatically altering the experient's values, beliefs and behaviour. While the effects of NDEs are both numerous and diverse, perhaps the most intriguing of these changes is an eliminated or greatly reduced fear of death (Flynn, 1982; Greyson, 1992; Noyes, 1980; Ring, 1984; Sutherland, 1990).

This powerful subjective episode instigates a level of change yet to be replicated within clinical or research settings. Various psycho-therapeutic interventions designed to ameliorate the fear of death have met with very little or no success (Lonetto & Templer, 1986). Death education, workshops and other coping strategies such as systematic desensitisation and

relaxation training, have not proven effective in lowering death anxiety (Kirby & Templar, 1975; Rigdon & Epting, 1985), with some studies having the paradoxical effect of increasing death anxiety as much as three-fold (Durlak, 1978-1979; Heide & Borkovec, 1983; Rainey & Epting, 1977; Wittmaier, 1979-80). Such studies highlight how impervious fear of death is to change, and provide insight into the transformative power of NDEs. This is especially noteworthy when considering it is an episode lasting just a few minutes, or even seconds (Tassell-Matamua & Lindsay, 2016).

NDEs are considered by some our best (and only) source of knowledge about the psychological process of death and dying – a close approximation to the actual event (Noyes, 1981; Parnia, Waller, Yeates & Fenwick, 2001; Satori, 2014; Tassell-Matamua, 2013). While it is impossible to know whether these experiences represent actual irreversible death, their capacity to permanently alter a person's attitudes and beliefs about death is worthy of investigation, especially given the paucity of effective psychotherapeutic techniques for managing fear of death. At the very least it may help identify useful coping strategies, and at the most, provide a valuable insight into the subjective experience of death itself.

Fully embracing our own mortality rather than avoiding it, is linked to a host of positive psychological outcomes. Research shows that acceptance of one's own death is positively correlated to measures of health, happiness, wellbeing, and life satisfaction (Cozzolino, Blackie, & Meyers, 2014; Flint, Gayton, & Ozman, 1983; Gesser, Wong, & Reker, 1987-1988; Noyes, 1980; Wong & Watt, 1991). Importantly, the meanings associated with death are inextricably interwoven with the meanings associated with life. By avoiding or denying the reality of death, we are inadvertently avoiding life. As Wong (2012) explains, "We cannot even begin to understand the meaning of life, until we stare at death unflinchingly … In a strange way, life is defined by its fragility and finiteness, and death holds the key to authentic living" (para. 4).

Research aims

The aim of this research was to investigate how and why a person's relationship with death is altered following an NDE. Despite the consistent finding that near-death experiencers (NDErs) display a reduced or eliminated fear of death, knowledge in this area remains limited. Most studies have adopted a unidimensional approach, with conclusions often based on a single question such as "has your fear of death increased/decreased"? Thanatologists agree the fear of

death cannot be adequately measured using such a simplistic approach, for two main reasons: 1) Humans tend to unconsciously suppress most of their thoughts and concerns regarding death, meaning superficial attempts are unlikely to uncover the actual extent of fear held by an individual (Mikulincer, 2008; Moore & Neimeyer, 1991), and 2) Although initially regarded as a unitary construct, research into death attitudes indicates the fear of death is multidimensional, the objects of fear varying considerably from person to person (e.g., Neimeyer, 1994; Wong, 2007). While some may fear the unknown, others may fear the decay of their body, for example. It is not very useful or informative to examine the fear of death without detailing the aspects measured. Presently, *what* exactly NDErs have lost their fear of remains unknown.

The other notable gap in the literature is an understanding of *why*. Given the fear of death is a very real concern for many, especially palliative and terminally ill patients (Ferrell & Coyle, 2002; Krause, Rydall, Hales, Rodin, & Lo, 2015; Yaakobi, 2018), understanding those who routinely demonstrate more adaptive attitudes to death is potentially of great value. Yet, despite the occasional theoretical proposition, to the author's knowledge no studies have been conducted to determine why or precisely how this change manifests.

It is often assumed any change in attitude is connected to a newfound or strengthened belief in the afterlife (e.g., Grey, 1985; Greyson & Stevenson, 1980; Flynn, 1986; Ring, 1980; Sutherland, 1990). Although research has identified increased belief in post-mortem continuation after an NDE, the relationship between the two constructs is unclear. Furthermore, in a similar vein to death attitudes, NDE studies have typically adopted a unidimensional approach that has not advanced beyond the simple affirmation or denial of an afterlife. No studies have addressed the thematic form, or structure of these beliefs in a detailed manner. This research therefore investigates NDErs post-mortem beliefs, determines whether any patterns exist, and examines if and how they relate to the individual's attitude to death.

To ensure the NDErs' attitudes and beliefs about death were comprehensively explored, data was collected using a mixed methodology approach. Although a mixed method approach is not always easy to implement, primarily because quantitative and qualitative approaches represent different ways of thinking (Tomer, Eliason, & Wong, 2008), in this instance it provided more insight than either approach would have individually. The quantitative aspect provided valuable information about the specific types of attitudes and beliefs NDErs held about death, how and whether they differed as a group from others. The qualitative component

complemented and enhanced these findings by providing further insight into the constructs under study. Importantly, it captured the unique, lived experiences of participants, and uncovered additional information not previously known, or predicted by the quantitative component. Because the consumers of this research are likely to be diverse (academics, healthcare professionals, as well as members of the public who have experienced NDEs), it was considered important the voices of NDErs were represented. NDEs are unique subjective episodes that often challenge mainstream scientific understandings of reality. Consequently, many NDErs are often reluctant to speak of their experience and may remain unaware of the commonalities they share with others. Hearing the views of other NDErs is likely to validate their own experience, providing a measure of reassurance and support.

Structure of thesis

To place the following research in context, chapter one will begin by reviewing current literature relating to the psychology of death; specifically, how people typically understand and react to the thought of their own personal death. Although meanings and responses can vary from culture to culture, this review will primarily (but not exclusively) focus on Western research and theoretical perspectives, as most studies have been conducted amongst this population. The current study also represents a Western perspective on death and NDEs.

Chapter two familiarises the reader with the NDE. It discusses how NDEs are defined and measured, the phenomenology of the experience, incidence rates, and other factors such as socio-demographic variability. The chapter concludes with a discussion on the proposed causal mechanisms of NDEs.

Chapter three addresses the psychosocial aftereffects that often follow NDEs. Although the literature has emphasised the positive, beneficial outcomes of NDEs, this chapter also discusses the negative consequences of such experiences.

Chapter four is dedicated to the most frequently reported aftereffect, and the central focus of this study - **the loss of fear of death**. The chapter will review empirical research in this area, and examine several theoretical propositions put forward by way of explanation. The chapter will also consider the shortcomings of previous research, highlighting areas where information is limited, speculative or of methodological concern.

Based on the limitations identified in chapter four, chapter five outlines the research questions addressed during this research: namely what, how, and why attitudes to death change after an NDE. Given the exploratory nature of the study, no hypotheses were presented a priori. This chapter also discusses the overall research paradigm employed to address these questions.

Chapters six and seven describe the quantitative aspect of this research. This component was comprised of an online questionnaire designed to measure the participants' thoughts and beliefs about death. Chapter six covers the procedures and materials used, why they were selected for this study, and how NDErs were identified and recruited. Chapter seven discusses the results of this survey.

To further elucidate how and why attitudes may change after an NDE, semi-structured interviews were conducted with a sample of 17 NDErs. Chapters eight and nine describe the methodology and results of this qualitative component, respectively. All findings are accompanied by verbatim quotes extracted from the data set to illustrate themes and provide insight from a first-person perspective.

Chapter ten integrates both research phases and discusses them in relation to existing research in the field of NDE studies and death-related research in general. The implications of these findings for greater society are considered, including ways in which this knowledge could potentially be utilised within the field of psychology. Limitations of the current study are acknowledged and ideas for further research are presented. The thesis will conclude with a summary of the findings in relation to the research aims.

Chapter 1.

Death

The thesis begins by examining how death is currently understood and responded to within the context of wider society. In this chapter, three general areas are explored. The first section examines how death is currently defined and understood in terms of the physical event, and the state that follows. The second section addresses attitudes to death, namely the three core concepts of fear, denial and acceptance. In line with current trends in the thanatological literature, the concluding sections discuss how individuals can increase their acceptance of death.

1.1 What is Death?

Death is not perceived in the same way by everybody. Understandings of death are based on words, concepts and ways of thinking available in a particular society at a particular time (Kastenbaum, 2007). While viewed as a singular event in some cultures, in others death is considered indistinguishable from other altered states of consciousness (Bailey, 2001; Counts & Counts, 1985; Lepowsky, 1985). For example, some South Pacific societies construe death as occurring whenever the 'soul' leaves the body – an event that takes place regularly when the person is ill or asleep. The individual is thought to have 'many dyings' before the final departure (Counts & Counts, 1985; Lepowsky, 1985). From this perspective, a person can be considered dead without meeting any of the criteria defined by Western standards (Gire, 2014).

In determining the difference between "alive" and "dead", Western society relies exclusively on a biomedical approach. Death traditionally happens when the common signs of irreversible physical impairment are observed– namely, the cessation of heartbeat, pulse, and respiration, as well as the loss of brain stem activity as indicated by fixed pupil dilation (van Lommel, 2011). Yet, even within this biomedical model, agreeing on a standard definition for death is difficult. Medical advances have made it possible to maintain a body in a persistent vegetative state exhibiting physiological signs of life, such as respiration and heartbeat, for an

indefinite time. In this state the person appears neither dead nor alive, and is often a source of philosophical and ethical debate as society seeks to determine exactly what death is, and when it took (or should take) place (Gire, 2014). Although the concept of brain death - "a condition in which irreversible known damage has permanently destroyed all functional brain activity, including the loss of the brainstem's capacity to enable spontaneous breathing" (Kastenbaum, 2007, p.43) - has provided a useful guideline for decision making, defining "death" remains a complex, controversial and ever shifting concept (Youngner, 1992).

1.2 The State of Death

Notwithstanding the difficulties mentioned above, when, where, and how a person died are generally easy to determine and agree upon. Understanding what kind of state follows death is considerably more challenging, and subject to many competing interpretations, including enfeebled life, extinction, continuation of life, recycled existence, waiting, and perpetual development (Kastenbaum, 2007). Common interpretations are described below.

Enfeebled life. Children view death differently than adults, a form of enfeebled life that happens to only the sick and very old (Kastenbaum, 2007; Slaughter & Griffiths, 2014). Young children have trouble distinguishing between the concepts of life and death, so often apply the same personality and behavioural qualities of the living to the deceased. For example, pre-schoolers assume the dead still have emotional and physical needs, such as the need to eat or the ability to feel lonely. The irreversibility of death is not fully understood, so most view it as a temporary state, much like sleep, and expect the person will eventually 'wake up' and return to life. By age ten most children understand death is permanent, irreversible and an event that ultimately happens to all living beings (Slaughter & Griffiths, 2014).

Extinction. The Western socio-cultural perspective tends to view death as extinction, a concept largely driven by the biomedical understanding of the objective state of death (Kastenbaum, 2007). Current scientific thought is based on the concept of materialist reductionism, or the perspective that all mental states can ultimately be reducible to underlying biological processes (Carpentier & Van Brussel, 2012; Kastenbaum, 2007; van Lommel, 2011). Therefore, once the physical body perishes, it is assumed the individual's subjective, inner world also ceases to exist. Life, in every aspect, is irrefutably over. In this sense, death more correctly represents the *absence* of state.

Continuation. Across time and culture, death has been viewed as a passage from one life to another. Rather than signalling the end of life, death represents a transition into another form of existence. The type of state transitioned into is typically determined by socio-cultural factors, primarily, religion and spirituality (Lobar et al., 2006; Lucas, 1974; Riley, 1983; Tobacyk, 1984). For example, monotheistic traditions, such as Christianity and Islam, believe the soul, or spirit of the person is exposed to and reunited with God after physical death where it faces a divine judgement. The fate of the person is determined by his or her conduct in earthly life and he or she can either be sent to rewarding paradise, or a place of eternal punishment (Schimmel, 2003). In another form of continuance, indigenous perspectives, such as that of the Aotearoa New Zealand Māori and Native American tribes, consider life to continue in a spirit world existing in parallel with the material world, the dead and the living co-existing alongside each other. Continued contact with the dead occurs through visions, dreams, or other supernatural means, in what is described as a "permeability of boundaries between the living and deceased" (Comas-Diaz, 2012, p.200).

Recycled Existence. Eastern[2] religio-cultural perspectives, such as Hinduism and Buddhism, consider birth and death to be a type of illusion (Kastenbaum, 2007). Death is part of a pattern of recycled existence, rather than the end of life. When the individual physically perishes a collection of physical and mental aggregates or forces, determined by previous earthly actions, is reborn into another life with a new identity. This cyclical process occurs multiple times until the person reaches a point where he or she no longer needs to inhabit a physical body. The transition to a new identity is considered a very important process and specific rituals are usually observed at the time of dying, to ensure the transfer takes place smoothly (Lobar, Youngblut, & Brooten, 2006).

1.2.1 Investigating After-Death Beliefs

As evidenced above, beliefs about the state of death are diverse. Despite this, research assessing post-mortem beliefs has been mostly unidimensional and often based on simple affirmation or denial of an afterlife, for example "do you believe in an afterlife"? (e.g., Flannelly, Koenig, Ellison, Galek, & Krause, 2006; Greeley & Hout, 1999; Klenow & Bolin,

[2] Regions east of Europe with a culture derived from ancient non-European, especially Asian areas

1989–1990). Although some multi-item measures have been developed, most are based on Western monotheistic concepts (primarily Christian) and make a priori assumptions about the nature of any post-death existence. For example, Exline and Yali (2007) presume survival of an individuated soul that can be spatially orientated in a special realm (e.g., in 'heaven' or 'hell'), and Flynn and Kunkel (1987) presuppose an agent capable of experiencing pleasurable or hedonistic states (e.g., a state of eternal bliss). This means other types of interpretations, such as recycled existence, are unable to be accounted for and results may incorrectly infer a person has no belief in post-death continuance.

Recognising a multidimensional approach was needed, Burris and Bailey (2009) devised a conceptual model to identify the variations in core after-death beliefs, or "what people believe happens to the self after the death event" (p.174). Drawing upon both religious and philosophical thought, the authors proposed any interpretation of the post-death state can be determined according to three different elements - the fate of *consciousness*, or awareness of the self; *identity* - whether the person's recognisable personality will survive; and *physicality* - whether the person's body will be restored or replaced. Of these elements, consciousness is the most fundamental, because if consciousness does not survive then the other two elements are rendered meaningless.

Using these elements, they identified five variations in belief. These were *Annihilation*, *Disembodied Spirit*, *Spiritual Embodiment*, *Reincarnation*, and *Bodily Resurrection*. A belief in Annihilation assumes that no agent will survive death - the individual will cease to exist in every way. Disembodied Spirit is the belief consciousness will remain, but individual identity and the physical body will not. Spiritual embodiment assumes both consciousness and identity will continue in a "spiritual body," but the physical body will be destroyed. Reincarnation regards consciousness as remaining intact, but personal identity will be lost and a new physical form will be adopted. Bodily Resurrection assumes consciousness and identity will continue to exist and the physical body will be restored and perfected. Figure 1.1 outlines these variations according to the constructs of identity, body, and consciousness.

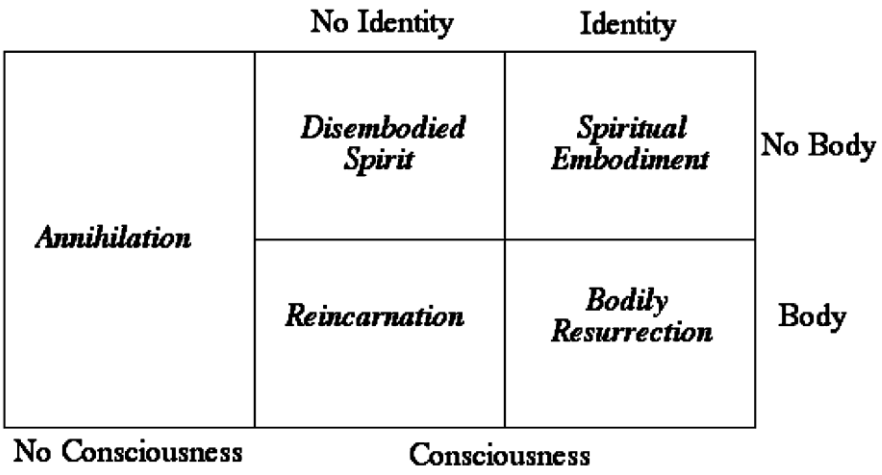

Figure 1.1. Variations in After Death Belief as a Function of Preservation of Consciousness, Identity, and Physicality (from Burris & Bailey, 2009, p.175). Reprinted with permission.

Based on this theoretical model, Burris and Bailey (2009) developed the Afterdeath Belief Scale (ADBS) and piloted it on 549 Canadian psychology university students of various ages (171 men and 377 women, 1 no sex indicated). As hypothesised, they found the five core variations accurately captured a diverse range of beliefs. For example, Hindu and Buddhists commonly aligned with the Reincarnation and Disembodied Spirit modes of thought. Bodily Resurrection and Spiritual Embodiment were embraced by Christians and Muslims, and Annihilation beliefs represented secular schools of thought, such as atheism. Cronbach alphas scores indicated good to excellent internal consistency, further supporting the validity and conceptual distinctness of these variations (Annihilation= .99, Spiritual Embodiment =.90, Reincarnation=.95, Bodily Resurrection=.84, and Disembodied Spirit =.76).

Although there is currently little criticism of the model, Hui and Coleman (2012) suggest the ADBS's conceptualisation of reincarnation is incomplete, as not all forms of reincarnation require transmigration to a physical body. In Buddhist reincarnation, some beings (such as gods and hungry ghosts) do not need a physical body. Hui and Coleman's alternative reincarnation scale, however, was designed to measure a very specific population with a very specific belief system (older Chinese Buddhists), so is perhaps more detailed than necessary for measuring more religiously heterogenous populations. High initial alphas for

Burris and Bailey's version of reincarnation suggest it is reliably measuring a unitary construct (Anglin, 2014; Burris & Bailey, 2009).

Overall, the Afterdeath Belief Scale represents a significant improvement on previous measures. It's multidimensional approach is based on an explicit conceptual model, rather than naive empiricism. It is designed to capture a variety of worldviews (both religious and secular), allowing for a wider, more inclusive assessment of after death belief types. This means it is free of the Western religious bias that has undermined previous research - an important advancement given that Western society is becoming increasingly secular but not necessarily atheist (Crabtree, 2009; Houtman & Aupers, 2007). It also means the diversity of beliefs within a given population can be more accurately measured, particularly important for multicultural societies such as Aotearoa New Zealand.

As the next section explains, the way death is perceived can affect values, attitudes and behaviour at both a personal and societal level.

1.3 Attitudes to Death

Beliefs about death are thought to have a direct impact on attitudes and approaches to death and dying (Cicirelli, 2001; Kastenbaum, 2007; Tomar & Eliason, 1996, 2000; Wong, 2008). Although there are many ways a person may respond to death, this section focuses on the three core concepts of fear, denial and acceptance – the most frequently addressed attitudes in the literature. It will discuss the correlates and determinants of these attitudes, and ways they can impact behaviour.

1.3.1 The Fear of Death

In the literature, fear of death is known by many names including fear, anxiety, concern, worry, and threat. These terms, particularly *fear* and *anxiety*, are often used interchangeably and despite semantic distinctions, generally refer to a similar psychological response to the thought of death – one delineated by feelings of dread, discomfort, apprehension, solicitude (anxiety), and other similar unpleasant emotional reactions (Farley, 2004; Neimeyer, Moser, & Wittkowski, 2003; Neimeyer, Wittkowski, & Moser, 2004; Tomar & Eliason, 1996).

Neimeyer et al. (2003), leading experts in the field, claim similarities in questionnaire items designed to measure purportedly different constructs indicate they are essentially measuring the same construct – one indicative of a "relatively stable personality disposition (trait)" (p.47), rather than the type of fear produced by an immediate threat to one's life. Fear of death is therefore best defined as the ongoing anxiety experienced in daily life in anticipation of one's own death (Tomer, 1994).

1.3.1.1 A Multidimensional Concept

Early research in the field treated the fear of death as a unidimensional concept. Assessment instruments often took the form of simple self-report questionnaires that rated responses to items such as "I am very much afraid to die," and summed them together to produce a total score (e.g., Death Anxiety Scale; Templar, 1970). However, the limitations of this type of approach have become increasingly apparent (Kastenbaum, 2007; Mikulincer, 2008; Moore & Neimeyer, 1991). Straightforward, easily scored self-reports of death anxiety are thought to be prone to social desirability response bias, defensive distortion, and not indicative of subconscious fears (Dattel & Neimeyer, 1990; Krieger, Epting, & Leitner, 1974; Mikulincer, 2008; Neimeyer et al., 2003; Tomer, 2000). Mikulincer (2008) claims many death-related concerns may not be accessible to conscious awareness, perhaps stemming from our need to repress or deny death to defend ourselves from the paralysing anxiety of our own mortality - a concept proposed by Terror Management Theory (discussed in more detail later in section 1.3.2.1). As a result, exclusive reliance on self-report scales, particularly simple unidimensional assessments, should be treated with caution as they may incorrectly assume an individual is not afraid of death. Even if fears are not consciously articulated, they may still affect a person's thoughts, feelings and behaviour.

The other limitation with unidimensional measures is they offer little or no insight into the composition of this fear, meaning findings are difficult to interpret. In contrast to earlier unitary concepts, research indicates death-related fears are multidimensional (e.g., Hoelter, 1979; Neimeyer, 1994; Wong, 2007). The discontinuation of self, fear of the dying process, death of loved ones, uncertainty of what happens after death, fate of the body and fear of the dead, are just some of the identified dimensions (see Table 1.1 for the many types of fears). The objects of fear differ from individual to individual, and it is difficult to extrapolate what aspect the person is thinking of when asked to rate their fear of death. While one person may

consider dying alone to be the most fearful aspect, another may remain unmoved by this concept. Thus, the fear of death exists as a complex combination of interacting variables and cannot be adequately understood as a singular, global construct.

Table 1.1

What Do We Fear When We Fear Death? Some of the Dimensions Related to The Fear of Death

Objects of Fear*	
Being buried alive	Isolation of the body
Dying very slowly	Failure to accomplish important life goals
Being falsely declared dead	Distress to family and friends
A painful or violent death	Being forgotten
Being cremated	Dying away from loved ones
Loss of connection with loved ones	Loss of social identity
Not being able to provide for family	Loss of earthly pleasures
Being bored	Not being in the world
Being alone	Decomposition of the body
The uncertainty of what happens next	Missing future events
Loss of consciousness	Life will go on without me
Darkness	Cessation of creative activities
Punishment in the afterlife	Cessation of all plans and activities
Not seeing children grow up	Not having lived life to its fullest

*Dimensions extracted from Kreitler (2012), the Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979) and the Fear of Personal Death Scale (FPD; Florian & Kravetz, 1983).

To identify the various aspects involved, Hoelter (1979) surveyed 375 undergraduate students about their fears regarding death. After factor analysis, he proposed eight different dimensions:

1) fear of the dying process (e.g., I am afraid of dying very slowly)
2) fear of the dead (e.g., I would be afraid to walk through a graveyard, alone, at night)

3) fear of being destroyed (e.g., I would like to donate my body to science)
4) fear for significant others (e.g., I have a fear of people in my family dying)
5) fear of the unknown (e.g., I am afraid that death is the end of one's existence)
6) fear of conscious death (e.g., I am afraid of being buried alive)
7) fear for body after death (e.g., The thought of my body decaying after I die scares me)
8) fear of premature death (e.g., I have a fear of not accomplishing my goals in life before dying)

These factors were used in the development of Hoelter's (1979) widely used 42-item Likert format Multidimensional Fear of Death Scale. Although the scale has demonstrated reasonable internal consistency, test-retest reliability and a clear factor structure for measuring Western attitudes (Neimeyer & Moore, 1994; Neimeyer et al., 2003), its cross-cultural validity is questionable, with many items irrelevant depending on the cultural context. A Lithuanian study by Roff, Butkeviciene and Klemmack (2002) found items pertaining to fear of bodily death and fear of conscious death were problematic because concepts such as "It doesn't matter whether I am buried in a wooden box or a steel vault" carried little meaning in a Lithuanian context. Long (1985) also found its structure was unable to be reliably replicated with an Islamic sample.

Florian and Kravetz's (1983) multidimensional model assesses fears specifically related to one's own death. Using a method of content analysis, the authors integrated the various types of fears identified by others in previous research and developed a tri-dimensional model of personal death recognising three different categories. The first category was *intrapersonal* death concerns, which delineated fears related to the death of one's mind and body. The second was *interpersonal* concerns, which specifically related to the impact of one's death on significant others. The third was *transpersonal concerns,* which tapped concerns related to the afterlife, or what happens next. Using this model, Florian and Kravetz (1983) subsequently designed the 31-item self-report questionnaire - the Fear of Personal Death Scale (FPDS). By means of factor analysis, they further refined and organised the model into six main factors– two for each dimension. Intrapersonal fears were composed of two factors: the fear of loss of self-fulfillment (e.g., "death frightens me because I will miss out on future events"), and fear of self-annihilation (e.g., "I am afraid of death because of the decomposition of my body"). Two other factors related to interpersonal concerns described the impact of the person's death on others: fear of loss of social identity (e.g., "death frightens me because my absence will not be

felt") and fear of consequences of death to family and friends (e.g., "I'm afraid of my death because my family will still need me when I'm gone"). Fear of the transcendental consequences of death (e.g., "Death frightens me because of the uncertainty of any sort of existence after death") and fear of punishment in the hereafter (e.g., "I am afraid of death because of the expected punishment in the next world") fell into the transpersonal dimension of death related fears. This six-factor structure has been replicated in later studies, including those investigating the beliefs of various cultural, ethnic and religious groups (e.g., Florian & Har-Even, 1983; Florian & Mikulincer, 1992, 1997; Florian, Mikulincer, & Green, 1994; Florian & Snowden, 1989), suggesting many of these fears may be universal. For instance, Florian and Snowden (1989) conducted a study of 280 American university students from diverse ethnic and religious backgrounds (Chinese, Mexican, Vietnamese, Black, White/Christian, White/Jewish) and found these fears were present across all groups, albeit to differing degrees. Although few issues with the scale have been reported thus far, some authors have noted the item "expected punishment in the next world" is only relevant to those defining themselves as religious and who believe in an afterlife, and have dropped it from their analyses (e.g., Burris & Bailey, 2009; Florian & Snowden, 1988). Hence, the FPDS appears equally reliable (perhaps more so) as a five-factor scale.

The development of multi-dimensional models and instruments, such as the FPDS, represents a significant advancement for research examining the fear of death. It enables researchers to better understand the different meanings people attach to death, and determine the impact of demographic, cultural, contextual and personal variables on death anxiety. For example, Florian and Snowden's (1989) abovementioned study found that although each group expressed a fear of death, it was for different reasons. Vietnamese participants of the Buddhist faith expressed more fear of the consequences of death to their family than other groups, and the White Protestant affiliated group scored higher on the fear of punishment in the hereafter, for instance. Florian and Snowden speculated these findings were likely due to the differing religio-cultural value orientations of each group.

The next section further examines the relationship between certain demographic variables (culture, gender, age and religion) and fear of death.

1.2.1.2 Correlates of Death Anxiety

Although psychometrically valid and reliable questionnaires for measuring death-related concerns have now been developed (Neimeyer, 1994), there exists a substantial amount of inconsistency amongst research findings. Cicirelli (1999) claims disagreement over definitions, variability of samples (differing ages, populations), and the inconsistent use of instruments (e.g., global versus multivariate) have all contributed to the discrepancy. Despite these limitations however, it is possible to find some correlational patterns in the literature. The most frequent are outlined below.

Culture. Fear of death is often considered to be a universal, innate fear that afflicts all humans (e.g., Becker, 1973; Charmaz, 1980; Florian & Snowden, 1989). As Moore and Williamson (2003) point out:

> The most common view that runs through the history of thought on death is that the fear of death is innate, that all of life tends to avoid death, and that the underlying terror of death is what drives most of the human endeavour. (p.3)

Nevertheless, fear of death may be influenced by social and cultural conditions. Charmaz (1980) claims Western industrialised society fosters a fear of death as it promotes individuality and the illusion of self-sufficiency. Gire (2014) also points out Western materialistic views equate death of body with death of self, which logically results in greater fear of death. By contrast, Kübler-Ross (2002) and Gire (2014) observe many non-Western societies appear to deal with death comparatively well, perhaps because they offer explanations of death that facilitate greater acceptance (e.g., a transitional state), and do not attempt to insulate their members from death awareness. For example, the Tibetan practice of 'sky burials' sees the body of the deceased publicly placed on a mountain top to be picked apart by vultures, the body now regarded as an empty vessel (Martin, 1996).

Empirical studies assessing fear of death amongst non-Western, non-Christian samples is limited, however evidence that it is largely a Western sociocultural construct is weak. Schumaker, Barraclough and Vagg (1988) compared the death anxiety scores of 125 Malaysian and 159 Australian university students at an Australian institution, finding Australian students (who endorsed Western beliefs about death) had significantly (but only marginally) higher death anxiety scores than Malaysian students (endorsing Eastern cultural beliefs). Abdel-

Khalek (1991) using Templer's death anxiety scale (DAS; Templar, 1970) found little difference in death anxiety scores of 673 Lebanese participants (164 boys, 165 girls in secondary school, 170 men, 174 women undergraduates) compared to Egyptian, Kuwaiti and US samples. Another cross-cultural study by Abdul-Khalek, Lester, Maltby and Tomás-Sábado (2009), using the Arabic Scale of Death Anxiety (ASDA; Abdel-Khalek, 2004) (translated into English, Turkish, and Spanish), compared the mean scores of 2,978 participants based in Egypt, Kuwait, Lebanon, Spain, the United Kingdom, and the United States, finding that all the Arab samples (except Lebanese men) had significantly higher mean scores than their Western counterparts. Hence, even though cultures may vary in the degree to which death anxiety is expressed, it seems present in almost every society and is not simply a Western phenomenon (Gire, 2014; Moore & Williamson, 2003). As Florian and Snowden (1989) demonstrated (in the previous section), what may differ between cultures is *type* of fear expressed.

Gender. Although some studies have failed to find gender differences (Aronow, Rauchway, Peller, & DeVito, 1980; Millins & Lopez, 1982; Viney, 1984), the majority of literature suggests women have more fear of death than men (e.g., Abdul-Khalek et al., 2009; Cicirelli, 1998; Gesser, Wong, & Reker, 1987-1988; Lonetto, Mercer, Fleming, Bunting, & Claire, 1980; MacLeod, Crandall, Wilson, & Austin, 2016; Pollack, 1979; Quinn & Reznikoff, 1985; Sanders, Poole, & Rivero, 1980; Suhail & Akram, 2002; Young & Daniels, 1980). Higher death anxiety amongst females also appears to be transcultural, applying to Eastern as well as Western cultures (Abdul-Khalek et al., 2009; Lonetto et al., 1980; MacLeod et al., 2016; McMordie & Kumar, 1984; Schumaker, Barraclough, & Vagg, 1988; Suhail & Akram, 2002). This difference has been suggested as an artefact of women's greater emotional expressiveness (Kastenbaum, 2000), the type of measurement instrument used (affective vs cognitive based) (Neimeyer, 1988; Schumaker, Barraclough, & Vagg, 1988), or simply men's unwillingness to admit their fears (Russac, et al., 2007). Schumaker, Barraclough and Vagg (1988) propose many scales such as the Death Anxiety Scale (Templar, 1975), are designed to measure affective responses to death. The authors suggest women are more liable to evaluate death from an emotional perspective, hence they are naturally more likely to score higher than men. To test the emotional expressiveness hypothesis, Dattel and Neimeyer (1990) used two types of scales, the more affectively based Death Anxiety Scale and the more cognitively based Death Threat Index (Kreiger, Epting, & Leitner, 1974), finding women scored higher than men

on the affectively oriented measure, whilst scores were the same on the cognitively based measure. When controlling for levels of social desirability and self-disclosure, these results remained the same, which questions the validity of the emotional expressiveness hypothesis. Using the Multidimensional Fear of Death Scale, Cicirelli (2001) and Power and Smith (2008) found women have greater fears for the death of significant others than men. As women are typically the primary care givers within families (and may have stronger familial bonds), it is possible this particular factor may elevate fear of death in women.

Age. Despite their relative proximity to death, the weight of evidence has also shown older adults have less fear of death. Young adults and adolescents tend to express greater fears of death (e.g., Cicirelli, 2001; Feifel & Branscomb, 1973; Russac et al., 2007; Thorson & Powell, 1994; Twelker, 2004). Once a person reaches the age of 60, the fear of death appears to remain stable over time (Fortner, Neimeyer, & Rybarczyk, 2000). For example, Russac et al. (2007) found men and women in their 20's have the highest levels of death anxiety, which declines significantly with age until 60 years old, when it then stabilises. The exception was a secondary peak around 50 years for women, which was speculated by the researchers as possibly connected to menopause. Interestingly, studies have also indicated gender differences decrease with age, and both men and women tend to express the same level of death anxiety as they approach the end of life (Fortner, Neimeyer, & Rybarczyk, 2000).

The specific aspects of death people find fearful also differ with age. Twelker (2004) found young adults and adolescents have more intrapersonal fears, such as dying alone, not achieving life's potential, and not being remembered. Thorson and Powell (1994) similarly found younger participants scored higher on fears such as bodily decomposition, pain, helplessness, and isolation, whereas older participants expressed concerns of a more transpersonal nature, such as the possibility of an afterlife. Neimeyer and Moore (1994) also found most death-related fears, including the Fear of Dying, declined with age; however Fear of the Unknown increased with age.

Religion. It is often assumed that religion, particularly afterlife belief, exists for the primary function of reducing fear surrounding death, mainly as a type of defence or coping mechanism (e.g., Ochsmann, 1984; Schoenrade, 1989; Yalom, 2008). Despite this popular belief, research has failed to find a consistent relationship between religious variables (such as afterlife belief, church attendance, knowledge of dogma) and the fear of death (e.g., Aday,

1984-85; Arndt, 1980; Blythe, 1981; Elahi, 2007; Harding, Flannelly, Weaver, & Costa, 2005; Roff, Butkeviciene, & Klemmack, 2002; Templar & Dotson, 1970).

Afterlife belief is often considered by psychologists to be a form of symbolic immortality (Lifton, 1973), that is, an object, thought or idea that represents oneself and endures beyond our physical demise. However, those who embrace the existence of an afterlife consider it an expression of *actual* immortality. Theoretically, this belief should be more successful than other symbolic forms for alleviating death fear. However, there is ambiguous evidence that afterlife belief buffers the fear of death, with some researchers reporting belief in the afterlife can even increase death anxiety (Exline, 2003). Type of belief in the afterlife for example, reward based, judgement, or reincarnation, also does not appear to have a significant bearing on level of death fear (Rose & O'Sullivan, 2002).

The inconsistency of findings is perhaps due to the multidimensional nature of religion. Religion can mean different things to different people and it may depend on which aspects are measured, particularly whether external or internal aspects of religiosity are assessed (Ardelt, 2008; Harding, Flannelly, Weaver & Costa, 2005; Thorson & Powell, 1990). Internal aspects, known as 'intrinsic religiosity', consists of the development of a meaningful inner spiritual life and plays an important part in the person's daily life. By contrast, extrinsic (external) religiosity is more self-serving and concerned with outward displays of faith such as church attendance, religious practice or affiliation with a religious group. Research differentiating between these two aspects has found only an intrinsic religious orientation moderates the fear of death. In fact, extrinsic religiosity has even been associated with an *increased* fear of death (Ardelt, 2008; Donahue, 1985).

Studies also suggest strength of conviction in a chosen system of belief, regardless of whether the individual is a religious believer or non-believer, is more important than religion per se (Aday 1984-85; Downey, 1984; McMordie, 1981; Rasmussen & Johnson, 1994; Wink & Scott, 2005). Slezak (1980), McMordie (1981) and Wink and Scott (2005) all found persons who occupy the 'middle ground' in terms of religiosity, that is, not strongly affiliated nor weakly affiliated with their religious belief, had the highest levels of death anxiety. The reason for this is unclear, but one plausible explanation was proposed by Lester et al. (2002), who theorised individuals with a strong belief system (whether religious or atheist) feel more in control, and the world therefore more predictable.

Taken together these results suggest that any belief in the afterlife needs to be genuine, consistent and meaningful to moderate the fear of death. Without this, as proposed by Aday (1984), afterlife belief becomes primarily a function of religion, rather than a useful mechanism for easing death-related fears.

1.3.2 Managing the Fear of Death: The Concept of Denial

Although fear of death is often considered to be an instinctive response, Becker (1973) claims it cannot be continually at the forefront of conscious awareness otherwise it would be debilitating. One way of managing this fear is through denial - the "unconscious process of distorting or avoiding threatening thoughts, feelings, or perceptions" (Shackelford, 2003, p. 327). By engaging in death denying behaviour, people insulate themselves from the reality of death (and associated fears) by eliminating it from conscious awareness (Schumaker, Barraclough, & Vagg, 1988).

Western civilization is often described as a death-denying society, perhaps resulting from the socio-cultural perspective that death is the end of life (e.g., Freud, 1915; Kübler-Ross, 1969; Becker, 1973). While some authors have questioned whether Western society continues to remain death-denying, or if it even was one in the first place (Kellehear, 1984; Seale, 1998; Zimmerman & Rodin, 2004), there is considerable 'evidence' for this hypothesis. Zimmerman and Rodin (2004), outline the five major areas as:

1) the taboo on conversation about death;
2) the medicalization of death;
3) the segregation of the dying from the rest of society;
4) the decline of mourning rituals; and
5) death-denying funeral practices, such as embalming (p.122).

The medicalisation of death and its associated sequestration (removal or separation from individual control) is frequently cited as a prime example of death-denying behaviour. Death is often treated like an illness and medical professionals routinely attempt to delay the moment of death for as long as possible, sacrificing quality of life in the process (Gwande, 2012; Kübler-Ross, 1969; Lee, 2009). Within the medical profession, a patient's demise is viewed as a source of shame and a failure of medical technology (Harris, 2010). Even though

most people wish to die at home (Lee, 2009), majority of people in Western countries die in hospital or a palliative care facility. Many die alone, or surrounded by unfamiliar faces (Dunlop, Davies, & Hockley, 1989; Gomes & Higginson, 2008). Elisabeth Kübler Ross (1972), a well-known advocate for the rights of the dying, summarised the situation accordingly:

> What has changed, I think, is our society, which has become increasingly a death-denying society. Half of our patients now die in hospitals, as compared to 50 years ago when people died at home in a familiar environment with a little bit of chicken soup instead of transfusions, with their families around them instead of interns, residents, and laboratory technicians. (p.174)

Another example of death denying behaviour is the suppression of grief after the death of a loved one. Harris (2010b) discusses how grieving individuals often feel considerable pressure to conform to societal rules that dictate how grief should be expressed, and for how long. Therapeutic interventions, whilst well-intentioned, implicitly consider grief to be a pathological response, rather than a normal reaction to loss. Lee (2009) agrees that any prolonged grief instead becomes "a suspicious sign of depression" (p.56). This attitude contrasts sharply with Egyptian bereavement practices, where a bereaved mother is expected to intensely grieve for at least eight years (Rosenblatt, 1993).

Whether these 'death denying' practices stem from fear of death or are grounded in other factors such as a capitalist economy (Harris, 2010b), "conversational propriety and emotional reserve" (Kellehear, p. 719), or a reflection of changing family life (Zimmerman & Rodin, 2004), is subject to continuing debate. Nevertheless, the idea humans deny or repress death as a means to cope with death anxiety continues to persist, and forms the basis of one the most well-regarded theories concerning death – Terror Management Theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986).

1.3.2.1 Terror Management Theory (TMT)

TMT is based on ideas espoused by Becker (1973) that a great deal of human social behaviour is motivated by the need to manage the abject terror of our own death. TMT theorises that cultural systems such as religion, law and order are important safety mechanisms that protect against feelings of vulnerability created from awareness of our mortality. This may be because they provide a means to be part of something greater than ourselves, something that

cannot really ever die (Kastenbaum, 2012). To manage the "terror" of death, the individual must "fit in" and abide by society's written and unwritten rules to achieve feelings of self-worth and belonging, both of which serve to buffer against the fear of death. The theory proposes that when death is made salient, individuals will increase their participation in the cultural systems. Mortality salience means participants are primed with death images, information, and circumstances before completing an experiment designed to evaluate various types of social behaviour. Typically, participants may be asked to briefly consider their own death, then will be distracted by another unrelated task, so thoughts of death are no longer at the forefront of conscious awareness (e.g., Routledge, Arndt, & Goldenberg, 2004). One of the predictions of TMT is that mortality salience will intensify negative or intolerant reactions towards those who threaten one's worldview (moral transgressors) and encourage positive reactions to those who uphold similar cultural values.

There exists a large body of empirical evidence in support of TMT (e.g., Arndt, Schimel, & Goldenberg, 2003; Greenberg, Pyszczynski, & Soloman 1986; Rosenblatt, Greenberg, Soloman, & Pyszczynski, 1989; Pyszczynski, Solomon, & Greenberg, 2015). For example, Rosenblatt et al. (1989) found judges exposed to mortality salience (a short survey about thoughts and feelings about their own death), were more likely to impose harsher penalties on a prostitute (in a hypothetical legal brief), in comparison to judges who were not primed with mortality salience. In the same study, mortality salience also led to an increased desire to reward a person who upheld cultural values. In this scenario, participants were informed of a woman who put herself at risk in order to help police apprehend a criminal. Those exposed to mortality salience recommended she receive a higher amount of reward than those who were not exposed.

TMT's other basic premise is that self-esteem has an important role in protecting individuals from the fear of death. Harmon-Jones et al. (1997) found people with higher self-esteem (both dispositional and manipulated) were less likely to engage in defensive behaviour designed to protect their worldview. Following mortality salience, American university students were asked to evaluate a person who upheld their cultural worldviews and a person who threatened an aspect of their worldview. Those who had received positive feedback on a bogus personality test beforehand (as an experimental condition), were less likely to negatively evaluate the person who did not share their worldview. The same effect was demonstrated amongst those who had naturally high dispositional levels of self-esteem. These findings offer

potential suggestions for managing the fear of death, either by increasing self-esteem or by strongly aligning with culturally sanctioned concepts and values, particularly those from which comfort is drawn (e.g., religious belief) (Kastenbaum, 2007).

However, while TMT has gathered sound empirical support, some disagree with its underlying premise (Cozollino, 2006; Cozzolino & Blackie, 2013; Seto, Hicks, Vess, & Geraci, 2016; Wong, 2008). Researchers such as Seto, Hicks, Vess, and Geraci (2016) have found more authentic, vivid forms of mortality salience (e.g., intensely reflecting on a real-life incident), can foster meaningful growth-oriented reactions, such as goal pursuit and self-development. Post-traumatic growth research also conflicts with TMT by demonstrating that positive psychological growth often occurs among individuals facing their mortality (Calhoun & Tedeschi, 2001). Hence, authors such as Cozollino (2006) and Wong (2008, 2011) believe humans have the capacity to respond to death in a positive, proactive manner. Instead of reacting with a fear-based response (that may result in intolerant and prejudiced behaviour), many individuals can and do choose to consciously face death and maximise their acceptance of it.

1.3.3 Death Acceptance – Another Way of Managing the Fear of Death

Despite the common theoretical implication that low levels of death anxiety are indicative of denial, some researchers noted this did not necessarily signify an absence of anxiety, but an embracing of more positive cognitive orientations, such as acceptance.

The concept of death acceptance has been largely advanced by Wong and colleagues (e.g., Gesser, Wong, & Reker, 1987-1988; Wong, Reker, & Gesser, 1994), whose work with the elderly demonstrated older persons consistently displayed lower levels of death anxiety. Yet, rather than deny or avoid the topic of death, they appeared keen to discuss it, and in some cases, eagerly anticipated it. The authors concluded for many people, particularly the elderly, acceptance may be the prominent attitude toward death, rather than denial or fear.

Klug and Sinha (1987) regarded death acceptance as having two elements: an awareness of one's own mortality and a positive or neutral emotional reaction to this knowledge. They defined death acceptance as the "deliberate, intellectual acknowledgement of the prospect of one's own death and the positive emotional assimilation of the consequences" (p.230). In

more general terms, Gesser et al. (1987-1988) consider death acceptance to be a state of psychological preparedness for the final exit.

Increased acceptance of death does not necessarily mean a person has no fear of death. Rather, the two attitudes of acceptance and fear "coexist in an uneasy truce" (Fiefel, 1990, in Wong, Reker, & Gesser, 1994, p.124). Generally speaking, increased acceptance has a moderating effect on fear of death. Those who exhibit high levels of acceptance tend to have lesser fears of death than others (Gesser et al., 1987-88).

Initially, like death anxiety, death acceptance was treated as a singular, unidimensional construct. As research has progressed, differing types of death acceptance have been identified. Gesser, Wong and Reker (1987-88) have advanced a three-component model that categorises death acceptance into three groups:

1) *Neutral acceptance*: the individual maintains an impartial attitude towards death, believing it to be a central yet unalterable part of life. Death is not feared, yet it is not embraced either.
2) *Approach acceptance*: The individual endorses a positive view of death, most likely linked to a belief in a pleasant and rewarding afterlife.
3) *Escape acceptance*: The individual views death as an escape or way out from the difficulty or pain of earthly existence.

Using this model, the authors developed the Death Attitude Profile (DAP), a self-report questionnaire measuring the three types of death acceptance plus two other attitudes; fear and avoidance. The DAP remains the most commonly used tool for assessing level and type of death acceptance (Neimeyer, Moser, & Wittkowski, 2003). A clear strength of the DAP is it attempts to extend the assessment of death attitudes beyond solely negative reactions to death. Unfortunately, the other two types of attitudes included in the scale; death avoidance and fear of death, remain rather simplistic and unidimensional by comparison. Neutral acceptance also sometimes loads onto two separate factors, suggesting it may be measuring two different forms of neutrality (Clements & Rooda, 2000; Ho et al., 2010). Nevertheless, the DAP has proven useful for delineating the different types of acceptance that can occur, and how this may be influenced by certain variables, such as age, health or religious belief. Some correlates of death acceptance are described below.

1.3.3.1 Correlates of Death Acceptance

Although a smaller body of research exists in comparison to death anxiety, death acceptance has been correlated with several variables. The most consistent finding is that older adults are more likely to accept death (Cicirelli, 2003; Gesser et al., 1988; Reker, Peacock, & Wong, 1987). For example, Gesser et al. (1988) found the elderly were more likely to report all three types of acceptance, particularly neutral acceptance, in comparison to a sample of middle aged and young adults. The authors attributed this to the elderly having lived a relatively long time and learned to come to terms with the reality of death. Cicirelli (2003) expands on this concept, suggesting various coping strategies (cognitive and emotional reorganisation) are activated as the person nears death, due to increased awareness of the limited time left to live.

Religion may also play a part in death acceptance, specifically a belief in life after death (Ardelt, 2003; Harding, Flannelly, Weaver, & Costa, 2005; Klug & Sinha, 1987–1988; Wittkowski, 1990). Support for this concept was indirectly provided by Klug and Sinha (1987–1988) who, using the Death Acceptance Scale (Klug & Sinha, 1987–1988), found death acceptance was higher among priests and nuns than other groups also surveyed (Klug & Sinha, 1987–1988). Harding, Flannelly, Weaver and Costa (2005) assessed the attitudes of 130 church goers, examining different expressions of religiosity. Those who held a genuine belief in God and the afterlife (theological religiosity) were significantly more likely to accept death. Ardelt (2003) similarly found death acceptance was only related to internalised, deeply held, expressions of faith. Hence, much the same as lowered death anxiety, increased acceptance of death is reliant upon intrinsic rather than extrinsic expressions of faith.

Perhaps more importantly, research shows acceptance of one's own death is positively correlated to measures of health, happiness, wellbeing, and greater life satisfaction (Cozzolino, Blackie & Meyers, 2014; Flint, Gayton, & Ozman, 1983; Gesser et al., 1987-1988; Wong & Watt, 1991). As a result, there is an increasing trend to focus on the more positive attitude of death acceptance rather than negative aspects such as fear or denial, largely for its practical value in both therapeutic settings and every-day life. Death is a fact of life, and because all individuals need to face death at some stage, finding ways to accept our own mortality is a logical next step.

1.3.3.2 Encouraging Acceptance of Death

Because a person's attitude to death is closely related to the meanings brought to death, encouraging acceptance involves re-conceptualising his or her understanding of death. Kreitler and Fleck (2012) claim we are unlikely to reduce death anxiety without addressing core beliefs and associated meanings rooted in the cognitive and emotional domains of functioning. To this end, it is not necessarily that death anxiety is hard to change, but "it is necessary to apply the adequate theoretical and methodological means" (p.99). In other words, if we attempt to evoke more positive conceptions of death, then the task of facing our own death becomes easier. Unfortunately, Kreitler and Fleck do not elaborate on how to do so. It seems unlikely to be easy however, as by their own admission, many of these beliefs may be inaccessible to conscious awareness.

A simpler approach may be to focus on life, rather than death. Psychological theories based on the philosophy of existentialism postulate all individuals are motivated to find meaning in life, and the fear of death stems from a failure to do so. Life and death are interwoven concepts, so living a full and meaningful life can affect our willingness to accept death (Frankl, 1965; Mikulincer & Florian, 2006; Reker, Peacock, & Wong, 1987; Wong, 1989; 2000). Conversely, if approached with a sense of failure and regret in life, death is likely to be responded to with fear, primarily because we have never really lived (Tomer & Eliason, 2006; Wong, 2000). Wong, a cancer survivor, explains:

> Since we only go through this life once, we have reasons to make the most of it. The worse fear is not death, but the discovery that we have never really lived when the time comes for us to die. We all have the urge to desire to live fully, to do something significant, and to make a difference, so that we don't have to dread the death-bed realization that we have squandered away our precious life (Wong, 2005c, as cited in Wong, 2008, p.24).

The hypothesis that a sense of meaning and purpose in life is related to an individual's attitude to death has found empirical support, with studies reporting correlations between existential wellbeing and more adaptive attitudes to death (Breitbart et al., 2010; Cozzolino, Blackie & Meyers, 2014; Durlak, 1972, 1973; Quinn & Reznikoff, 1985; Wong, Reker, & Gesser, 1994). Using the DAP-R, Cozzolino et al. (2014) found an enhanced sense of self, including self-esteem, self-concept clarity, locus of control, self-realization, and existential

well-being, was significantly related to lower levels of death denial and death fear.

1.3.3.3 Meaning Management Theory

Wong's (2006) "Meaning Management Theory" (MMT) proposes that by managing the various meaning-based processes available, we concentrate on living a happy, fulfilling and productive life, effectively buffering ourselves from the terror of death. Although not an alternative to TMT, it is positioned as a compatible approach that recognises humans have the capacity to grow and face death with courage, rather than simply responding in a defensive or reactive manner. Whereas TMT predicts a (largely unconscious) fear-based response as a means to combating death anxiety, MMT advocates a proactive, positive approach towards life as the best line of offense. Wong (2008) describes meaning management as an inner process that allows us to "understand who we are (identity), what really matters (values), where we are headed (purpose), and how to live the good life in spite of suffering and death (happiness)." MMT encourages purposeful and growth-oriented actions, both internally and externally. It refers to managing our inner resources – our feelings, thoughts, beliefs and perceptions about life and death, but also recognises the importance of external actions, or life goals, which align with our deepest psychological and spiritual needs.

Wong (1998) identified seven sources of personal meanings. By concentrating efforts in any of these areas, increased happiness and fulfilment is likely to result:

1. Achievement and goal striving (agency)
2. Intimacy and family (love)
3. Relationships (community)
4. Self-transcendence (larger cause)
5. Religion (spirituality)
6. Self-acceptance (maturity)
7. Fair treatment (justice and morality)

Research in Japan (Takano & Wong, 2004), Korea (Kim, Lee, & Wong, 2005) and China (Lin & Wong, 2006), has indicated these sources appear to be universal, hence a notable strength of MMT is its cross-cultural applicability. This may mean it has more global relevance than TMT - a theory developed and tested primarily on Western populations.

Above all, MMT's holistic perspective emphasises the importance of spirituality as a path to death acceptance. Although considered an elusive concept to define (Cicirelli, 2011), spirituality is generally regarded as the inner search for meaning that recognises a transcendent or sacred dimension of reality (Sperry & Shafranske, 2005; Pargament, 2007). Spirituality is the feeling of being part of something greater. It endows life with a sense of significance and provides a framework for both life and death to be understood (Peteet & Balboni, 2013). Spirituality can also be understood as "the way in which people understand and live their lives in view of their ultimate meaning and value" (Muldoon & King, 1995, p.336).

A principle tenet of MMT is that humans are bio-psycho-social-spiritual beings, therefore acknowledging the spiritual dimension of life is a central and vitally important aspect of what it is to be human. Because of this biologically based urge or need, those who focus on finding meaning through spirituality will achieve a greater level of death acceptance than those who do not. The transcendental sources of wisdom offer hope, courage and resilience in the face of life's difficulties, with death perhaps the most difficult of them all (Frankl, 1986; Wong, 2011).

1.3.3.4 Meaning Reconstruction

MMT encourages death acceptance through deliberate and purposeful action; however sometimes a person's attitude to death can be unexpectedly transformed in the same manner by a single event. Kastenbaum (2007) observed that when it comes to the attitudes, beliefs and feelings a person brings to death, the most pronounced differences can be found between people who have had a personally significant death and those for "whom death has remained a distant topic, or even just a word" (p.13). Such experiences often initiate a cognitive process known as 'meaning reconstruction', which occurs when an individual dramatically revises his or her core beliefs, thoughts and feelings about death. This process often takes place after a traumatic and/or inconceivable event, such as the death of a loved one, or a life-threatening episode, as a means of coping with their new reality (Holland, Currier, & Neimeyer, 2006; Matthews & Marwit, 2006; Neimeyer, 2001; Park, 2010; Wong, 2008). More than just cognitive re-framing, or a superficial revision of values and beliefs, meaning-reconstruction involves an intense rebuilding of one's core values and worldview to find renewed meaning in both life and death. It is often conceived of in philosophical and spiritual terms (Holland, Currier, & Neimeyer, 2006). A transformative process, meaning reconstruction is often highly

successful at facilitating death acceptance (Wong, 2008), perhaps because it necessitates meaningful change in the cognitive and emotional domains of functioning, as suggested by Kreilter and Fleck (2012) earlier in this chapter.

1.4 Summary

How an individual interprets both the event and the state of death is defined by socio-cultural, familial and personal factors. There are numerous beliefs about what happens to the self after the body's physical demise, such as extinction, continuation and recycled existence. In the West, death is defined according to a biomedical model that considers death to be the absolute end of existence. This understanding may be responsible for the many death-denying cultural practices evident in Western society.

There are many ways people respond to the thought of their own death, however the concepts of fear, denial and acceptance have received the most attention in the literature. In contrast to earlier unitary concepts, research has confirmed death related fears are multidimensional. There are many reasons why a person may fear death, and the type and level of fear can vary according to demographic, cultural, contextual and personal variables. Due to its practical relevance, meaning-based approaches for encouraging increased acceptance of death have found recent popularity. As opposed to defensive or reactive strategies for managing the fear of death, such as those postulated by TMT, positive meaning-management theories such as MMT advocate a proactive approach to combating death anxiety by exploring ways to facilitate a greater acceptance of death.

The greatest differences in death acceptance are often found between those who have experienced a personally significant death and those who have not. A direct confrontation with death often forces a person to reconstruct their beliefs and attitudes about death, as a way of making sense out of an otherwise inconceivable event. Known as meaning reconstruction, this transformative process is considered highly effective at facilitating death acceptance. A specific event that may instigate this process is an NDE. The following chapters will now discuss this unusual and often controversial phenomenon, what it is, and how it can dramatically transform a person's outlook on both life and death.

Chapter 2.

Near-Death Experience

The following chapter reviews the existing research on NDEs amassed over the last 40 years. To appreciate the NDE's impact on an individual's values, beliefs and behaviour, it is imperative to first understand what the experience is, how it manifests and what it feels like for the experient. The chapter begins by defining NDEs. As NDEs are best understood by their phenomenological presentation, a description of the core characteristics of the experience will follow, accompanied by brief narrative accounts extracted from the existing literature. Section 2.3 discusses who is likely to have an NDE, how they are triggered and how often these experiences occur. Finally, the chapter concludes with a discussion on some proposed causal mechanisms of NDEs.

2.1 Definition and Phenomenology

Unusual subjective experiences when coming close to death or perceived as having occurred during a period of actual death, have been reported throughout antiquity - across time and across cultures. Although the term "near-death experience" did not enter common usage until the late 1970s, NDE accounts have been recorded in ancient historical texts such as the Egyptian book of the Dead, the Tibetan Book of the Dead and the Bible. One of the earliest known written accounts of an NDE is found in Plato's *The Republic* (10.614-10.621) written in the 4th century BC. The 'Myth of Er' is a lengthy narrative of a soldier who dies in battle and returns to life describing an out-of-body experience (observing his deceased physical body from a distance), encountering nonmaterial beings and travelling through an unearthly landscape.

Renowned psychiatrist Carl Jung wrote at length about the vivid and intensely meaningful visions he experienced during his cardiac arrest in 1944. In a classic example of an NDE, Jung recounted the "extremely strange things" that happened to him:

> I felt as though I were floating in space, as though I were safe in the womb of the universe in a tremendous void, but filled with the highest possible feeling of happiness. "This is eternal bliss," I thought. "This cannot be described; it is far too wonderful!" (Jung, 1965 as cited in "Carl G. Jung's Near-Death Experience", 2016, para. 23)

Dr Raymond Moody's book *Life after Life* (1975) brought NDEs to the attention of the wider Western world. In it, Moody identified fifteen different phenomenological features that frequently occurred during NDEs, compiled from over 150 case studies collected over several years while he was a medical student. The features included ineffability, feelings of deep peace, an awareness of being dead, an out-of-body-experience (OBE), the sensation of moving through a tunnel, an unearthly environment, meeting spiritual beings, experience of a light or a being of light, unconditional love, understanding of universal truths, a panoramic life review, arrival at a border or threshold and return to the body. Moody used the term "near-death experience" (NDE) to describe these occurrences, defining the phenomenon as "any conscious perceptual experience which takes place during a near-death encounter", which he described as, "an event in which a person could very easily die or be killed (and may even be so close as to be believed or pronounced clinically dead) but nonetheless survives, and continues physical life" (1977, p. 124).

Empirical research into NDEs began shortly thereafter, and much of the work since has confirmed Moody's initial findings. Although initially only associated with life threatening events, researchers later noted these experiences were sometimes triggered under non-critical conditions, such as during extreme emotional or physical stress (e.g., severe depression or physical isolation) (Charland-Verville et al., 2014; Facco & Agrillo, 2012; Owens, Cook, & Stevenson, 1990). Taking this into account, Greyson (2000) went on to define NDEs as "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, p. 315-316). By transcendental and mystical elements, Greyson is referring to features that appear to transcend the material world and the usual confines of time, space and ego – features often creating the subjective impression that human reality extends beyond the physical body.

For the purposes of this study, Greyson's definition was considered the most appropriate. With over 30 years of experience and over 70 publications on the subject,

Greyson is considered a leading authority in the field of near-death studies. A review of the literature suggests this definition remains the most widely used by NDE researchers, hence adopting this definition for the current study provides consistency, thus further standardising research in the field.

Methodological Challenges. Although important advances have been made, NDE research is still a relatively underdeveloped field, with a variety of methodological challenges. Due to the spontaneous and unpredictable nature of NDEs, it is currently not possible to study NDEs under controlled experimental conditions. Instead, researchers must rely solely on experiencers' testimonies, using retrospective (sample mostly self-selected and interviewed some time after the event) or prospective (patient approached soon after life-threatening event and asked to participate) methodologies. The majority have been retrospective in nature, using relatively small, self-selected samples. As Zingrone and Alvarado (2009) note, self-selected samples may inadvertently bias findings, as only those who are familiar with or interested in the topic may participate, making it difficult to tell how representative participants are of the wider population of NDErs. Retrospective studies are also dependent on participant recall and may be prone to embellishment over time (Kendall, Butcher, & Holmbeck, 1999).

Prospective studies counter many of the sampling biases inherent in retrospective studies, however these studies tend to be far more logistically complex and expensive to run, so fewer have been conducted. Greyson (1998) also claims prospective studies are not totally free from sample bias, and often rely on a relatively select group of volunteers. Many prospective studies have also suffered from very small sample sizes, which present issues regarding the statistical robustness of quantitative findings (e.g., Klemenc-Ketis, 2013; Schwaninger, Eisenberg, Schechtman, & Weiss, 2002).

Taking into consideration the above limitations, what follows is a review of the current state of knowledge regarding NDE phenomenology, incidence, correlates and proposed causal mechanisms.

2.1.1 Core Features of NDEs

Primarily defined and understood by their phenomenology, understanding NDE features is vital. This section describes the most frequently reported features of Western NDEs. It is

important to note the amount, type and order of features can vary from person to person. Because these features are best illustrated from a subjective perspective, this review is accompanied by first-hand accounts selected from existing NDE literature.

Ineffability

Ineffability refers to the difficulty of describing the experience in words. Most experiencers report that there are no words or concepts available that can accurately describe the experience and are often immensely frustrated by their inability to adequately express the experience verbally (Greyson, 2000; Moody, 1975; Parnia, 2007; van Lommel, 2007).

> I regret that words can't do my experience justice. I must admit that human language is woefully inadequate for conveying the full extent, the depth, and the other dimension I've seen. In fact, no pen can describe what I went through. (van Lommel, 2007, p. 18).

Extreme affect

"I just had a nice, great feeling of solitude and peace… It was beautiful, and I was at such peace in my mind" (Moody, 1975, p. 21). An overwhelming feeling of deep peace, bliss and joy coupled with painlessness is the most frequently described characteristic of NDEs, with around 70-80% of experiencers reporting this sensation (Greyson, 1983; 2003; Sabom, 1982; Schwaninger et al., 2002; van Lommel, van Wees, Meyers, & Elferrich, 2001). For many people, this all-encompassing sense of peace is the most salient aspect of their experience.

Awareness of being dead

Experiencers often have an implicit understanding that they are dead, although this understanding is rarely distressing (Moody, 1975; Ring, 1980; Sabom, 1982; van Lommel, 2007). This realisation is sometimes followed by a wind like sound or buzzing noise (Moody, 1975). A case study example is cited by van Lommel (2007): "the weird thing is that I wasn't at all surprised or anything. I simply thought: Hey, I'm dead now. So this is what we call death." (p. 19)

Out-of-body experiences (OBEs)

The out-of-body experience (OBE) is one of the key features of NDEs. The OBE is an altered sense of perception whereby the self, or locale of consciousness, is perceived to be

spatially remote from the physical body. Because of the lack of a clear definition regarding what constitutes an OBE, the incidence of NDE induced OBEs (NDE/OBE) has varied between studies with reports from anywhere between 24% (van Lommel et al., 2001) to 99% (Sabom, 1982). For example, sometimes the OBE may be considered as a 'sense of bodily separation' (Sabom, 1982), or more specifically it may be defined as the experience of disembodiment and elevated visuospatial perspective whereby the physical body is viewed from a distance (e.g., Greyson 1993; Greyson, Holden, & Mounsey, 2006). Frequently it is not clear which of these definitions has been used. This discrepancy may account for the large variation in NDE/OBE incidence documented from study to study (Blanke & Dieguez, 2009). With reference to the latter definition (disembodiment and elevated visuo-spatial perspective), commonly NDErs will view their body from above, often watching their own resuscitation procedure. A typical account is as follows:

> When I became conscious again, not only was I out of my body, but it took me a few moments to realize that the cadaverously pale, blood soaked body lying on the operating table was indeed mine! My 'point of consciousness' was up, somewhere near the ceiling. I was watching this bevy of nurses and doctors rushing madly around the room, all very intent on bringing that poor young girl back to life…And then suddenly, I floated down a bit and realized with utter shock and amazement that that thin, pale, pallid body was indeed *my* body. (Greyson, 1993, p. 393)

During an OBE, NDErs feel as though all their sensory and cognitive processes are fully intact. Senses are often more heightened than usual with reports of extreme lucidity and enhanced perceptual awareness, such as 360 degree vision (Kelly, Greyson, & Kelly, 2007), seeing new colours, and the ability to see in the dark (Tiberi, 1993). This anomalous perceptual experience, sometimes referred to as 'mindsight', has been also reported by those who are congenitally blind (Ring & Cooper, 1999). The ability to hear despite being deaf has also been documented (Ring, 2000). In this frame of consciousness, NDErs claim an inability to communicate or physically interact with others, instead they operate as a kind of invisible witness to events. NDE/OBErs also speak of their ability to see and move beyond their immediate locality, sometimes perceiving events occurring at remote locations. The usual physical constraints of the material body appear to have no bearing on the scope of out-of-body movement. The NDEr's account of material reality during the OBE is often deemed to be accurate and able to be corroborated by independent others (Holden, 2009).

The meeting of spirits

The seeing, hearing or sensing of spirits during an NDE is described by approximately 50% of NDErs (Greyson, 2003; Greyson & Stevenson, 1980; Kelly, 2001; Schwaninger et al., 2002; Sutherland, 1989). Spirits encountered most often take the form of deceased relatives, friends, religious or holy figures, or what is understood to be a spirit guide – a benevolent figure the NDEr does not recognise yet inherently understands is intimately concerned with his or her welfare (Kelly, 2001). Occasionally, terrifying figures are encountered. In contrast to adults, children are more likely to describe the meeting of pets or animals (Atwater, 2003; Serdahely, 1990). Typically, when meeting deceased relatives or friends the spirit is seen in his/her prime, as he or she looked (or would have looked) when alive. An example is cited below:

> I was in the brightest place I have ever seen . . . I actually saw my friend Bill . . . coming towards me with his arms outstretched—he looked so healthy and smiling (not the way he looked before he died). (Kelly, 2001, p. 232)

Kelly (2001) examined a number of factors in relation to the encountering of spirits during an NDE. Using a sample of 553 case studies, Kelly found that 274 people encountered spirits of some kind. Seventy-four encountered deceased persons, and 200 encountered non-deceased entities such as religious figures, animals or unidentified figures. With regard to the meeting (or sensing) of deceased individuals, the closer the NDErs were to death the more likely they were to encounter a deceased person. Likewise, accident and cardiac arrest victims (conditions of sudden onset) were significantly more likely to see or sense a deceased person. The majority of NDErs (81%) reported seeing individuals from a previous generation (e.g., a grandparent), although emotional closeness to the deceased person was deemed more significant than blood relationship. By contrast, there was no apparent relationship between non-deceased figures and proximity to death or type of medical condition.

Perhaps more surprising is the substantial amount of cases where the NDEr did not know the deceased individual, or they saw a person they did not expect or particularly care about (approximately 32% in Kelly's study). Also of interest are NDEs known as "Peak in Darien" experiences, whereby the NDEr encounters a recently deceased person he or she had believed to be still living (Greyson, 2010; Moody, 1988). An example of this type of experience is quoted below:

> I was terribly ill and near death with heart problems at the same time that my sister was near death in another part of the same hospital with a diabetic coma. I left my body and went into the corner of the room, where I watched them work on me down below. Suddenly, I found myself in conversation with my sister, who was up there with me. I was very attached to her, and we were having a great conversation about what was going on down there when she began to move away from me. I tried to go with her but she kept telling me to stay where I was. "It's not your time," she said. "You can't go with me because it's not your time." Then she began to recede off into the distance through a tunnel while I was left there alone. When I awoke, I told the doctor that my sister had died. He denied it, but at my insistence, he had a nurse check on it. She had in fact died just as I knew she did. (Moody, 1988, p. 173)

According to reports of NDErs, the role of these spirits is to provide comfort, impart knowledge, or to advise the individual that it is not yet 'their time'. Communication with encountered spirits is commonly reported to take place via a form of telepathy, rather than as a verbal exchange (Ring, 1980).

An unearthly or transcendental environment

Around 50-60% of NDErs experience an unearthly realm of existence that differs from the physical world (Zingrone & Alvarado, 2009). Grey (1985) examined the types of environmental features experienced during NDEs, and found the landscapes reported were beautiful gardens, cities, buildings, and magnificent natural features such as rivers, mountains and fields. Typically, this environment is of incomparable beauty and consists of unusually vivid colours or soft ethereal light. Arrival into this transcendental environment is sometimes accompanied by beautiful music and pleasing scents, such as sweet smelling flowers (Ring, 1980; Satori, 2014).

Type of environment experienced seems to be largely dependent on cultural values. For example, Western accounts will describe typical heavenly scenes such as those cited above. By contrast, Japanese accounts speak of long winding rivers, lotus flowers and other culturally specific expressions of beauty (Yamamura, 1998; Ohkado & Greyson, 2014).

Not all experiences are positive however, and sometimes barren, dark, or "hellish" environments are encountered that the NDEr describes as terrifying (Bush, 2009).

The experience of brilliant light

Although figures vary across studies, an average of 60% of NDErs speak of an encounter with brilliant, yet non-blinding white light (Greyson, 1983; 2003; Sabom, 1982; Schwaninger et al., 2002; van Lommel et al., 2001). The NDEr is usually magnetically drawn toward the light, which may start as a pinpoint. The light increases in brilliance and size as the individual moves towards it, until it eventually envelops them (Moody, 1975). NDErs often interpret this light as contact with the divine, for example Jesus, God, Allah or a supreme creator (Ring & Valarino, 1998), although it may also be perceived as personality-less (Ohkado & Greyson, 2014).

As the individual merges with the light, the individual usually experiences an overwhelming sense of unconditional love and acceptance (Ring & Valarino, 1998). NDErs usually describe communicating with the light telepathically, or 'mind to mind' receiving deep knowledge and understanding of universal truths (Ring, 2000).

> In the distance I saw a light that I had never seen on earth. So pure, so intense, so perfect. I knew it was a being I had to go to. I don't know how this happened. I didn't have to think, I knew everything. I had no mobility problems anymore. I had no body anymore. This dead weight had gone…I passed through everything. At once I realised: there's no time or space here. We're always in the present here. This gave me a great sense of peace. I felt it as I experienced the Light. It's the pinnacle of everything there is. Of energy, of love especially, of warmth, of beauty. (van Lommel, 2007, p. 34)

Experience of the light is more common amongst those who are closer to death, as evidenced by corresponding medical records (Owens, Cook, & Stevenson, 1990).

The life review

The life review is experienced by approximately 13-30% of NDErs (Greyson 1993; Noyes & Kletti, 1977; Ring, 1980; van Lommel et al., 2001). The life review often takes the form of a panoramic overview of the NDEr's life that appears to occur all at once, rather than as a temporal sequence of events. Frequently, the life review includes memories that were not consciously remembered before the NDE. The individual often relives the past with the full spectrum of emotions intact, sometimes simultaneously experiencing particular memories (both

pleasant and unpleasant) from the emotional perspective of others with whom they interacted (van Lommel, 2007). This experience seems to provide the individual with a deep understanding of how his or her actions have impacted others, and has a profound effect on the NDEr (Ring, 2000). Because of the experience of timelessness, this experience may feel as though it lasts for hours, even days, yet at the same time, paradoxically, the experiencer is aware that it all happens within a split second. The life review is illustrated by the following quote:

> My whole life so far appeared to be placed before me in a kind of panoramic, three-dimensional review, and each event seemed to be accompanied by an awareness of good and evil or by an insight into its cause and effect. Throughout, I not only saw everything from my own point of view, but I also knew the thoughts of everybody who'd been involved in these events, as if their thoughts were lodged inside me. It meant that I saw not only what I'd done or thought but even how this had affected others, as if I was seeing with all-knowing eyes. And so even your thoughts are apparently not wiped out. And throughout, the review stressed the importance of love. I can't say how long this life review and insight into life lasted; it may have been quite long because it covered every single subject, but at the same time it felt like a split second because I saw everything at once. It seemed as if time and distance didn't exist. I was everywhere at once, and sometimes my attention was focused on something and I was there too. (van Lommel, 2007, p. 36)

Perception of a border

The perception of a border or point of no return is reported by approximately 40% of NDErs (Greyson, 1983, 1985, 1990; Moody, 1975; Schwaninger et al., 2002; van Lommel, 2007). This border can take the form of a gate, wall, bridge or landscape feature such as a valley or river (Ohkado & Greyson, 2014). The individual usually has an implicit understanding that once crossed, he or she will be unable to return to earthly existence (Greyson, 1983). This is often coupled with communication with a spirit of some form (e.g., deceased person or being of light) that advises them it is not yet their time. The decision to return is either made voluntarily or involuntarily, with many individuals claiming they were 'sent back' against their will (Greyson, 1990). A description of encountering a physical border is described below:

> I saw a beautiful white city, with a wall around it and a set of gates facing me. I was so excited, because I wanted to go through those gates. There was a beautiful bright light over the city. I could not go through the gates into the city, but found myself back on the operating table. (Greyson, 1985, p. 394).

The type of border perceived is usually influenced by culture. For example, gates, wall and bridges typically appear in Western NDEs, whilst a river usually appears in Japanese NDEs (Kellehear, 2009).

Return to the body

The return to the body is often unpleasant, painful and accompanied by a deep sense of disappointment, sadness or even anger (Greyson, 1985; Ring, 1980; van Lommel, 2007). NDErs frequently experience the sensation of falling, being sucked back down a tunnel, or being pushed back into their body immediately before regaining consciousness. In contrast to the sense of peace, beauty and comfort the NDEr has experienced, a return to physical existence feels harsh and unpleasant (van Lommel, 2007). Continuing on from the quote above, the patient describes her return to the body:

> My doctor said, "I'm so glad you are back; your husband will be so glad you are back." I was crying as if my heart would break, telling him that I did not want to come back. I begged him to let me go again, it was so beautiful! It was the saddest time of my life, and yet it was the most beautiful! (Greyson, 1985, p. 394)

2.1.2 Measuring NDEs

Early research into NDEs was primarily qualitative and anecdotal. However, when researchers recognised patterns were occurring, ways to quantify the phenomenological experience were sought. Psychologist Kenneth Ring (1980) was the first to develop a psychometric tool for measuring the type and intensity of the experience. After evaluating audio tapes from previous interviews, he created the 'Weighted Core Experience Index' (WCEI). The WCEI included ten features (awareness of being dead, positive emotions, out-of-

body experience, tunnel experience, communication with light, observation of colours, celestial landscape, meeting with deceased persons, life review, presence of border) to which he assigned various weights (e.g., a sense of being dead = 1, feeling of peace = 2, hearing a voice = 3, etc). The higher the weighted score, the 'deeper' the NDE, or relative complexity of the experience.

Because the WCEI was based on subjective impressions of the common features and their designated weights, rather than on statistical analysis of NDE features, Greyson (1983) developed the Near-Death Experience Scale (NDES), incorporating several other characteristics. Based on an iterative statistical analysis of 80 reported NDE features, Greyson (1983) refined the list to 16 items, which a factor analysis grouped into four categories; Cognitive, Affective, Paranormal and Transcendental. The scale is thought to successfully identify a 'core experience' whose "basic structure and semantics are preserved regardless of demographic differences and extreme variation in the intensity of the NDE" (Lange, Greyson, & Houran, 2004, p. 173). Table 2.1 displays the elements belonging in each category.

Table 2.1

Greyson Scale: Elements of the Near Death Experience

Cognitive	**Affective**	**Paranormal**	**Transcendental**
Altered sense of time	Feeling of peace	Out of physical body	Another world
Accelerated thought process	Surrounded by light	Senses more vivid than usual	Encountered beings
Life review	Feeling joy	ESP	Mystical being
Sudden understanding	Cosmic unity/oneness	Visions of the future	Point of no return

Like the WCEI, the NDES enabled researchers to determine the depth of the experience. Importantly, it also enabled researchers to distinguish NDEs from other unusual psychological episodes, including organic brain syndromes such as drug induced experiences, brain trauma, and seizures. Using a scale of 0-32, the Greyson scale indicates a score of 7 or higher as being an NDE. A score of 7 was one standard deviation below the mean score of a criterion sample of NDErs, so using a criterion of 7 points was designed to capture 84% of

"true" NDErs (B. Greyson, personal communication, October 21, 2017). A score below this indicates the participant is unlikely to have experienced an NDE.

Since its development, the NDES has become the most widely used scale adopted by NDE researchers, helping to standardise empirical investigation in the field. It has helped determine both whether an NDE occurred and how deep the experience was, enabling differences (such as subsequent life changes) to be examined between those who have NDEs and those who do not, as well as variance occurring amongst NDErs.

2.1.3 Distressing NDEs

Although the majority of reported experiences are positive and pleasant, approximately 1-2% of NDEs are unpleasant and frightening, sometimes described as 'hellish' (Greyson & Evans Bush, 1992). The accuracy of this figure is somewhat questionable however, as distressing NDEs are often thought to be underreported. Those who experience unpleasant NDEs may feel shame, confusion or guilt about their frightening experience, and may interpret it as a deficit of character or sign of prior wrongdoing (Bush, 2012). Hence, these experiencers may be reluctant to disclose their NDE to others. Despite this cognition, there is no evidence to suggest those who experience distressing NDEs differ from the general population, or those who experience pleasant NDEs (Bush, 2012; Greyson, 2001). Children as young as six have reported terrifying experiences (Bonenfant, 2001), suggesting it is highly unlikely to be a sign of moral deficiency.

Distressing NDEs are usually accompanied by feelings of terror, guilt, panic, despair and loneliness (Bush, 2002, 2012). Despite the difference in content, the general pattern of elements is similar to the positive NDE, for example, out of body experiences, a sense of movement, a transcendent dimension and the encountering of beings (Bonenfant, 2001; Garfield, 1979; Lindley, Bryan, & Conley, 1981).

Why distressing NDEs occur remains unknown, although several theories have been posited. Ring (1994) claims negative NDEs are not 'real' NDEs and only occur when the NDEr resists death and is afraid to let go of their ego identity. Bache (1994, 1996) claims distressing NDEs are a special (but natural) level of consciousness, an encounter with the deepest structure of the psyche. According to this theory, a distressing NDE is simply an

incomplete NDE and given time, will eventually transform into a radiant experience as the individual moves into a higher state of consciousness. Murphy (2001) proposes a physiological explanation, suggesting an overactive left temporal cortex (responsible for negative emotions such as fear, sorrow and dread) may be overshadowing the right temporal context (responsible for positive emotions). All of these theories remain hypotheses however, and there is no empirical data to support these notions.

2.2 NDE Incidence and Correlates

The following section outlines typical circumstances that trigger NDEs, how often NDEs occur, and what type of person has an NDE.

2.2.1`Circumstances triggering NDEs

The most commonly cited circumstance triggering NDEs is cardiac arrest, with 12-18% of patients reporting these types of experiences (Greyson, 2003). Greyson's (2003) prospective study of 1595 cardiac patients found survivors of cardiac arrest were ten times more likely to report NDEs, compared to other cardiac patients, suggesting proximity to death plays an important role. Other typical circumstances include drowning (especially with children), asphyxia, severe illness, traumatic injury, childbirth complications, complications of surgery, and suicide attempts. However, NDEs can be triggered by almost any type of life-threatening event.

As mentioned earlier, NDEs or identical 'NDE-like' subjective episodes can also arise under noncritical conditions, such as extreme psychological stress or physical isolation (e.g., being trapped in a coal mine), during deep meditation, or even spontaneously (Charland-Verville et al., 2014; Facco & Agrillo, 2012; Owens, Cook, & Stevenson, 1990), meaning they are not exclusively associated with death. In this sense, the term "*near-death"* experience is somewhat of a misnomer. Recently, there has been debate over whether "real" (Charland-Verville et al., 2014, p. 490) NDEs (triggered by pathological coma) and NDE-like experiences (no genuine threat to life) should be considered distinct from one another, despite overlap in phenomenology (Charland-Verville et al., 2014; Parnia & Young, 2013). Parnia and Young

(2013) argue the biology of cardiac arrest differs significantly from experiences in which the heart does not stop, hence the two experiences cannot be considered identical. Others maintain NDEs are a unitary phenomenon bound together by shared features. From this point of view the actual physical event, or antecedent cause, is largely irrelevant (Facco, Agrillo & Greyson, 2015; Greyson, 2000).

Currently, perhaps because people who have come close to death are more easily identified, and due to the NDE's implications for consciousness in the absence of brain function, NDEs are most often studied in association with life threatening conditions.

2.2.2 Prevalence and Incidence

Due to improvements in resuscitation techniques over the last few years, NDEs are reported with increasing frequency. Both prevalence and incidence rates have been investigated. Prevalence refers to how many people in the general population report the experience – in this case, it is thought about 4-9% of the general Western population have experienced an NDE (van Lommel, 2007). Incidence refers to how many people report an NDE following survival of a close brush with death. In this case, NDEs are reported by approximately 10-20% of individuals (van Lommel, 2007). Although the incidence rate has varied from study to study, Zingrone and Alvarado (2009) reviewed the existing literature and arrived at an average figure of 35% for retrospective studies, and 17% for prospective. Due to the problem of possible memory distortion over time, many researchers believe that prospective studies may provide the most accurate estimates; however sample bias is also expected to occur. Under-reporting is thought to be common, especially within the hospital environment, and high participant refusal rates are often associated with prospective studies of targeted groups (Green & Freidman, 1983; Pacciolla, 1996). Lack of disclosure has been attributed to physiological determinants such as temporary memory loss after a period of cardiac arrest (e.g., Parnia, Waller, Yeates, & Fenwick, 2001; van Lommel et al., 2001) and social determinants such as fear of ridicule or disbelief (e.g., Duffy & Olson, 2007). Because some features of NDEs are often perceived as inexplicable in accordance to the prevailing scientific paradigm, patients often do not share their experiences due to the negative responses they can receive (Duffin, 2002; Holden, Kinsey, & Moore, 2014; James, 2004; van Lommel, 2011). The situation is further compounded by the extraordinary nature of NDE. The experience

frequently represents a radical departure from everyday conscious reality (with altered perceptions of space/time for example) so individuals may lack a frame of reference for understanding or communicating the experience to others. Experiencers may feel frustrated by the ineffable nature of the NDE, which prevents them from effectively sharing their experience, whilst others have been known to initially question their own sanity, often fearing they have had a psychotic episode (Duffy & Olson, 2007; Greyson, 2005; James, 2004).

2.2.3 What type of person has an NDE?

Studies have measured a number of socio-demographic variables, such as age, gender, socio-economic status, religious orientation, level of education, profession and marital status. Overall, they have found no significant link between these variables and the likelihood of experiencing an NDE, making it difficult to predict who will have an NDE or the type of NDE a person may have (Greyson, 2007; Sabom 1982; van Lommel et al., 2001).

NDEs occur across all ages, although younger people are more likely to report NDEs. Prospective studies reveal a mean age of 22-32 years (van Lommel, 2007), with younger NDErs reporting deeper and more frequent NDEs (Greyson, 2007; Ring, 1980; van Lommel, 2007). Whether younger people are more likely to have NDEs, or simply more willing to acknowledge them, remains unknown. In contrast to adults, NDEs are reported by around 85% of children who suffer cardiac arrest ("Children's Near-Death Experiences," 2017). Children report experiences similar to adults, although they are nearly always accompanied to the light by a spiritual presence (Gabbard & Tremlow, 1984; Steiger, 1995; Sutherland, 1995).

Type of religious belief and level of prior religiosity does not influence the occurrence of NDEs. Christians of all denominations, Muslims, Jews, Hindus, Buddhists, indigenous religious adherents, agnostics and atheists are all equally likely to have an NDE (Carr, 1993; Fenwick & Fenwick, 1995; Pasricha & Stevenson, 1986; Ring, 1980; Sabom, 1982). Although the occurrence of NDEs is not influenced by religious belief, it can affect the interpretation of specific elements. For example, the experience of light may be identified as 'Jesus or God' by Christians, 'Allah' by Muslims, or quite simply, 'a light', by atheists. Very few transgressions of religious boundaries, for example, meeting a god from another religion, have been reported (Roberts & Owen, 1988).

Psychological and personality factors have also been examined. In general, factors such as mental health, substance abuse, and depersonalisation do not appear to influence the likelihood or content of NDEs (Britton & Bootzin, 2004; Gabbard & Twemlow, 1984; Greyson, 2000; Irwin, 1985). Some characteristics such as fantasy proneness, dissociation, history of childhood abuse, surrender to death, psychological absorption and previous psychic experiences have indicated a small positive correlation (Britton & Bootzin, 2004; Gow, Lane, & Chant, 2003; Greyson, 1993; Ring, 1992; Ring & Rosing, 1990; Stevenson, 1980). NDE researchers have concluded these characteristics are associated with the occurrence and presentation of NDEs; however they are unlikely to be a precondition, as many NDErs do not exhibit these traits, and, as they are identified only after the NDE, they may be consequences of the NDE rather than associated preconditions.

The impact of culture has been an important aspect of NDE research. Intercultural studies help identify whether NDEs are culturally specific or a universal phenomenon. To date, the vast majority of empirical research has been conducted amongst white Anglo-European populations, such as the United States, United Kingdom, Australia, Germany, the Netherlands, and more recently, Aotearoa New Zealand, resulting in a remarkedly consistent set of data. Tassell-Matamua and Murray (2014) conducted a large-scale study to examine the subjective experiences of Aotearoa New Zealanders. Using Greyson's NDE scale, the researchers found all the features on the scale were also present in Aotearoa New Zealand NDEs.

By comparison, there is a relative dearth of published non-Western studies, making it difficult to ascertain whether these features are universal. Kellehear (2009) notes that as of 2005, only 16 journal articles describing non-Western NDEs were available. Only a few more have been published since this time. Despite the small number, there is evidence to suggest the phenomenology of NDE is influenced by culture. Available reports suggest Chinese (Kellehear, Heaven & Gao 1990; Zhi-ying & Jian-xun, 1992) Indian (Osis & Haraldsson, 1977; Pasricha & Stevenson, 1986), Tibetan (Bailey, 2001), and Thai (Murphy, 2001) NDEs do not typically feature a tunnel experience, however an OBE, life review, encountering beings, and a supernatural world are consistent features. In the Pacific area, a tunnel experience and life review are noticeably absent from NDEs of indigenous populations (Green, 1984; Kellehear, 2001; King, 1985). Hunter-gatherer societies from Australia (Berndt & Berndt, 1989), North and South America (Schorer, 1985; Wade, 2003), and Africa (Morse & Perry, 1993) have indicated that the experiencer is unlikely to experience a life review or tunnel experience,

although the meeting of beings and visiting another world are common elements. Hence, while NDEs appear to be a global phenomenon, the type of features experienced may vary.

The presentation and interpretation of features is also shaped by cultural background. For example, the presence of a spirit helper to guide the NDEr from one world to the next is a common theme found throughout all NDEs. In Western NDEs this usually takes the form of religious figures (such as Jesus or God), a humanoid spirit guide, or deceased loved one. Conversely, Thai NDEs often feature 'Yamatoots' or spirit messengers sent to escort them to the underworld (Murphy, 2001). In both interpretations, the NDEr appears to have integrated pre-existing cultural belief systems regarding death. Similarly, the transcendental realm described by NDErs often reflects the NDErs actual world. Flowers, landscapes and buildings, for example, are usually those found in the NDErs own culture (Kellehear, 2009).

Although cross-cultural studies suggest the phenomenology of NDE is shaped by culture, inherent issues are apparent in many non-Western reports. Sample sizes are often extremely small, particularly those involving indigenous hunter-gatherer societies – perhaps the culture most removed from Western influence. For example, Green (1984) investigated four cases of NDEs amongst the Chammorro of Guam, Counts (1983) describes three NDE cases among the Kaliai of Western New Britain, and Gomez-Jeria (1993) discusses a single NDE from the Mapuche people in Chile. Many non-Western case studies are also based on existing written or oral historical accounts, rather than first-hand accounts (e.g., Bailey, 2001; Berdnt & Berndt, 1989; Kellehear, 2001; King, 1985; Murphy, 2001; Schorer, 1985). In these cases, it is impossible to ascertain the veracity of the account and the impact of cultural and social variables (such as embellishment over time and/or infusion of religious ideals). Translation of NDE accounts across time/culture/languages may alter some of the original meaning, particularly in cases where a non-native speaker of the language translated the account.

More rigorous studies utilising larger sample groups and first-hand accounts typically have described features analogous to Western accounts. Zhi-ying and Jian-xun, (1992) interviewed 81 survivors of the Chinese Tangshan earthquake, of which 32 reported NDEs. The researchers found most of the features reported in Western accounts were also evident in the Chinese NDEs. A prospective study from Japan found a large percentage of patients described features comparable to Western presentations of NDE (Yamamura, 1998) - a finding corroborated by Ohkado and Greyson (2014) who analysed 12 Japanese case studies. Lai et al.

(2007) assessed the NDEs of 45 Taiwanese dialysis patients using Greyson's NDE Scale and Ring's WCEI. The researchers found the features associated with Western NDEs also occurred in the Taiwanese NDEs, most notably OBEs, feelings of peace, preternaturally vivid sensations and encountering nonphysical entities. A study examining the NDEs of Iranian Shiite Muslims also found they were similar to Western accounts (Ghasemiannejad et al., 2014).

Although the above studies demonstrate strong similarities to Western accounts, one issue is they have focussed on identifying and assessing characteristics associated with Western NDEs (i.e., those measured by the NDE Scale). Whether these experiences represent a 'typical' NDE within the NDErs own culture is difficult to ascertain. By only exploring the incidence of Western type characteristics, researchers may be inadvertently missing other, more culturally unique features.

The variability of reports, limited amount of studies, coupled with the above methodological issues make it difficult to draw conclusions in this area. While some elements may be influenced by culture (e.g., the presence of life review), others may be universal (e.g., the meeting of supernatural beings). In general, most researchers agree there appears to be an underlying core experience (e.g., Belanti, Perera, & Jagadheesan, 2008; Greyson, 2007; Roberts & Owen, 1988). How an individual understands and interprets certain aspects of his or her NDE is likely to be a combination of psychological and sociological factors, in the same way every-day conscious experience - thoughts, beliefs and decisions - are strongly influenced by personal experiences, background and culture. Nevertheless, more research is necessary to address the question of universality.

2.3 Explanatory Models for NDEs

Once dismissed a priori as psychosis or even fabrication, controversy in this area is no longer about whether the NDE is an authentic psychological experience but revolves around likely causal mechanisms. Although the etiology of NDE has yet to be established, several explanatory models have arisen to explain the unusual phenomenon. These theories tend to be divided into three categories – neurophysiological, psychological, or transpersonal.

2.3.1 Neurophysiological Models

Neurophysiological models claim NDEs occur as a result of dysfunctional brain processing. Some of the main scientific explanations currently include cerebral anoxia (Blackmore, 1993; Lempert, Bauer, & Schmidt, 1994; Rodin, 1980), temporal lobe dysfunction (Morse, Venecia, & Milstein, 1989; Saavedra-Aguilar & Gomez-Jeria, 1989), endorphin release as a response to stress (Blackmore, 1993; Carr, 1981; 1982; Saavedra-Aguilar & Gomez-Jeria, 1989), REM intrusion (Britton & Bootzin, 2004; Cheyne, Newby-Clark, & Rueffer, 1999; Facco, 2010; Nelson et al., 2006), hypercarbia (Blackmore, 1996; Jansen, 1997), ketamine (Jansen, 1997; Rogo, 1984) and increased biophoton activity (Bokkon & Salari, 2012). Although an in-depth discussion of each of these explanatory models is outside the scope of the current study, several are described in more detail below.

One popular theory asserts the decreased oxygen (hypoxia) or the complete absence of oxygen to the brain (anoxia) is responsible for NDE. Blackmore (1993), a main proponent of this view, argued that anoxia can induce cortical disinhibition, a release of the normal inhibition leading to excessive random firing of neurons, producing hallucinations typical of NDEs. Evidence for this theory was cited by Lempert, Bauer, and Schmidt (1994), who induced fainting in healthy adults and recorded their experiences. Lempert et al. claimed many reported hallucinations that were comparable to NDEs. However, researchers such as Greyson (2007) have argued the subjective experience of anoxia is quite different. Anoxia or hypoxia tends to produce idiosyncratic and frightening hallucinations often instigating aggressive, belligerent or fearful behaviour afterwards (Blackmore, 1998; Greyson, 2007). Blackmore (1998) studied the occurrence of NDE-like characteristics in 112 children who suffered from reflex anoxic seizures (a syndrome creating temporary states of cerebral anoxia), finding only a few reported experiences akin to NDEs. Often the children were fearful and clingy after the attack and reported terrifying experiences. Blackmore stated, “There were no descriptions of beings of light, of angels, of deceased friends or pets, or of any of the beautiful and inspiring scenes reported in some childhood NDEs” (Blackmore, 1998, p. 116). As Blackmore herself has also conceded, anoxia is not necessary for an NDE to occur. NDEs can also happen when brain function is not compromised (therefore no anoxia takes place), for example, during instances of extreme shock or fear (Blackmore, 1998). Additionally, clinical research into monitored cardiac arrest patients has demonstrated those who have NDEs do not have lower oxygen levels

than people who do not have NDEs, yet also come close to death (Sabom 1982; van Lommel et al., 2001).

The role of naturally produced neurotransmitters has also been considered (Blackmore, 1993; Carr, 1982; Saavedra-Aguilar & Gómez-Jeria, 1989). Carr (1982) proposed the calm, pleasant or blissful sensations associated with NDEs could be accounted for by endorphins released as the person nears death. However, as Greyson (2007) points out, endorphins released in response to stress or pain usually last for hours, quite unlike the brief duration of peace, calm and painlessness experienced by NDErs, sometimes only lasting for seconds. Endorphins are also unable to explain other aspects of NDEs, such as OBEs and bright lights.

Recognising this limitation, Jansen (1989, 1997, 2001) proposed many aspects of NDEs may instead be induced by the dissociative anaesthetic ketamine. Jansen hypothesized that a currently unidentified neuroprotective 'endopsychosins', similar to ketamine, is produced by the brain to prevent neuronal damage, resulting in the NDE. Aside from the fact this hypothetical endogenous neurochemical has not yet been shown to exist, typical ketamine experiences also differ significantly from NDEs. Although ketamine can result in sensations such as being out of the body, travelling through a dark tunnel into light, or encountering God (Jansen, 1997), ketamine usually produces frightening and bizarre imagery that the experiencer understands is not representative of reality (Fenwick, 1997; Strassman, 1997). This contrasts sharply with the noetic quality of NDEs, where experiencers frequently claim that what they experienced was real, or an expression of objective truth. For NDErs, this belief does not diminish over time, conversely it appears to strengthen (Sutherland, 1990; van Lommel et al., 2001).

Another plausible theory purports NDEs are caused by abnormal temporal lobe activity (Britton & Bootzin, 2004; Morse et al., 1989; Saavedra-Aguilar & Gómez-Jeria, 1989). Direct cortical stimulation, or damage to the right temporal lobe is known to produce a number of sensations similar to the features of NDE, such as OBEs, pleasant affective feelings, and memory flashbacks (Blanke et al., 2002, 2004; Penfield, 1955). For example, temporal lobe epileptics often report feelings of bliss and a sense of oneness with the universe just prior to a seizure (French, 2005). Tentatively supporting this theory, Britton and Bootzin (2004) found that individuals reporting NDEs had more temporal-lobe epileptiform electroencephalographic activity than those had not come close to death. However, the study did not compare NDErs

with others who had also come close to death (but with no NDE), so it is impossible to ascertain whether these findings were a result of generalized trauma rather than specifically relating to the NDE itself (French, 2005). Despite purported similarities, Greyson (2007) also argues that electrical stimulation of the temporal lobe produces an experience only vaguely reminiscent of NDEs. Instead, temporal lobe stimulation typically results in dream-like imagery, fragmented and bizarre music or sounds, isolated and repetitive scenes that seemed familiar, and the experience of fear or other negative emotions.

Most of the proposed explanations are based on analogies to other situations in nonNDErs and on theoretical speculation, without any empirical study of the proposed mechanisms in NDErs themselves. Furthermore, these theories only offer an explanation for certain aspects of the experience. No one explanatory model has been able to explain the totality of the experience. For example, cerebral anoxia may explain the tunnel effect; biophotons - the appearance of brilliant lights; endorphins – the feeling of tranquillity, but a single mechanistic brain-based theory has yet to be found. In other words, each theory may describe the dots, but an overarching biological model that connects the dots has yet to be established. Additionally, some aspects such as the consistent experience of extreme lucidity when brain function is absent or seriously compromised, have yet to be explained.

It is also important to note that although these models may correctly describe the underlying biological processes of the dying brain, they do not necessarily imply causation (Greyson, 2007). Just as when we perceive something to be amusing, our diaphragm contracts and we laugh, it would be incorrect to claim the contracting diaphragm is the cause of the laughter. Instead, it is the biological correlate or physical mediator of the amusing situation.

Finally, NDEs are not restricted to situations of impaired brain functioning. Recent studies have examined the clinical presentation of NDEs, prompted by both life-threatening and non-life-threatening circumstances (often referred to as “NDE-like” episodes), finding no difference in content or intensity of features (Charland-Verville et al., 2014; Facco & Agrillo, 2012). This suggests that physiological impairment is not a prerequisite, and that a broader interpretation of NDEs is required.

2.3.2 Psychological Models

Psychological models typically suggest that NDEs are produced by the mind as a type of defence mechanism against the fear of dying. Proponents of the 'expectancy hypothesis' argue NDEs, triggered by a life-threatening episode, are hallucinations based around personal and cultural expectations of the dying process (Blackmore & Troscianko, 1988; Britton & Bootzin, 2004). Inconsistencies in reports of NDE features across cultures, such as the lack of a life review or tunnel sensation, is seen as support for this theory (Ehrenwald, 1974; Noyes & Kletti, 1976; Pasricha & Stevenson, 1986).

However, research has shown that afterlife expectation and previous belief does not play a role in the occurrence of an NDE. Atheists, children too young to have developed any concept of death, and those with no prior knowledge of NDEs, are equally likely to have an NDE (Gibbs, 1997; Greyson, 1991; Ring, 1984; Sabom, 1982; Sutherland, 1995). In 1975, Moody's book popularised the notion of NDE and knowledge of NDEs has since become widespread, yet a review of case-studies before and after 1975 found the incidence and elements of NDEs were similar (Athappilly, Greyson, & Stevenson, 2006). Often, the NDE differs from what the individual expected would happen. Kellehear and Irwin (1990) asked a sample of 508 individuals from the general population about their beliefs and expectations after death. They found the vast majority of individuals either thought nothing would happen, or held stereotypical religious views, often citing biblical imagery. When asked to describe what they expect will happen for the first 5 minutes after death, only a very small minority (6%) outlined an experience similar to the phenomenology of NDEs.

NDEs also occur when there has been an unexpected and sudden close brush with death, such as an accident or cardiac arrest. In many cases, the individual is not even aware that they have been in a life-threatening situation until they regain consciousness (Greyson, 2003; van Lommel, 2007). In these cases, it seems unlikely the individual would have had time to realise the gravity of the situation and construct a defensive hallucination in response. Again, there are also many reported cases of NDEs triggered by non-life-threatening situations, such as depression, stress or isolation (Charland-Verville et al., 2014; Gabbard & Tremlow 1991; Owens, Cook, & Stevenson, 1990). In these cases, the individual is normal in terms of physical health, and not expecting to encounter any imminent danger (Facco & Agrillo, 2012; Facco, Agrillo, & Greyson, 2015).

Other psychological theories include depersonalisation: a sense of separation from self, resulting from loss of identity (Noyes & Kletti, 1976); dissociation: the disruption of identity triggers a defence mechanism to evade the emotional trauma of personal death (Irwin, 1993); birth memory: memories from birth are triggered by the similarity of the experience – for example, moving through a dark tunnel (Sagan 1979); and false memory syndrome: the mind's attempt to make sense of an unusual cognitive experience (Mobbs & Watt, 2011). To date, there is little or no evidence to support these theories, and in some cases, there is evidence to refute them. For example, Sagan's birth-memory model has been rebutted by Blackmore (1982) and Becker (1982) who both claim the birth canal has no resemblance to a tunnel with a light at the end, and the top of the foetus's head usually emerges first, rather than its eyes. Blackmore (1982) also carried out a survey of 254 NDErs, of whom 36 were born by caesarean section (thus, have never travelled along the birth canal). She found those born by caesarean section were equally likely to report tunnel experiences as those who were not (36% in each case), which casts significant doubt upon the birth-memory model.

2.3.3 Transpersonal Models

Transpersonal or non-reductionistic theories claim NDEs support the concept of 'nonlocal mind' or the continuity of consciousness when the physical body is impaired (Facco & Agrillo, 2012; Fenwick, 2012; Greyson 2010, 2015; Mays & Mays, 2015; van Lommel, 2011, 2013). These models surmise consciousness can operate independently from the neural substrate of brain and cannot be simply reduced to biologically based brain activity - a concept often embraced by NDErs themselves (Greyson, 1998; Tassell-Matamua & Murray, 2014), and an increasing number of NDE researchers (Facco & Agrillo, 2012; Fenwick, 2012; Greyson, 2010, 2015; Mays & Mays, 2015; van Lommel, 2011, 2013). These authors claim biological and psychological models are unable to account for more unusual aspects of NDEs, such as veridical out-of-body experiences, and enhanced thought processes when the brain is critically impaired.

Apparent Veridical Perception. One of the most challenging issues faced by researchers is an explanation for seemingly accurate out-of-body perceptions. NDErs often describe procedures or events that they should not, or could not have known about from the actual location and condition of their physical bodies (Greyson, 2010; Jourdan, 2006; Lai et al.,

2007; Parnia et al., 2014; Ring, 1980; Ring & Valarino, 1997; Sabom, 1998; van Lommel et al., 2001). These incidences are known as apparently non-physical veridical perception (AVP), and are often cited as evidence for transpersonal theory, or the prospect of the mind operating independently from the body. Holden (2009) describes veridical NDE perception as "any perception – visual, auditory, kinaesthetic, olfactory, and so on – that a person reports having experienced during one's NDE and that is later corroborated as having corresponded to material consensus reality" (p. 186).

One of the most well-known cases of AVP was reported by Pamela Reynolds (Sabom, 1998). Reynolds underwent 'hypothermic cardiac arrest', an innovative surgical procedure that lowers the body temperature to 17 degrees Celsius, suspends heartbeat and breathing, and drains blood from the brain, for the purposes of brain surgery. During this time, the patient is considered 'clinically dead'. Reynold's eyes were taped shut and moulded earplugs emitting loud 90-100 decibel clicks (as loud as a lawn mower) at a rate of 11 to 33 clicks per second were fitted into her ears as a test for auditory and brain-stem reflexes. During the procedure, Reynolds had a detailed and vivid NDE. She reported many objectively verified aspects of the surgery, including accurately describing the cranial saw used to cut through her skull, the way her head was shaved, a procedure taking place in the groin area, a conversation about her blood vessels being too small, and a song playing on the radio.

The 'reality' of AVP is highly controversial. Critics claim such instances are largely unsubstantiated, uncontrolled reports lacking scientific rigour. In short, opponents of apparent veridical perception (AVP) believe these cases amount to nothing more than uncorroborated hearsay. However, Holden (2009) examined 107 AVP accounts from 39 sources in the literature, finding 47 cases were able to be corroborated by objective sources (e.g., medical personnel or medical records), of which 41 were completely accurate and only 2 were erroneous (the remaining 4 cases being partially accurate). Sceptics also argue that a combination of psychological and physiological factors can account for these experiences (Augustine 2006; Blackmore, 1993; Woerlee, 2004). They claim the brain can retrospectively reconstruct an accurate perception of material reality through a combination of lucky guesses, objects glimpsed before becoming unconscious, prior knowledge, and information received through limited sensory input. These authors propose the brain can mentally construct an image from whatever limited senses may still be in operation. For example, in the case of Pam Reynolds, the sound of high pitched drilling may conjure up an image of a dentist's drill, or

snippets of conversation may be received through still functioning auditory pathways (Augustine, 2007; Woerlee, 2004).

Perhaps counter to these theories, Sabom (1982) asked NDE and nonNDE patients to imagine and describe in detail what their resuscitation would have looked like. He found that in comparison to the NDE group, 80% of the nonNDErs accounts were inaccurate, vague and contained many errors. By contrast, NDErs descriptions of the resuscitation procedure were highly accurate and contained specific details verified by medical records. A similar study was later conducted by Satori (2004), who interviewed both NDE and nonNDE patients in a five-year hospital based prospective study. She also compared the reports of NDErs who had an OBE with NDErs who did not report an OBE, finding those who had an OBE provided more accurate descriptions of the medical personnel and procedures.

These theories also fail to account for the OBEs of individuals who have accurately recalled conversations, events or objects outside of the experiencer's immediate vicinity (Clark, 1984; Cook, Greyson, & Stevenson 1998; Kelly, Greyson, & Stevenson, 2000; Owens, 1995). In these cases, it is extremely unlikely the experiencer would have access to this information through ordinary sensory channels.

Although much remains to be investigated, many NDE researchers have concluded the sheer number of seemingly accurate reports from various sources implies they are unlikely to be mere hallucination, fabrication or lucky guesses (Greyson, 2010; Holden, 2009; Ring & Valarino, 1998). Additionally, the experience of clear, lucid thought in the absence of brain activity presents a further conundrum (Greyson, 2010; Parnia & Fenwick, 2002). As Parnia and Fenwick (2002) summarise:

> The occurrence of lucid, well-structured thought processes together with reasoning, attention and memory recall of specific events during a cardiac arrest (NDE) raise a number of interesting and perplexing questions regarding how such experiences could arise. These experiences appear to be occurring at a time when cerebral function can be described at best as severely impaired, and at worst absent. (p.8)

After decades of studying the phenomenon, Greyson claims NDEs significantly challenge the concept of materialist reductionism. Greyson calls for a revised post-material

psychology that explains consciousness using 21st century quantum physics, rather than outdated classical physics models (Greyson, 2010). Greyson explains:

> This conflict between a materialist model of brain–mind identity and the occurrence of NDEs under conditions of general anesthesia or cardiac arrest is profound and inescapable. Only when we expand models of mind to accommodate extraordinary experiences such as NDEs will we progress in our understanding of consciousness and its relation to brain (p. 43).

Cardiologist, van Lommel (2011, 2013) is another leading researcher unconvinced by biologically based explanations for NDEs. In contrast to secular scientific thought that regards consciousness as a by-product of the brain, van Lommel suggests the brain may instead act as a receiver to a nonlocal, or universal source of consciousness that exists beyond, but also encompasses the physical body (van Lommel, 2011, 2013). Much like the gravitational field, it is not directly demonstrable, but the physical effects can be measured. An analogy is the internet. The 'hardware', or computer is tuned to receive and interface with an internet signal transmitted via an electromagnetic field. However, the signal does not originate within the computer. When the computer breaks or no longer functions (analogous to brain death), the internet and electro-magnetic field remains.

Although this concept may seem far-fetched to many, the idea that consciousness is a fundamental property of the universe is finding increasing experimental support and is thought to represent an emerging paradigm shift with science (Schwartz, 2015). Schwartz (2015), an author tracking emerging global trends, claims whilst still a minority position, a definite trend towards non-locality is observable across many scientific disciplines, ranging from medicine to biology to physics. Within the field of relativistic and quantum physics alone, new theories of consciousness are being continually developed that support the concept of nonlocal mind (Hameroff, 1997; Hameroff & Penrose, 2006, 2014; Jourdan 2011; Nakagomi, 2003; Persinger & Koren, 2007; Smith, 2006, 2009; Ventegodt et al., 2006). For example, Hameroff and Penrose (2006, 2014) propose that consciousness is stored as quantum vibrations within the microtubules of the brain cells. Upon death, this information is released from the microtubules and dissipates into the universe, giving rise to the psychological characteristics typical of NDEs. These revolutionary new theories are prompting many to reappraise the nature of consciousness, viewing NDEs as evidence of transpersonal phenomena rather than

psychological or physical dysfunction (Facco & Agrillo, 2012; Fenwick, 2012; Greyson, 2010, 2015; Mays & Mays, 2015; van Lommel, 2011, 2013).

2.4 Summary

NDEs are anomalous and frequently profound psychological experiences that typically occur on the threshold of death or under conditions of extreme psychological or physical stress. The conscious experience of an NDE usually deviates from accepted norms of objective reality and features elements such as an altered perception of time and space, intense positive affect, an out-of-body experience, encountering nonphysical entities, communication and absorption into a bright light, a life review, and a decision to return to the body.

Research shows these experiences are, in theory, available to anyone, making it difficult to predict who will have an NDE. Around 10-20% of people who come close to death will experience an episode like this, regardless of religious belief, previous expectations about death, or any other demographic variable. Although culture and religion do not affect the occurrence of NDEs, they can affect the presentation and interpretation of the experience.

Despite considerable research into potential causal mechanisms, the etiology of NDE remains unclear and is subject to on-going debate. Physiological explanations that postulate NDEs are caused by neurophysiological dysfunction have received the most attention in the scientific literature, however these explanations remain problematic, not least because NDEs are also known to occur under conditions of normal physical and mental health. Recent advances in other scientific disciplines, namely quantum physics, have prompted many leading NDE researchers to consider alternative, non-reductionistic models for explaining NDEs.

Chapter 3.

Aftereffects of NDEs

> *After the NDE, value changes came. I felt that the materialism and external stuff that was a big focus before just didn't matter anymore. My priorities in life took a complete turnaround. I felt there was a purpose for my life, even down to the smallest detail of being kind to others spontaneously and freely, loving more deeply, [and] being non-judgemental and accepting of one's self and others. I also got a strong message about the importance of always seeking knowledge. I no longer fear death and, in fact, will welcome it when it is the right time – and that's only for the universal, supreme power to decide. Until then, though, I try to enjoy each day like it's my last and live more consciously in the moment.* (Ring & Valarino, 1998, p. 30)

Despite lack of consensus about the etiology of NDEs, researchers agree these events often have a transformative quality, impacting the experiencer's life in many ways. This chapter will review the most common psychological aftereffects of NDEs, namely changes in values, attitudes, beliefs and behaviour. Although literature has tended to focus on the positive, life enhancing effects of NDEs, this chapter will also explore the negative consequences of such experiences. Although a changed attitude towards death is perhaps the most commonly observed aftereffect of an NDE, as the central focus of this study, this aspect will be discussed in chapter four.

3.1 The Emergence of a Pattern

The idea that NDEs were life-changing was first emphasised by Moody (1975), who observed "There is a remarkable agreement in the "lessons," as it were, which have been brought back from these close encounters with death" (p.86). The NDErs he interviewed felt

their lives were broadened and deepened by their experience. They were more reflective and philosophical, had an increased appreciation for life, a thirst for learning and knowledge, were more compassionate, loving and tolerant towards others, more intuitive, and no longer feared death. In the years following Moody's original literary account, numerous studies have continued to investigate the aftereffects of NDEs, corroborating and extending Moody's initial findings (e.g., Greyson & Stevenson, 1980; Groth-Marnat & Summers, 1998; Noyes, 1980; Ring, 1980; Schwaninger et al., 2002; Sutherland, 1992; van Lommel, et al., 2001).

Presently, a host of literature attests to the commonly reported aftereffects of NDEs; much of which will be discussed in sections 3.3 to 3.5 of this chapter. Prior to these discussions, an overview of how NDE aftereffects are measured will be given.

3.2 Measuring NDE Aftereffects

Initially, data relating to the transformative nature of NDEs was anecdotal and qualitative (Greyson & Stevenson, 1980; Moody, 1975; Noyes, 1980; Ring, 1980). For example, much valuable information about NDE aftereffects was gathered by Ring (1980), who interviewed 102 survivors of near-death crises and documented how the experience impacted their lives. Rings' retrospective qualitative study consisted of a structured interview that investigated commonly reported NDE features, prior religiousness, and the nature of changes following NDEs. Participants spoke of personal and value changes that include a changed attitude toward others, life, death, and a sense of personal renewal. Like Moody (1975), Ring concluded that NDEs result in a consistent pattern of aftereffects, claiming his participants seemed to share a "*common psychological profile* afterward" (Ring & Valarino, 1998, p.123).

Although subsequent qualitative studies reported similar findings (Fenwick & Fenwick, 1995; Green & Friedman, 1983; Hoffman, 1995a; Orne, 1995; Sutherland, 1990), many (including Ring's abovementioned study) suffered from certain methodological limitations. They often relied on the retrospective accounts of volunteers, or self-selected samples, meaning only those who believed they had been changed by their experience (or had changed) were likely to be overrepresented. Comparison groups were lacking, so it was unclear how and whether NDErs differed from others who came close to death, but with no NDE. No pre-NDE measures were used, making it difficult to determine what personality traits were evident prior to the NDE. A possible exception to this was Sutherland's (1989, 1990, 1992) study of 50

Australian NDErs recruited from a variety of sources (e.g., contacts collected in response to talks, media interviews, published articles). Using a semi-structured interview format, Sutherland sought to identify themes about NDEs and their aftereffects. For purposes of comparison, Sutherland asked about attitudes and beliefs prior to the NDE. The 'before' findings were then compared against existing studies of specific traits/attitudes (e.g., spiritual beliefs) reported in general populations (United States, Great Britain, Australia and Sweden) to determine whether NDErs could be considered 'normal' beforehand. Although Sutherland took a more rigorous approach, a notable shortcoming of this strategy was that it relied solely on self-assessment. Asking participants to compare themselves before and after an NDE is likely prone to social desirability or halo bias (Noyes et al., 2009).

Given its spontaneous and unpredictable nature, accurately measuring values, attitudes and behaviour *before* an NDE is extremely difficult. Instead, the most effective way of assessing change has been to compare those who have had NDEs with those who have not, yet have also come close to death. The first attempt to do so was initiated by Ring (1984), who developed the Life Changes Questionnaire (LCQ) to quantify changes in attitudes and values following NDEs. Based on Ring's previous interviews with NDErs, the Likert type scale was initially composed of 42 items related to five types of value changes (known as value clusters):

1. *concern for others (*e.g., the desire to help others, compassion for others)
2. *appreciation for life* (e.g., appreciation of ordinary things and of nature)
3. *concern with impressing others* (e.g., desire to make a good impression, desire to be well-known)
4. *quest for meaning* (e.g., sense of purpose, belief that life has inner meaning), and
5. *materialism* (e.g., desire for high standard of living, material success).

Over the years, additional items were added as more NDErs were interviewed (by a variety of researchers), and more aftereffects were identified. Five further value clusters were added:

6. *self-acceptance* (e.g., feelings of self-worth, self-understanding)
7. *religiousness* (e.g., religious feelings, interest in organised religion)
8. *appreciation for death* (e.g., conviction there is life after death, fear of death),
9. *spirituality* (e.g., belief in a higher power, desire to achieve a higher consciousness)
10. *social/planetary issues* (e.g., concern with ecological matter, interest in politics).

The LCQ eventually came to be known as the Life Changes Index (LCI). The LCI and its later revision, the LCI-R (Greyson & Ring, 2004), currently remains the most widely used assessment tool for measuring the aftereffects of NDEs. Unfortunately, no psychometric analysis of the scale has ever been published, hence there is no available data on norms, reliability, or validity. Although this potentially raises questions about the robustness of findings, it has proven useful for validating qualitative findings and surveying larger groups of people. Perhaps most importantly, use of the LCI alongside the NDE Scale, has allowed researchers to identify significant differences between NDErs and nonNDErs (e.g., Groth-Marnat & Summers, 1998; Schwaninger et al., 2002; van Lommel et al., 2001).

Prospective studies using the LCI have made a particularly important contribution to the field. As Sabom (1998) notes, many retrospective studies are composed of highly self-selected participants, often repeatedly drawn from the same pool of individuals, hence samples are non-random and relatively small. Prospective methodologies using random samples have helped counter some of these limitations. The most well-regarded is a longitudinal study conducted by van Lommel and colleagues (2001). In their assessment of 344 Dutch cardiac arrest survivors, the researchers measured life changes using the LCI, both two and eight-years after the patients' successful resuscitation. Documenting changes between two groups of survivors - those who had an NDE (n = 62), and those who did not (n = 282) – a two-year follow-up demonstrated the NDE group (matched for age, gender, and time since cardiac arrest from patients who had not had NDEs) self-reported significantly more life changes than the nonNDE group. These changes were even more pronounced after eight years for the NDE group. In comparison, many of the life changes for the nonNDE group remained static or had only slightly increased.

A smaller hospital based prospective study was conducted by Schwaninger, Eisenberg, Schechtman and Weiss (2002), evaluating the life changes of 30 American cardiac arrest patients. The researchers assessed all surviving patients over a period of three years. Out of 30 patients who were interviewed, seven (23%) had an NDE, and four others (13%) reported NDEs from a previous life-threatening event. The researchers interviewed patients 24 hours after their cardiac arrest, and again at a six-month follow-up. Using the LCQ (Ring, 1984), they found significant differences in the types of psychosocial life changes reported by NDErs and nonNDErs. A similar study using the LCQ was more recently conducted in Slovenia (Klemenc-Ketis, 2013) examining the life changes amongst 37 patients six months after their

out-of-hospital cardiac arrest. The seven (18.9%) participants who had NDEs expressed significantly greater life changes. By comparison, the researcher noted other cardiac arrest survivors (without NDE) did not express extensive changes.

Before outlining the aftereffects in more detail, one further study is also worthy of mention. Although literature suggests NDErs undergo significant life changes following their NDE, most studies are based entirely on subjective impressions of change. Little to no data has been conducted from an objective perspective, meaning it is difficult to know whether the NDEr has actually changed, or simply *thinks* they have. Groth-Marnat and Summers (1998) sought to address this concern by comparing the LCI scores of 53 NDErs with 27 nonNDErs who reported similar life-threatening incidents. Although both groups cited positive life changes after their experience, the magnitude of change was far greater amongst the NDE group ($p < .001$), with deeper experiences positively correlated with greater levels of change. Additionally, changes reported by NDErs were objectively verified by those closely associated with the experiencer. Using a modified version of the LCI, a group of 45 significant others (parent, spouses or children) were asked to independently rate the participants in both groups (26 for the NDE group, and 19 in the control (nonNDE) group). Moderate to high positive correlations were found between the NDErs scores on the LCI and those provided by significant others ($r = .75$). Similar to previous researchers, Groth-Marnat and Summers surmised the NDE itself appeared responsible for change, rather than simply the exposure to a life-threatening situation. Moreover, this transformation appeared to reflect genuine change and was not contrived or exaggerated on behalf of the experiencer.

In addition to globalised or general measures of life change, such as the LCI, psychometric tools for assessing certain traits, beliefs and attitudes have also been utilised, finding significant differences between NDErs and nonNDErs. These findings will also be described below, where applicable.

3.3 Types of Aftereffects

As noted above, existing literature attests to a consistent pattern of psychological aftereffects post-NDE. Table 3.1 summarises the most frequently reported aftereffects with some of the most typical explained in more detail below.

Table 3.1

Psychological Aftereffects of Near-Death Experiences

Loss of fear of death	Increased self-esteem
Appreciation for, or zest for, life	Appreciation for nature
More present focused (living in the moment)	Decreased interest in social status
More compassionate/loving	Appreciation for ordinary things
Interest in helping others	Heightened spirituality
Less materialistic	Changes in religious orientation
Less competitive	Concern with spiritual matters
Less interest in others' opinions	Increased belief in life after death
Thirst for knowledge	Sense of inner meaning in life
Mood swings (bouts of depression)	Sense of purpose or mission
More family oriented	Feeling especially favoured by God or other
Increased self-acceptance	supernatural force
Psychic ability	

3.3.1 Concern toward others

NDErs are described as having a heightened sense of compassion, empathy, patience, tolerance, as well as increased desire to help others after their NDEs (e.g., Flynn, 1982, 1986; Furn, 1987; Klemenc-Ketis, 2013; Morris & Knafl, 2003; Ring, 1980, 1985a; Sabom, 1982, 1998; Sutherland, 1992; Schwaninger et al., 2002). Moody (1975) first described this aftereffect, stating "Almost everyone has stressed the importance in this life of trying to cultivate love for others, a love of a unique and profound kind" (p.86). Other authors later echoed this sentiment, for example, Ring (1980) after interviewing 102 survivors of near-death crises, commented on the significant change in interpersonal values:

> …if there was a single value which seemed to epitomize the comments of near-death survivors in this respect, it was their increased emphasis on the need for unconditional love or acceptance for others… (p.4)

From a quantitative perspective, empirical studies have reported statistical differences between those who had NDEs and those who did not, yet also came close to death. Groth-Marnat and Summers (1998) in their study examining the altered beliefs and behaviours of 53 NDErs, found one of the biggest differences was a heightened concern about the welfare of others (p <.001). In comparison to the 27 nonNDErs, the NDE group was significantly more likely to express greater tolerance, patience and understanding towards other people, with their loved ones mostly corroborating the degree of change. Schwaninger et al. (2002) found six months after their cardiac arrest, the NDErs reported an increased ability to listen to, understand and help others, a heightened tolerance for others, and a greatly increased ability to express love towards others. The NDErs also felt they had greater insight into the problems of others. Klemenc-Ketis (2013) also found participants who had NDEs expressed significantly more tolerance for others as a result.

3.3.2 Appreciation for life

After NDEs, many people have an increased reverence and respect for life (Gallagher, 1982; Flynn, 1986; Klemenc-Ketis, 2013; Manley, 1996; Ring, 1980, 1984; Schwaninger et al., 2002). As Noyes et al. (2009) explain, this change is often expressed as a renewed zest for life and a heightened ability to live more fully in the moment. NDErs often develop an appreciation for ordinary everyday things they had previously overlooked, and an ability to find pleasure in the mundane (Ring & Valarino, 1998). An example of this characteristic is provided by Wren-Lewis (1994), a mathematical physicist and humanist psychologist who had an NDE in 1983:

> …perhaps my greatest astonishment has come in observing how the new consciousness transforms even experiences I formerly found downright ugly or unpleasant. It began when I discovered myself positively enjoying foods and music I'd hated before, and appreciating real beauty in dirty industrial sites… Experiences I formerly put up with as second-best, or as necessary chores, I now find every bit as good in their own way as the things my body-mind habitually prefers. (p.111)

Van Lommel et al. (2001) found one of the most significant changes among NDErs was an increased appreciation of ordinary things, with 84% reporting positive change in this area after eight years. The percentage of those showing positive change was nearly double that of the nonNDE group. In addition to a reverence for life in general, this appreciation of life

extends to animals and nature (Flynn, 1986; Klemenc-Ketis, 2013; Ring, 1980, 1984; Schwaninger et al., 2002). In their prospective studies, Schwaninger et al. (2002) and Klemenc-Ketis (2013) participants' expressed a significantly increased appreciation of nature when interviewed six months after their NDE.

3.3.3 Purpose in life

A new or heightened sense of purpose in life can manifest in a variety of ways. NDErs often feel they have been brought back to life for a reason, and have some kind of mission to fulfil, even if they are unsure what that might be (Noyes et al., 2009).

Musgrave (1997) reported that 73% of the 51 NDE participants surveyed in her retrospective study claimed their NDE led them to discover their life purpose. In their prospective studies, van Lommel et al. (2001) and Schwaninger et al. (2002) found NDErs were significantly more likely than nonNDErs to feel as though their life has a purpose ($p<.020$, and $p<.002$, respectively). The NDE participants in both studies also reported a greater sense of inner meaning in life, a finding also cited by Klemenc-Ketis (2013).

Bauer (1985) administered the Life Attitude Profile (Reker & Peacock, 1981) to 28 individuals who had NDEs. The questionnaire measured seven categories of change relating to core existential attitudes and beliefs: Life Purpose, Existential Vacuum, Life Control, Will to Meaning, Future Meaning to Fulfil, Death Acceptance, and Goal Seeking. Each item ascertained whether the individual was living as they desired, whether they felt their life lacked meaning, and their level of belief in a meaningful existence. Participants rated their attitude toward each item on the questionnaire after their NDE, and their perceived attitude before their NDE. Bauer found NDErs exhibited significant levels of change in nearly all areas, particularly in the categories of death acceptance, increased life purpose and will to meaning. The only category that showed no significant positive change was Goal Seeking. In keeping with previous studies, Bauer concluded NDEs do appear to have a beneficial impact on the individual's outlook and approach to life.

Interestingly, although NDErs typically report an increased appreciation for life as well as a greater sense of inner meaning and purpose in life, they may not have greater life satisfaction. A study conducted by Greyson (1994) found NDErs did not report more

satisfaction with life than controls. Greyson administered the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) to 126 individuals who had NDEs, 40 who did not (but also came close to death), and 109 who had never been close to death. No statistical differences were found between the three groups, and the level of satisfaction was also uninfluenced by depth or type of NDE. Greyson reflected that for many NDErs, the problems readjusting to life after an NDE may offset any positive, life enhancing effects. Alternatively, NDErs and nonNDErs may judge their current satisfaction by different criterion. NonNDErs may compare their current situation to an idealized earthly life that differs from their current situation only in small details. On the other hand, NDErs may compare their current situation to the transcendent realm experienced during the NDE, by which criterion few would say they were 'satisfied' with their current life (Greyson, 1996).

3.3.4 Self-acceptance

Most sources agree NDErs display heightened self-esteem, a greater understanding of oneself, and decreased concern for other's opinions following their experience (Bauer, 1985; Flynn, 1986; Furn, 1987; Groth-Marnat & Summers, 1998; Noyes, 1980; Ring, 1984; Ring & Rosing, 1990; Schwaninger et al., 2002; Sutherland, 1990). For example, Ring and Rosing (1990) found NDErs were significantly more likely ($p < .05$) than nonNDErs to report increased levels of self-acceptance and had less concern for impressing others. Similarly, Sutherland (1990, 2002) in her qualitative study of 50 NDErs, found 41 reported an increase in self-worth. Participants expressed increased self-confidence, inner strength and had lesser concern with respect to other's opinions. Participants also reported a sense of inner peace and an increased level of self-awareness. Sutherland noted they also had made healthy changes in their lifestyles that reflected these new values. They had decreased their use of addictive substances (such as cigarettes and alcohol), watched less television, and physically exercised more.

3.3.5 Spiritual changes

NDEs often lead to revised or enhanced spirituality (the inner search for meaning that recognises a transcendent or sacred dimension of reality), an effect not influenced by previous religious orientation or degree of religiosity (Greyson, 2006; Khanna & Greyson, 2013;

McLaughlin & Malony, 1984; Ring, 1980; Sutherland, 1990). The majority of studies have found participants experience an inward spiritual transformation, rather than an increase in outward manifestations of religious faith or increased belief in organised religion (Fenwick & Fenwick, 1995; Flynn, 1986; Grey, 1985; Musgrave, 1997; Ring, 1984; Sutherland, 1990).

In a series of semi-structured interviews, Sutherland (1990) examined self-reported changes in religious beliefs, attitudes, and activities amongst a sample of 50 Australian NDErs. For purposes of comparison, she assessed religious persuasion before the NDE against a sample from the general population (Australian Values Study Survey; Roy Morgan Research Centre, 1983), ruling out the possibility they were unusually religious or spiritually inclined beforehand. Sutherland found none of her respondents described their experience as religious (despite 24% describing themselves as religious before the event), and often rejected this label "vehemently" (p.23). Instead, 76% perceived their NDE as primarily a spiritual experience. In terms of religious and spiritual activities, NDErs demonstrated a shift away from organized religion and church attendance towards private informal prayer, meditation, and a personal quest for inner meaning.

Similarly, Musgrave (1997) surveyed the attitudes, beliefs, and behaviour of 51 individuals following their NDE, reporting major changes in the areas of formalized religious belief and practice. The majority (80%) had become more spiritually oriented and religiously open. Absolute belief in God, or a higher power, had increased from 24% to 82% after the NDE; however this change represented an inner spiritual connection, rather than strengthened religious practice and belief. Sixty five percent claimed they now believed there were many paths to God, and results showed affiliation with the traditional denominations had declined. This increased religious tolerance and openness was also described by Ring (1980) in his interviews with 102 survivors of near-death crises:

> [there is] an overall tolerance for all ways or religious worship. From this point of view, there is no one religion or religious denomination which is superior or "true"; rather, all religions are expression of a single truth. (Ring, 1980, p.4)

Fenwick and Fenwick (1995) collected 350 participant responses to a comprehensive questionnaire about their NDE and the effect it had on their lives. A majority 72% of participants reported having been changed by their experience, with 42% claiming they felt more spiritual as a result. The researchers noted that due to the often ineffable and

incomprehensible nature of NDEs, many struggled to interpret their experience within their traditional belief systems, and often had to modify their beliefs to find some meaning in the event. Kellehear (1996) agreed that NDErs do not necessarily completely abandon their existing beliefs, but often find more meaning in alternative philosophies such as Buddhism, spiritualism, meditation or more secular philosophies.

A number of authors, such as Greyson (2006), have proposed the life changes following NDEs appear to meet the definition of a spiritual transformation, defined as "a dramatic change in religious belief, attitude, and behaviour that occurs over a relatively short period of time" (Schwartz, 2000, p.4). Khanna and Greyson (2014) formally measured this proposition, by assessing the level of spiritual transformation among 206 NDErs and 24 survivors of life-threatening situations with no NDE. The self-selected participants completed the Spiritual Transformation Scale (STS; Cole, Hopkins, Tisak, Steel, & Carr, 2008), a 40 item Likert scale that measures both Spiritual Growth and Spiritual Decline using nontheistic terminology. Spiritual Growth refers to a "stronger spiritual orientation related to world view, goals, sense of self, and relationships", and Spiritual Decline refers to a "loss or weakening of spiritual association within these domains" (p.47). NDErs were significantly more likely than nonNDErs to report Spiritual Growth ($p < .001$), with the degree of spiritual growth positively correlated with the depth of the NDE. Results did not differ statistically between the two groups for the subscale of Spiritual Decline, suggesting NDEs have a predominantly positive effect on the experiencer.

Greyson and Khanna (2013) also investigated spiritual wellbeing amongst a group of 224 individuals who had come close to death (203 had NDEs (as measured by the NDE scale) and 21 did not have NDEs). Spiritual wellbeing was defined as the "degree to which a person perceives or derives a sense of well-being from spiritual attitudes and strivings" (p.1607), and measured using the 20-item Spiritual Well-Being Scale (SWBS; Paloutzian & Ellison, 1982), containing items related to both religious, spiritual and existential expressions of wellbeing. Of this sample, overall scores on the SWBS were significantly higher among participants who reported NDEs than those who did not, and NDE depth was positively correlated to the level of wellbeing. Taken together with previous research, Khanna and Greyson suggested that NDEs do indeed operate as a powerful form of, or vehicle for, spiritual awakening.

3.3.6 Belief in life after death

In terms of post-mortem beliefs, Ring and Valarino (1998) asserted most NDErs "become convinced that some form of sustained conscious existence awaits them following the death of the body" (p. 127). Studies, both prospective and retrospective, have provided empirical support for this claim. Musgrave's (1997) study of 51 NDErs found 92% of participants believed in an afterlife, although only 21% had believed in an afterlife prior to their NDE. Sutherland (1989) found 100% of her 50 NDE participants professed to belief in life after death following their NDE. Forty two percent said they had believed in life after death beforehand; however in many cases this new belief explicitly contradicted previously held views. Many expressed an increased or newfound belief in reincarnation following their NDE, a finding noted in other studies (e.g., Wells, 1993).

Prospective studies evidence similar findings. Van Lommel et al. (2001) reported a significant difference in patients with and without NDEs. At two and eight years after cardiac arrest, the NDE group was far more likely to hold a belief in life after death ($p < .007$), compared to patients without NDEs. Schwaninger et al. (2002) also found NDErs were significantly more likely to believe in life after death ($p < .011$) compared to nonNDErs at six-month follow-up. One hundred percent mentioned survival of the soul after death of the body, and 90% spoke of a continuance of life at another level.

3.3.7 Psychic ability

The emergence of psychic ability, increased paranormal or extrasensory experiences are a frequently cited aftereffect of NDEs (Kohr, 1982; Greyson, 1983b; Ring & Rosing,1990; Sutherland, 1989). For example, Ring and Rosing (1990) claimed an increase in psychic ability was one of the most pronounced aftereffects self-reported by their group of 74 NDErs, with 60.8% reporting an increase in this area.

Examining this phenomenon in more detail, Greyson (1983c) documented the self-reported frequency of paranormal experiences in 69 individuals both before and after their NDE. Using the Survey of Psychic Experiences (Palmer, 1979) he found significant differences in the percentage of participants reporting specific types of phenomena following their NDE. For instance, there were highly significant increases in extrasensory perception,

out-of-body experiences, encounters with apparitions, perception of auras, mystical experiences and lucid dreams. Greyson concluded "The NDE appears to be not only psi-conducive for the duration of the experience, but psi-enhancing for the individual's subsequent life" (p.29).

In a qualitative study of 40 NDErs, Sutherland (1989) also investigated self-reported psychic experiences and beliefs of participants both before and after the NDE. To determine whether the sample was unusually psychically sensitive beforehand, the 'before' findings were compared against existing studies of reported psychic ability in general populations (United States, Great Britain, Australia and Sweden). The comparison showed NDErs could be considered 'normal' before the NDE (p.97). Significant increases following NDEs were reported in nearly all areas, including clairvoyance, telepathy, precognition, intuition, healing ability, perception of auras and sensing of spirits. Sutherland noted while some experiences were easily absorbed into the individual's everyday life, other phenomena were perceived as negative and disruptive. Although all participants were aware of the increase in psychic phenomena in their lives, the response to it differed. While some went on to use their psychic gifts as healers, others suppressed the effects because they felt so uncomfortable with them.

As with many NDE aftereffects, a notable issue with studies of psychic abilities is the reliance on experiencers' accounts, rather than objective tests of psychic abilities. Studies are documenting NDErs *claims* of psychic abilities, hence the veracity and extent of *actual* psychic ability remains unknown.

3.4 Behavioural Changes

Lundahl (1993) observed the shift in values and beliefs ultimately results in a change in the NDErs actions and behaviour, occurring as a type of chain reaction:

> …the NDE causes changes in values, which in turn cause changes in the NDErs' desires, which in turn cause changes in the individuals' motives, which in turn cause changes in the experiencers' thoughts, resulting finally in changes in the NDErs' actions and behaviors. (p. 116-117)

This transformation in worldview and value systems often manifests externally as changes in life priorities and goals, the termination of significant relationships, and changes in career (Christian, 2005; Groth-Marnat & Summers, 1998; Musgrave, 1997; Stout, Jacquin, &

Atwater, 2006; Sutherland, 1990, 1992, 1995). Greyson (1983a) found NDErs placed significantly lower value on social status, professional and material success, and fame. With their increased interest in helping others, NDErs are more likely to retrain in jobs focussed on helping others, such as in the counselling and healthcare professions (Atwater, 1988; Noyes, et al., 2009).

3.5 Negative Effects of NDEs

Although the majority of literature focusses on life-enhancing changes, not all post-NDE changes are positive. NDEs can result in psychological, physical and social difficulties, both in the immediate aftermath and over the long term. Furn (1987) likens the process of adjustment after an NDE to a kind of culture shock, noting NDErs report many of the same difficulties as those adapting to a new culture. The similarity in experiences includes language barriers, isolation, an adjustment process spanning several years, a sense of loss coupled with hope of a greater gain, and a revised view of the world that does not conform with the cultural majority.

Some NDErs experience shock and surprise at their experience, and struggle to come to terms with the episode as they search for validation and its meaning (Hoffman, 1995; Morris & Knafl, 2003). Morris and Knafl (2003) interviewed 12 cardiac arrest patients shortly after their NDE to investigate the nature and meaning of the NDE for the experiencer, and how it influenced the individual's life. Six patients were interviewed within one month of their NDE and six were interviewed within two years of the experience, with three patients from the first group interviewed a second time four to six months later. Morris and Knafl noted the experience was frequently very emotional and personal for individuals, and they were often unsure of how to interpret their NDE. Some patients struggled to understand and find meaning in the experience, leading to frustration, confusion, depression and a questioning of their own sanity, particularly in the initial stages following the NDE. The authors claimed that with time and someone non-judgemental to speak to, most were able to resolve these issues and eventually perceive their NDE as a type of spiritual awakening into a new way of looking at the world. Based on their participants' experiences, the researchers stressed the optimal or therapeutic response in dealing with NDE patients was to confirm their experience, rather than explain away.

Greyson and Harris (1987) also acknowledged NDEs can produce significant intrapsychic and interpersonal difficulties. Maladaptive effects include on-going depression or anger, feelings of alienation, fear of having had a psychotic episode, fear of mental instability, damaged relationships, disrupted careers, and years of adjustment to a dramatically revised understanding of reality. The authors claimed the psychological and social problems that can occur after NDEs have been largely neglected in the literature and recommended several guidelines and strategies for helping NDErs cope with difficulties. It was suggested the best way to overcome problems was to channel any insights and values gained during the experience into constructive action.

Although studies have reported an increased involvement in family life (van Lommel et al., 2001), relationship problems and higher divorce rates are also thought to be a common aftereffect of NDEs. Christian and Holden (2012) assessed the marital and relationship stability of 26 NDErs following their NDE, finding 65% of marriages (at the time of their NDE) later ended in divorce. NDErs reported feeling less secure and satisfied in their marriages, and felt they lacked a strong level of shared meaning after the NDE occurred. With respect to marital dissatisfaction, Greyson (1997) claims marriages can break down after an NDE for a number of reasons. A revision in the NDEr's values and priorities often causes conflict, especially in relation to financial matters. Many marriages, formerly based on the accumulation of wealth, career advancement and the accruement of material possessions, may dissolve as the NDEr no longer places importance on, or prioritises, these previously upheld values. Money may no longer matter to the NDEr, but this perspective may not be shared by their partner. Alternatively, some partners may place the NDEr on some kind of pedestal and expect unrealistic changes from their spouse as a result.

Negative aftereffects can be particularly pronounced among those who experience distressing NDEs, which sometimes result in long-lasting emotional trauma (Bush, 2002). In addition to trauma engendered by the content of the NDE, individuals may suffer shame, anxiety, or confusion that their experience differed from the typically pleasurable experience reported by most people. Clark (1994) describes the distress that often accompanies frightening NDEs:

> Fear is pervasive: fear of the condemnation of others, fear of the experience itself, and fear of another terrifying NDE. Subsequently, these near-death experiencers may feel increased vulnerability and anxiety. (p. 254)

Bush (2002) claims that conventional psychotherapy is often inadequate in helping those who experience distressing NDEs. Many undergo therapy for many years, to no avail. Therapists are often unable to reach the "real" issues and are often untrained or inexperienced at dealing with spiritual issues of this order and magnitude. Very rarely will the individual overcome their fear of death as a result.

3.6 Limitations and Issues

It seems clear many NDErs undergo significant life changes following their NDE, however, research into aftereffects is not without issues. As previously noted, many studies have relied on retrospective accounts of self-selected samples, meaning those who believe they have been changed by their experience are likely to be overrepresented. It is entirely plausible many NDErs do not experience change, and therefore do not volunteer to take part in research. Interviewer or reporting bias may also be an issue. It is possible some researchers have selectively reported data that is more exciting, or consistent with their own personal beliefs (Ring, 2000; Sabom, 1998).

Studies have almost exclusively relied on experiencers testimonies. Only one study (Groth-Marnat & Summers, 1998) has attempted to verify changes from an objective point view. It could be argued however, that the independent assessors in the study (e.g., family members) were also prone to subjective bias. Ways of measuring aftereffects free from subjective impression (e.g., behavioural observations) have not yet been explored. However, this is likely to be a concern for any study of psychological change, whether related to NDEs or not. It is also less clear how aftereffects of NDEs differ from those associated with post-traumatic growth (Noyes, Fenwick, Holden, & Christian, 2009). Perhaps it is more a case of magnitude, rather than specific differences.

Although prospective studies have been important, a number of these studies have suffered from exceedingly small sample sizes (Klemenc-Ketis, 2013; Schwaninger et al.,

2002), making it difficult to form conclusions with confidence. They also suffer from the same limitations as retrospective studies, in that they are entirely based on self-reports.

Cross-cultural issues must also be considered. Similar to NDE phenomenology, what is known about aftereffects is primarily based on the reports of Western populations. It seems plausible in cultures where transcendent experiences are acknowledged and actively sought (e.g., Eastern cultures such as India or Tibet), life changes may not be so pronounced as they are less likely to be construed as anything out of the ordinary. Perhaps also, the types of changes differ. Although Lai et al (2007) only examined five types of changes (fear of death, kindness to others, optimism about the future, motivation, and life change for the better) Taiwanese NDErs (n = 44) reported being kinder to others and more motivated after their life-threatening events than nonNDErs (n = 22). However, other effects, such as being less afraid of death, being more optimistic about the future, and changing to a better life, did not significantly differ from nonNDErs. This suggests some aftereffects, typically reported by North American and Western Europeans, may not occur in other populations. Further research in this area is needed.

3.7 Summary

In summarising the pattern of aftereffects that typically follow NDEs, Ring and Valarino (1998) stated that "whatever the nature of the NDE, it is real in its effects" (p. 124). Although various methodological issues have been identified, numerous studies have reported long lasting aftereffects comprising unique psychological, physical and spiritual changes that can impact careers, relationships and other social behaviour.

The extent and type of aftereffects experienced differ from those found in survivors of life threatening events without NDEs, so cannot be attributed simply to the experience of coming close to death. Furthermore, those who have more intense experiences tend to display the greatest level of personal transformation. Taken together, these findings suggest the NDE itself is responsible for change.

For the most part, these changes are viewed as positive and life-enhancing; however NDEs can also result in a range of maladaptive responses such as depression, anger, confusion, feelings of alienation, and fear of mental instability. Socially, NDEs can lead to damaged

relationships and disrupted careers. Whether the outcome of an NDE is positive or negative depends on how successfully an individual accepts and integrates the experience into his or her life. This is largely determined by the NDEr's attitudes and beliefs about NDEs, as well as others' responses. Societal acceptance, particularly in the early stages following the NDE, is an important factor.

To date, little is known about how and why such a specific set of aftereffects take place. Some researchers have proposed these life changes stem from one aftereffect in particular – the loss of fear of death. In the next chapter, this most prominent of aftereffects will be explored in more detail.

Chapter 4.

Changed Attitudes Towards Death

Perhaps the most prevalent of all life changes following NDEs is a revision of beliefs and attitudes regarding death (Flynn, 1982; Greyson, 1983a; 1992; Noyes, 1980; Ring, 1984; Sabom, 1982; van Lommel, et al., 2001). Many NDErs claim to no longer fear death, think about it more often, and express an increased interest in issues related to death and dying (Ring & Valarino, 1998). This revised attitude to death is sometimes considered to be the root of all other life-changes, for as Tassell-Matamua and Lindsay (2016) claim "when death is not feared, there is nothing to lose" (p.76).

The following chapter details the results of several major studies suggesting NDEs alter a person's orientation toward death. Why this subjective experience prompts such a transformation has yet to be formally studied, however over the years many have speculated over the possible reasons. The chapter outlines several of these theoretical propositions, as well as discussing methodological weaknesses and gaps apparent in the current literature.

4.1 The Loss of Fear of Death

A dramatic alteration in the experiencer's attitude toward death was one of the earliest identified aftereffects of NDEs. In his interviews with NDErs, Moody (1975) observed the NDE had a profound effect on the individual's understanding and approach to human mortality. Moody stated, "In some form or another, almost every person has expressed to me the thought that he is no longer afraid of death" (p.87). Specifically, this change in attitude appeared to relate to the *state* of death, as NDErs did not generally lose their fear of the dying process and the potential for any pain and suffering.

In one of the first systematic studies examining the aftereffects of being near death, Noyes (1980) interviewed 205 individuals who had encountered life threatening situations,

documenting any subsequent changes in their attitudes and beliefs about life and death. Forty one percent claimed their fear of death had lessened as a result. Participants stated the experience had brought home the reality of their own finitude, resulting in a new zest for life and a more accepting attitude towards death. Although Noyes had corroborated Moody's findings, Noyes did not attempt to assess the subjective experience of the survivors; he did not know whether participants had had an NDE or not, making it difficult to determine whether change resulted from the actual NDE or simply by coming close to death.

Shortly after, Ring (1980) conducted a retrospective qualitative study specifically targeting NDErs. Eighty percent of his 49 interviewees spoke of a decreased or completely alleviated fear of death following their NDE. By comparison, 29% of the 38 participants in the nonNDE control group (consisting of individuals who had also come close to death but no NDE) reported a lessened fear of death. Of all the life changes reported, Ring felt the loss of fear of death was the most striking differentiator between the two groups. Later qualitative studies relayed similar findings, with some even claiming fear of death was eliminated in 100% of their sample (Flynn, 1982, 1986; Sutherland, 1992). In her study of 50 Australian NDErs, Sutherland (1992) enquired about attitudes to death before and after the NDE. Over three-quarters of her participants said they had a fear of death previously, whereas none reported a fear of death following their NDE. In fact, Sutherland claimed many laughed at the question.

Despite the consistency of findings, perhaps the most notable shortcoming of these interview-based studies was the reliance upon self-selected samples. Ring's sample especially, was highly self-selected and has been criticised for sample bias (Noyes, et al., 2009; Sabom, 1998). Many participants were known to the researcher and did not represent a random sample. Ring himself acknowledged this methodological weakness, admitting many of his interviews were informal. He commented "It is hard to interview a friend as strictly as one might a stranger, especially at the Near-Death Hotel" [a name given to Ring's house] (Ring, 1984, p. 29). Whether such accounts are representative of the wider population of NDErs is difficult to ascertain. Furthermore, none were designed to specifically investigate death attitudes, hence knowledge was a type of 'ad-hoc' finding. The construct "fear of death" was not defined, nor investigated in any depth.

Sabom (1982) was one of the first researchers to specifically examine changed attitudes to death after NDEs from a quantitative as well as qualitative perspective. In a prospective

study conducted over a five-year period, Sabom interviewed a random sample of 116 patients who suffered near fatal medical crises. Sixty-one (40%) of his patients reported vivid Moody-type experiences that included features such as out-body-experiences, a sense of timelessness, tunnels, encounters with light and a transcendental reality. Sabom noted a definite decrease in NDErs' fear of death that appeared to occur immediately after their NDE. Eighty-two percent indicated a reduced or eliminated fear of death, compared to only 2% of patients who did not report NDEs. None of Sabom's NDE patients reported an increase in the fear of death; however, 11% of the nonNDErs claimed they were more fearful of death as a result.

Following these initial interviews, Sabom conducted a six-month follow-up assessment with the Death Anxiety Scale (Templer, 1970) and Death Concern scale (Dickstein, 1972) to empirically test NDErs' claims of a changed attitude to death. Twenty-six NDErs and 18 nonNDErs completed the survey. Sabom found scores for both scales were significantly lower among the NDE group than nonNDE group, indicating they did indeed have fewer fears and concerns surrounding the thought of their personal death. As a result, Sabom concluded the loss of fear of death seemed to stem from the actual NDE, not simply from having survived a life-threatening episode. By using a specifically designed measure Sabom had corroborated his interview findings and demonstrated clear differences between NDErs and nonNDErs. Unfortunately, however, the sample size was relatively small, and it is unclear whether inflated type I statistical errors, or the possibility of a 'false positive' finding were adequately accounted for.

In a more systematic analysis using a larger sample size, Greyson (1992) assessed the fear of death using the Death Threat Index (Krieger, Epting, & Leitner, 1974), a scale measuring how threatened individuals feel by the thought of their personal death. The quantitative study assessed 135 NDE survivors, 43 individuals who had a close brush with death but no NDE, and 112 people who had never been close to death. NDErs were recruited via advertisements placed in the International Association for Near-Death Studies (IANDS; an organisation dedicated to NDE research and support) newsletter and assigned to the NDE group if they scored 7 or higher on the NDE Scale. An analysis of variance compared responses between the three sample populations, finding significantly lower death threat amongst NDE survivors (p = .0019). Using NDE Scale scores, Greyson also found that the more intense (or deeper) the NDE, the less threatened NDErs felt by death (p = .029). Scores were comparable between the two control groups, so findings could be reasonably attributed to the NDErs' low

level of death threat, rather than unusually high levels of threat experienced by the control groups. Like Sabom, Greyson concluded that experiencing an NDE appeared to be the critical factor behind a changed attitude to death, rather than simply surviving a near-fatal event.

Although Greyson (1992) utilised a strong sample size and recruited two other sample populations for purposes of comparison (those who had also come close to death, and those who had not), sample selection may have been an issue. As with many NDE studies, volunteers were recruited from the IANDS organisation. Other researchers have suggested this group of individuals may introduce bias into any study examining the effects of NDEs, as they tend to share a similar mindset and philosophy regarding their experience (Noyes, et al., 2009; Roberts & Owen, 1988; Sabom, 1998). IANDS members may have been involved in previous research and exposed to NDE literature, as well as each other, so may intentionally or unintentionally think and behave in a way that is 'expected' of an NDEr. Additionally, it is likely that only those who believe their experiences are meaningful and significant join IANDS and/or participate in research. Conversely, those who regard their experience as a meaningless hallucination are both less likely to self-select into NDE studies, and less likely to undergo positive changes. Again, it is difficult to tell whether retrospective studies using highly self-selected samples, such as Greyson's, accurately represent the greater population of NDErs.

Prospective studies have helped clarify findings in this area. Data obtained from random samples also indicates NDErs have significantly less fear of death than nonNDErs (Schwaninger et al., 2002; van Lommel et al.`, 2001). Furthermore, the positive effects appear to be on-going, with the fear of death decreasing even further over time. Van Lommel et al.'s (2001) longitudinal study of 344 cardiac arrest survivors found that when interviewed shortly after their cardiac arrest, most of the NDE patients did not express any fear of death. Two years later, 43% of the NDE group reported further decreases in the fear of death, as measured by the LCI. After eight years, 63% had reported an even greater reduction in death fear. In comparison, 16% of the control group (consisting of cardiac arrest survivors who did not have an NDE) reported a decrease in fear after two years, and 41% reported a decrease after eight years. Although the nonNDE group also reported positive change over the long term, it was not as immediate or pronounced as the NDE group.

Although studies such as van Lommel's (2001) provide strong evidence for a lessened fear of death following NDEs, the construct is measured in a very superficial way. The LCI

measures a range of different aftereffects, but none in detail. With respect to the fear of death, only one question is posed; "Since my near-death incident, my fear of death has…[response is then selected from a 5-point Likert scale ranging from strongly increased to strongly decreased]". Such a simplistic approach is prone to desirability bias and may not indicate deeper, more subconsciously held fears (Feifel & Branscomb, 1973; Krieger, Epting, & Leitner, 1974). Unidimensional assessment methods are also thought to be of questionable value as they cannot tap the range of different fears related to death. What exactly are researchers assessing when measuring the fear of death? One participant may be pondering the concept of non-existence, whereas another may be considering the possibility of a painful death. Responses may differ, depending on individual attributions.

Some research has suggested it may be a matter of increased acceptance, rather than reduced fear. In a prospective study of 1595 patients admitted to a cardiac intensive care unit, Greyson (2003) found 27 reported an NDE, as determined by a score of 7 or more on the NDE Scale. Of these 27 NDErs, 23 were matched for age, gender, and primary diagnosis to a group of nonNDE cardiac arrest patients, for purposes of analyses. In addition to a number of other assessments, the patients' attitudes to death were measured using the Death Attitude Profile (DAP; Gesser, Wong, & Reker, 1987). NDErs reported significantly higher levels of approach-oriented death acceptance than the matched control group ($p = .01$), suggesting they were more likely to view death as a transition into a rewarding afterlife. Interestingly, Greyson found no significant difference between scores on the fear of death subscale. Whether this indicates a decrease in fear for *both* groups, or no net change in attitude for the NDE group, remains unclear. To the author's knowledge, this is the only study not indicating a lessened fear of death following NDEs, tentatively suggesting NDErs' attitudes to death may be more complex than previously thought. However, like Sabom's (1982) study, it is limited by small sample size and is unclear whether appropriate adjustments were made to account for small-N comparisons.

4.2 Theoretical Propositions for a Reduced Fear of Death

Although research has consistently reported more positive attitudes to death, the question of causality is an area neglected in the NDE literature. Why NDEs prompt a change in

the individual's attitude to death is largely unknown, despite considerable speculation. Proposed explanations are outlined below.

4.2.1 Belief in Afterlife

In general, most researchers have directly attributed this change to a new or strengthened belief in the afterlife, claiming NDErs frequently report a sense of certainty in post-mortem conscious continuation after their NDE. For example, Moody (1975) and Ring (1980, 1984) attributed this finding to the NDErs' construction of a new model of death that involves transition into another state of being rather than annihilation.

In support of this, research has indicated a concomitant rise in afterlife belief amongst NDErs (Flynn, 1986; Grey, 1985; Greyson & Stevenson, 1980; Ring, 1980; Sabom, 1982; Sutherland, 1990; van Lommel et al., 2001). For example, the van Lommel et al. (2001) study found that two years after their cardiac arrest, only 16% of the nonNDErs reported a new or strengthened belief in the afterlife, in comparison to 42% of NDErs. This belief increased even further over time for the NDErs but remained stationary for nonNDErs.

However, this relationship is perhaps not as clear as many researchers suggest. It fails to explain why the percentage of those who report a belief in the afterlife does not match the percentage of those who report an eliminated fear of death. NDE studies rarely report identical or comparable figures that are suggestive of a singular causal relationship, indicating other factors may be involved. For example, Lai et al. (2007) found 75% of 45 Taiwanese dialysis patients who had NDEs reported a decreased fear of death, yet only 56% reported a belief in 'life after life'. Assuming there is a causal relationship, it still does not explain why the remaining 19% also lost their fear of death. Interestingly, 44% of the NDE participants in Lai et al.'s study did not subscribe to a belief in continued existence after death. Similarly, Fenwick and Fenwick (1995) found 82% percent of the 350 NDErs participating in their study no longer feared death, yet only 48% reported belief in an afterlife.

As discussed in chapter one, the idea that belief in the afterlife mitigates fear of death is not well supported by death anxiety research in general. It is commonly assumed that religion, particularly afterlife belief, exists for the primary function of reducing fear associated with death, yet despite this popular assumption, research has failed to find a conclusive link between belief in the afterlife and death anxiety. In general, it appears afterlife belief is primarily a

function of religion, rather than an important mechanism for easing death related fears (Aday, 1984). Instead, studies have demonstrated *strength of conviction* in the chosen system of belief – regardless of whether the individual is an afterlife believer or non-believer - is more important than religious belief per se (Aday, 1984-85; Downey, 1984; McMordie, 1981; Rasmussen & Johnson, 1994). Therefore, it is possible reduced fear of death amongst NDErs may be a response to the psychological state of *certainty or conviction*, rather than any specific belief in the afterlife. The degree of certainty in post-mortem continuation resulting from an NDE is often said to be extremely high. Fittingly described by van Lommel (2010), this insight "no longer rests on faith but on certainty" (p. 47).

Assuming there *is* a causative link between increased afterlife belief and a lessened fear of death, how exactly this afterlife belief was formulated remains unclear. What is it about NDEs that can stimulate a belief in continued existence after death?

5.2.2 Out-of-Body Experience

In terms of specific mechanisms, Ring (1980) claims it may be based on the sense of disembodiment experienced during the NDE asserting "When an individual knows with a sense of unshakable certitude that he can exist outside of his own body, he intuitively understands that physical death is not an end. . ." (Ring, 1980, p. 110). Tiberi (1993) agrees, considering the out-of-body experience (OBE) to be particularly instrumental. Indeed, OBEs as a discrete syndrome have been found to increase belief in life after death almost as much as NDEs (Gabbard, Twemlow, & Jones 1981; Irwin, 1983; Tiberi, 1993). An OBE (without NDE) occurs either spontaneously or voluntarily and is defined as an experience in which a person's centre of consciousness seems to temporarily occupy a position spatially remote from the body (Irwin, 1985). Like NDEs, it is similarly linked to a host of positive psychological sequelae (Irwin, 1985; Tiberi, 1993). Tiberi (1993) compared an OBE group with an NDE group, finding both groups underwent statistically comparable changes with respect to psychological and behavioural aftereffects. Both groups reported being less afraid of death, leading Tiberi to conclude:

> ...in fact, many of the behavioural changes often described as consequences of an NDE…may be attributable to the out-of-body experience, which leads the individual to believe that he or she is coming into contact with metaphysical realities (p. 164).

4.2.3 Experience of 'the light'

The experience of light has been suggested as an important factor, with some authors considering it the most powerful element of NDE (Morse, 1992; Ring, 1984; West, 1998). Studies indicate those who encounter light are far more likely to believe in the existence of an omnipotent, all-knowing entity (commonly referred to as God) as a result (Ring, 1984). Morse (1992) and Ring (1984) suggest this phenomenological feature is the essence of the NDE's ability to facilitate change, reporting that individuals who encountered light demonstrated the highest level of transformation. Morse (1992) claimed it reduced the fear of death and stimulated a strong conviction in another reality. Given the experience of light is frequently perceived as a connection with divinity or supernatural agent, it seems feasible this element may be responsible for the spiritual growth often reported after NDEs, which in turn may have an impact on death attitudes. Outside the field of near-death studies, the development of spirituality has been independently linked to increased death acceptance, decreased death anxiety and a greater sense of purpose, wellbeing and happiness in life (Ardelt, 2008; Bolt, 1975; Cohen et al., 2005; Donahue, 1985; McClain, Rosenfeld, & Breitbart, 2003).

4.2.4 Life Review

The life review may also play a role. Greyson (1981) suggested the life review may have a therapeutic effect by helping resolve old conflicts and grievances, thus facilitating a more positive sense of self-worth. This position is compatible with Soloman and Greenberg's Terror Management Theory, which postulates that higher levels of self-esteem have a buffering effect against the fear of death. Evidence also supports the theory that a life review, or reminiscing about one's life, can help the individual face death (Georgemiller & Maloney, 1984; Wong & Watt, 1991). Olsen (1992) claims the life review appears to serve a powerful psychodynamic need - so important that if the individual has not reminisced or reviewed their life before their impending demise, they will do so at the moment of death. As postulated by Olsen, the elderly and the NDE survivor both have this in common, and both exhibit lower death anxiety.

4.2.5 Combination of Features

Despite the feasibility of the above suggestions, none of these features are universally experienced during NDEs. For example, the percentage of NDErs who report an OBE as part

of their experience has varied between 24% (van Lommel et al., 2001) and 100% (Sabom, 1982). Similarly, the average incidence rate of the life review is approximately 20% (Greyson 1993; Noyes & Kletti, 1977; Ring, 1980; van Lommel et al., 2001). With this consideration, Tassell-Matamua and Lindsay (2016) propose the reduction in death fear is due to several phenomenological features that may individually or collectively prompt a renewed understanding of death and the dying process. In addition to the out-of-body experience and exposure to a bright otherworldly light, other characteristics of NDEs such as extreme positive affect and the meeting of deceased others are deemed influential. Specifically, the authors propose the sense of disembodiment often felt during an NDE may endorse the possibility of existing externally to one's physical form, making the annihilation hypothesis of death less tenable. The meeting of deceased relatives may be similarly influential, with the apparent survival of deceased loved ones beyond their physical demise further shaping or reinforcing this concept. As mentioned previously, the experience of light during an NDE is frequently interpreted by experiencers as contact with the divine or sacred. This perceived connection with divinity may facilitate an understanding of oneself in context to a greater, universal order, resulting in an increased acceptance of death. It may also create feelings of being 'looked after' or cared for beyond death. Finally, the authors suggest that intensified positive emotions, such as peace, painlessness and joy, may contravene many people's expectations of death and the dying process. Death is reframed instead as a pleasant, affirmative experience rather than one of pain and anguish.

4.2.6 Feelings of Invulnerability

From a completely different perspective, it may not be the content of NDE that promotes change, but perhaps the physical confrontation with death itself. After an NDE, experiencers often feel they have somehow cheated death (Noyes, 1980). This may create a sense of invulnerability in life, as the fear of dying is no longer a concern (Flynn, 1986; Noyes, 1980). Put simply, NDErs often feel that due to the system of chance, the probability of dying (or nearly dying) again in the near future is highly unlikely. In support of this, Lai et al. (2007) found 75% of Taiwanese dialysis patients who had an NDE reported a decreased fear of death. When questioned further about their changed attitude to death, 43% stated they no longer feared death because they had already died once.

4.2.7 Mindfulness

A lessened fear of death may also arise from other aftereffects following NDEs. A greater feeling of 'aliveness' or vitality is commonly felt by NDErs, as well as the experience of living 'more fully in the moment' (Atwater, 1988; Ring, 1984). Wren-Lewis (1994) suggested this heightened ability to be 'mindful', or more present in the moment, may explain the decreased death fear. He claims: "a shift in consciousness whereby life in each moment becomes so vivid that anxiety about future survival…ceases to be important" (p.108). This concept is supported by studies examining mindfulness and its ability to impact death attitudes (Bruce & Davies, 2005; Tacon, 2011).

4.2.8 Changes in Approach to Life (Post-Traumatic Growth)

The positive psychological changes made after a traumatic event, such as coming close to death, are often referred to as post-traumatic growth (PTG). PTG is based on the principle that people who experience significant trauma do not always suffer deleterious consequences. Not only do they recover from their episode, but often surpass the level of functioning they had prior to the event (Hefferon, Grealy & Mutrie, 2009). Changes include closer personal relationships, increased self-worth, increased appreciation for life, changed priorities and a richer existential and spiritual life (Tedeschi, & Calhoun, 2004). Increased awareness of the fragility and finiteness of life supposedly motivates the individual to make the most out of life.

The literature on death-related attitudes supports the notion that the way life is lived impacts attitudes to death (Wong, 2007). An increased involvement in compassionate activities, self-actualisation, a deepening of one's spiritual focus, and the belief that one is living a meaningful life have all been connected to decreased existential anxiety (Bruce & Davies, 2005; McClain, Rosenfeld, & Breitbart, 2003; Tomer & Eliason, 2000; van Ranst & Marcoen, 2000). Research shows NDErs frequently report many of these changes at some stage after their NDE (e.g., Atwater, 1988; Bauer, 1985; Fenwick & Fenwick, 1995; Greyson, 1983b; Groth-Marnat & Summers, 1998; Sutherland, 1992; van Lommel et al., 2001).

Nevertheless, Noyes (1980) and Flynn (1986) assert an eliminated fear of death is the *antecedent* of these reported life changes, and not the other way around. According to Flynn, the dramatic personality transformation evidenced by NDErs seems to stem from this

profoundly decreased fear of death. A quote from one of Flynn's (1986) NDE participants, who later went on to help the terminally ill, supports this:

> I lost my fear of death, which is a marvellous gift. Life has been so different since the experience. It's as if "What do I have to be afraid of?" It opened me up to everything. Why do I have live within this little shell? I could be anything I want to be, because I have nothing to fear. Death holds no fear for me anymore. And certainly that has to be the ultimate fear – the fear of death (p. 5).

Although the causal direction remains open to speculation, prospective studies measuring attitude change immediately after NDEs suggest this reduction in death fear is largely instantaneous (e.g., Sabom, 1982; Schwaninger, 2002; van Lommel et al., 2001). This implies that it is not a consequence of PTG effected by the NDE (although it may of course be reinforced by these changes) but can be directly attributed to the unique characteristics of the subjective experience itself.

4.3 Beliefs About the State of Death

Given reduced fear of death among NDErs is frequently linked to increased belief in the afterlife, it would be pertinent to explore this relationship further. Yet to date, little is known about NDEr's interpretations of the after death state, with many authors implicitly assuming, or deliberately conflating beliefs, to be consistent with a Western Judaeo-Christian worldview (e.g., Flynn, 1986; Lundahl, 1993; Rawlings, 1978, 1993; Sabom, 1998), a corollary perhaps, of oversampling within the United States where 89% of the population are considered to be religious or hold belief in God ("Importance of Religion," 2015). As Ring states "Such a view does not logically require a religious interpretation of the afterlife, but, in practice, it is usually put that way" (1980, p.110).

However, there is considerable evidence that NDErs' post-mortem beliefs are in some way modified from prior conceptions about life after death, the phrase "less religious, more spiritual" commonplace in the literature. Research indicates a tendency amongst NDErs to move away from conventional and traditional forms of religious belief (Fox, 2003; Greyson, 2013; Kellehear, 1996; Ring, 1980; Sutherland, 1990). Yet, what they move towards instead

remains largely unknown. While some research has suggested NDErs, in the West at least, may become more sympathetic to alternative beliefs such as reincarnation (Sutherland, 1989,1990; Wells, 1993), other studies have refuted this, finding no correlation between belief in reincarnation and NDEs (Sabom, 1998). Sabom (1998), for example, questioned the legitimacy of previous research findings, claiming participants were recruited from the pool of 'like-minded' IANDS supporters, therefore did not accurately represent the greater population of NDErs. Sabom found the random sample of NDErs in his qualitative study (who were not IANDS members) were no more likely than other participants to believe in reincarnation. Ring (2000) counters however, that Sabom's sample of NDErs were carefully selected Conservative Christians - a religion that Sabom himself identified with. Hence, findings in this area are inconsistent and inconclusive (and perhaps biased) and would benefit from further investigation. If there *is* a tendency towards any specific belief system, whether religious or secularly based, then this may have important implications for death anxiety research in general.

To date, outside of two very general questions in the LCI, no psychometric instruments have been used to specifically measure the existence and type of post-mortem beliefs held by NDErs and how they might compare to nonNDErs. Like the fear of death, conclusions are often based on selective anecdotal data mainly derived from the United States. It is difficult to conclude with any real certainty whether a) NDErs do have an increased belief in the 'afterlife'; b) what the thematic structure of this belief is; c) whether it differs from others, and d) how (and if) it relates to a lessened fear of death.

4.4 Summary

In conclusion, existing knowledge regarding NDErs' beliefs and attitudes towards death is limited. Research has been hindered by an overreliance on unidimensional assessment methods, non-random sampling techniques, and a preponderance of theoretical assumption, all of which make it difficult to know how accurate or representative these findings are for all NDErs. There is little to no empirical information regarding the type of fears NDErs hold (or do not hold) regarding death, or why their views might have changed following their experience.

Although a new or strengthened belief in an afterlife is often considered central to any changes, this has been primarily based on selective anecdotal evidence derived from North America. Furthermore, little is known about the structure of these beliefs. Given the loss of fear of death in NDErs is often directly attributed to a belief in post-mortem continuation, this area naturally represents an important area for further exploration. The word 'afterlife' is often used indiscriminately in the NDE literature; however the author proposes this may be inaccurate or an inappropriate expression in this context, given that many NDErs typically object to describing their experience in religious terms (Sutherland, 1990). For example, Wren-Lewis (1992), in considering his own NDE, claims with its quality of timelessness NDEs may instead encourage belief in "a dimension called eternity, something quite distinct from immortality with which it is often confused" (p. 80). Investigation into NDErs interpretations of the after death state, free from the religious bias that sometimes permeates NDE literature, is likely to be of interest not only to NDE researchers but those interested in extended states of consciousness in general.

Chapter 5.

Research Questions and Approach

The purpose of this research was to determine how and why NDEs impact attitudes and beliefs about death. Based on the literature review, several areas were identified as warranting further investigation, including:

- The specific construct of NDErs' death related attitudes.
- The reasons behind any change in attitude and beliefs.
- An assessment of NDErs' post-mortem survival beliefs, including how they relate to death attitudes.

This chapter describes the research questions pertaining to each of these areas, and the overall research paradigm chosen to address these questions. Because research into NDE aftereffects is relatively underdeveloped, no hypotheses were advanced. Rather, the research sought to be exploratory.

5.1 Research Questions

5.1.1 The construct of NDErs' death related attitudes

Most NDE-related studies have investigated only the fear of death; however attitudes to death can vary. A positive response to the thought of one's own death may mean an individual has less fear of death, but it could also signify an avoidance of death [thoughts], an increased acceptance of death, or even a combination of all three. In the only study assessing death attitudes from a multidimensional perspective, Greyson (2003) found NDE participants had a greater acceptance of death than nonNDErs; however they did not have a lesser fear of death, contravening the widespread assumption NDErs have a decreased or non-existent fear of death. This finding tentatively suggests the predominant attitude amongst NDErs may be one of

acceptance; however given the extremely limited number of studies to date (i.e., one) and the small sample size of Greyson's (2003) study, it is currently difficult to draw any conclusions.

Although loss of fear of death, however conceptualised, appears to be a well-established finding, most NDE research has used a simple, unidimensional approach, sometimes asking only one question (i.e., indicate any change in your fear of death). Simple, easily scored self-reports of death anxiety are thought to be prone to social desirability response bias, and only measure explicit fears, or those available at the immediate conscious level. Furthermore, the fear of death is not a global construct and people fear death for different reasons. Currently, little is known about the specific types of death related fears held (or not held) by NDErs, and how they might differ from others. For example, can this reduction in death fear be attributed to a reduced fear of the unknown? A lessened fear of earthly deprivation at death? Does this reduction of death fear also extend to interpersonal relationships? Previous research investigating the fear of death in NDErs has also used highly self-selected individuals, such as those from the IANDS organisation, meaning findings may not be representative of the greater population of NDErs.

To counter previous criticisms and address gaps in the literature, the present study used a multi-dimensional approach to assessing death fear, in addition to recruiting a heterogenous sample, with the aim of addressing the following questions:

- What are near-death experiencers' (NDErs') attitudes to death, and do these differ from those who have experienced a life-threatening event but with no NDE (nonNDErs), and those who have never experienced a life-threatening event (controls)?
- Do the objects of death-related fear differ between NDErs, nonNDErs, and controls and if so, in what way?
- Is there any behavioural evidence for a changed attitude to death, suggesting transformation beyond that verbally reported?

5.1.2 The reasons behind any change in attitudes and beliefs

Neimeyer, Moser, and Wittkowski (2003) claim 95% of studies examining death anxiety (in general) have relied on written questionnaires using closed-ended instruments. Very

few have asked the "why" question, meaning there is little appreciation for the reasons underlying any differences (Mooney & Gorman, 2001). Similarly, according to Noyes et al. (2009), much is known about NDEs and their associated aftereffects, but very little about the factors that produce them. One of the key objectives of this research, therefore, was to better determine the reasons behind any change in attitude. The majority of NDE authors have based their conclusions solely on assumption and theoretical proposition, mostly derived from spontaneous anecdotal evidence, a method often criticised as unreliable (e.g., Krieger, Epting, & Leitner, 1974). This approach tends to only sample those who are forthcoming with information and opinion, and may unintentionally neglect other equally valid viewpoints. Currently, no studies have specifically examined NDErs death attitudes and beliefs from a qualitative perspective.

To address this gap in the literature, this research interviewed a random sample of NDErs to find out about their attributions for any change. Quantitative analyses also helped elucidate any relationships between certain features of the experience and subsequent death attitudes. The following questions were addressed:

iii. If there is a change in attitude to death after an NDE, what are the self-identified reasons for this change?
iv. Are there any relationships between certain features of NDE, and corresponding death attitudes?
v. Was this change immediate or did it happen over time?

5.1.3 An assessment of NDErs' post-mortem survival beliefs, including if and how they relate to death attitudes.

Given the loss of fear of death is usually attributed to an increased belief in post-mortem survival, this area warranted further exploration. NDErs' afterlife beliefs have never been empirically tested with a specifically designed psychometric instrument or assessed from a qualitative perspective. Like the fear of death, studies measuring the afterlife beliefs of NDErs have typically adopted a unidimensional approach based on the simple affirmation or denial of an afterlife. To the author's knowledge, no studies have explored the thematic structure of these beliefs and examined how and whether NDErs differ from others. Whilst

some have proposed a tendency towards reincarnation, results are limited, contradictory and have been criticised for sample bias.

Although NDE related aftereffects recorded on the Life Changes Inventory-Revised (LCI-R; Greyson & Ring, 1984) indicate NDErs have an increased belief in the afterlife as well as a reduced fear of death, the link between these two aftereffects also remains unclear. The specific focus for the present study was therefore to investigate:

vi. Do NDErs differ from nonNDErs and controls in terms of post-mortem survival beliefs?
vii. Do NDErs exhibit a tendency toward any type of post-mortem belief?
viii. Is there a relationship between NDEs, post-mortem survival beliefs, and death attitudes?

5.2 A Mixed Method, Retrospective Approach.

To ensure NDErs' attitudes and beliefs about death were comprehensively explored, data were collected using a mixed method approach (a combination of qualitative and quantitative methods). There were several reasons why a mixed method approach was considered ideal for this research.

Mixed methodologies are becoming increasingly popular in social science and behavioural research and are often positioned as the 'third research paradigm' (Denscombe, 2008; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). While some posit that qualitative and quantitative research paradigms are fundamentally distinct and cannot and should not be mixed (Creswell & Plano Clark, 2007; Howe, 1988), others claim mixed method approaches frequently result in better-quality research (Johnson & Onwuegbuzie, 2004). According to Johnson and Onwuegbuzie (2004), both methods are important and useful, and should not be viewed as 'either or'. A mixed method approach that utilises both qualitative and quantitative components is superior to mono-method research because it incorporates the strengths of both methodologies and minimises the weaknesses. Ultimately, if findings can be corroborated across different paradigmatic approaches, then greater confidence can be placed on any conclusions.

As NDEs are a purely subjective phenomenon, it was considered important the approach incorporated both a first-person and third-person perspective (subjective and objective) to generate a more thorough understanding of the phenomenon. According to Facco, Agrillo and Greyson (2015), scientific research into non-ordinary subjective matter has been traditionally dominated by the third person perspective, often leading to misunderstanding, inaccuracy, and prejudice as a result. Facco et al. cite the example of hypnosis, which was misunderstood as a type of sleep-like state for two centuries, due to overreliance on the third-person perspective. The authors instead promote a paradigm that incorporates both the first-person and third-person perspective to overcome the limits of the traditional objective scientific method, encouraging a more accurate understanding of unusual mental states such as NDEs.

Along similar lines, Tassell-Matamua (2013) claims a deeper explication of the connection between NDEs and their aftereffects needs to be achieved by moving beyond standard, quantitative assessment methods often employed in NDE research. Specifically, Tassell-Matamua and Lindsay (2016) recommend any examination into the death attitudes of NDErs would benefit from a mixed method approach to help explain and build upon existing data. Although loss of fear of death appears to be a well-established finding, there is currently little appreciation for why and exactly how this occurs. Adding a qualitative component to any quantitative assessment would substantially advance knowledge in this area.

In this study, the quantitative aspect assesses how and whether NDErs differ as a group from others. It is a more systematic approach that objectively measures the factors of interest using close-ended instruments. Because quantitative methods typically assess a larger number of people, it can improve the generalisability of findings. The qualitative component provides further insight into the constructs under study, answering the 'why' question so often neglected in both death anxiety and NDE research. It also allows the voice of the NDEr to be represented, and deep, rich observational data to be gathered. This facilitates a greater understanding of NDEs and their aftereffects for researchers, health practitioners, and the general public in Aotearoa New Zealand (and elsewhere).

Importantly, this approach allows any outcomes to have increased practical or therapeutic relevance. In other words, it is more likely to contain useful answers that help others, for example, those with high levels of death anxiety, or those feeling confused or isolated by their NDE (and its aftereffects). This consideration is encouraged by leading

scholars in the psychology of death, where the current trend is to explore more positive, pragmatic approaches to combating death anxiety rather than continuing to simply record correlational patterns (Haley, Larson, Kasl-Godley, Neimeyer, & Kwilosz, 2003), enabling "a more systematic engagement with the problem of death in human life" (Neimeyer, Wittkowski, & Moser, 2004, p.333).

The study used a *concurrent triangulation design* (Cresswell, Clark, Gutmann & Hansen, 2003). This means qualitative and quantitative data was collected at the same time, with equal weighting given to each phase. Data was analysed separately, then compared and combined during the interpretation (or discussion) stage. By obtaining two different but complementary sets of data, concurrent triangulation helps confirm, expand and cross-validate findings, providing a more accurate, complete and comprehensive understanding of the topic. Both phases sought to address each of the research questions, however some were naturally more suited to certain questions. For instance, the qualitative aspect was more readily able to assess personal attributions for change, whereas the quantitative component was able to pinpoint specific differences in the objects of death fear. Hence, qualitative and quantitative approaches were designed to support and supplement each other.

Integration is described as the process by which the researcher merges both quantitative and qualitative findings. The intention is to "produce a whole through integration that is greater than the sum of the individual qualitative and quantitative parts" (Guetterman, Fetters & Creswell, 2015, p. 545). In this research, integration of the data occurs in the final interpretation phase. At the interpretation level, integration can occur via three approaches: (1) integrating through narrative; (2) integrating through data transformation; and (3) integrating through joint displays (Fetters, Curry & Creswell, 2013). This study uses the *narrative approach* by weaving together the qualitative and quantitative findings on a "theme-by-theme or concept-by-concept basis" (Fetters, Curry & Creswell, 2013, p. 2134) to coherently address the research questions.

A retrospective study. The following thesis is a retrospective study using a combination of self-selected and randomly selected participants. A retrospective rather than prospective approach was considered the most appropriate choice for this research. While prospective studies do have advantages (especially in terms of sample randomness), they are substantially more expensive, time consuming, logistically complex and subject to greater

ethical considerations. A retrospective approach, in addition to being more straightforward to administer, also enabled long term changes (and the reasons for change) to be adequately captured, better determining whether transformation happened immediately or over time.

Although NDEs are thought to be triggered by a range of circumstances, this study primarily targeted NDErs whose experience was elicited by a life-threatening event. There were several reasons for this decision. Most NDE research has examined NDEs occurring during a close brush with death, hence continuing to do so is consistent with previous research. These types of experiencers are also easier to identify and recruit. NDEs occurring on the threshold of death or perceived as occurring during a state of actual death, are thought to be relatively common, whereas the incidence of 'NDE-like' experiences (induced by non-life-threatening circumstances) is lesser known, with experiencers more difficult to locate (Facco & Agrillo, 2012). There is also some debate over whether these two types of experiences should be considered distinct from another (Charland-Verville et al., 2014; Facco & Agrillo, 2012; Parnia & Young, 2013). Additionally, the study was primarily interested in death per se, and how NDErs beliefs and attitudes might compare to others who have also come close to death (but with no NDE).

Layout. In the interests of readability, the qualitative and quantitative components of this research will be discussed separately. Chapters 6 and 7 describe the quantitative method and subsequent results, respectively. Chapters 8 and 9 will then describe the qualitative methodology and associated results. Integration and discussion of both phases occurs in Chapter 10.

Chapter 6.

Quantitative Methodology

The quantitative aspect of this study, a self-administered online survey, was primarily designed to address research questions 5.1.1 and 5.1.3 (the construct of death attitudes and after death beliefs). It also aimed to assess any relationships between certain features of NDE and death attitudes, partially addressing question 5.1.2. Three different groups of participants were assessed. To determine whether any changes were due to the NDE, or the experience of coming close to death, data was gathered from NDErs as well as those who had experienced a life-threatening event, but with no NDE (nonNDErs). Data was also gathered from people who had never come close to death as a comparison, or type of 'benchmark' measure. The following chapter describes the participants, recruitment process, measures, procedures, data analysis, and ethical considerations.

6.1 Ethics

As the research topic was potentially sensitive, in that it asked individuals to recount a life-threatening event that may have been stressful or upsetting, ethics approval was sought and granted by the Southern B committee of Massey University Human Ethics (HEC: Southern B Application 14/42).

Before commencing the questionnaire, participants were directed to an information page briefly outlining the purpose of the study and advising that any involvement was anonymous, confidential, and they had a right not to answer any question (see Appendix B). All participants were assigned a computer generated random ID code, and no identifying information was collected. At the end of the survey, contact details for the researcher and the researcher's primary supervisor (who has significant experience with both NDEs and cultural psychology) were provided in case the study raised any concerns participants would like to discuss further.

Data collected through questionnaires was initially stored via an online database, accessible to the Massey University School of Psychology's data analyst. At the conclusion of the data collection period, all data was securely emailed to the researcher, where it was stored in a password-protected file on the researcher's home computer (the only person to have access to the raw data). Analysis of the data was conducted by the researcher only.

6.2 Recruitment Process

The majority of participants self-selected into the study in response to online and print advertisements. This approach was considered the most effective means for locating and recruiting potential candidates as it is relatively time and cost efficient, has a broad reach and can access a wide range of demographic groups. This approach was also suitable as the research was retrospective and not location specific (e.g., conducted in a hospital). Advertisements were worded to encourage participation by anyone who had experienced a close brush with death, regardless of whether they had an NDE or not (see Appendix A). This was done to recruit suitable control groups and not to bias initial responses to the questionnaire. The information page preceding the survey also invited people to complete the survey if they had *not* had a close encounter with death. Various recruitment channels included;

- Advertisements in Aotearoa New Zealand's most widely read national newspapers (*The Dominion, The New Zealand Herald, The Sunday Star Times*).
- Facebook advertising. Advertisements were randomly displayed on the Facebook pages of Aotearoa New Zealanders over the age of 21. The researcher also promoted the study on her own Facebook page, and this was then shared amongst other interested users' pages. This method was also used to recruit the control group. A family member also shared on a pacemaker Facebook support group for cardiac patients.
- Google Adwords. Participants were targeted by use of carefully selected keywords (e.g., near-death experience, close brush with death, strange visions when dying, out-of-body experience). This meant whenever a person searched for these terms the advertisement would be displayed, ensuring it reached the most relevant audience. The adword was set to display in countries where

English was widely spoken: Aotearoa New Zealand, Australia, United Kingdom, United States, Canada and India.

- Existing acquaintanceship networks.
- Advertising on specific NDE related websites and Facebook groups, such as http://www.nderf.org/ (NDE Research Foundation).

Initially recruitment was targeted to the Aotearoa New Zealand population, however, due to 1) an initial low response rate, and 2) interest and participation from persons situated overseas (due to the nature of the internet, particularly Facebook), the research was extended to include international participants. This decision was deemed acceptable as it increased the sample size of NDErs, and the study was not designed to target a specific geographic population. Unfortunately, however, advertising on NDE related websites meant a portion of the self-nominated sample were likely to be known NDErs (e.g., IANDS members).

6.3 Participants

Five hundred and one participants commenced the online questionnaire, however 317 of these were considered invalid responses due to incompletion. Many entries were started and then abandoned after the first few questions. These were deleted and the remaining 184 responses retained. Missing data were detected using the Descriptive function in SPSS (Coakes, 2013). Ten further entries were deemed unsuitable for analysis, due to large amounts of missing values, and were deleted from the data set. For each of the remaining responses, if less than 5% of the data was missing, either by deliberate omission or in error, and the variable was not categorical (such as religious orientation or marital status), it was replaced using the series mean function in SPSS, a procedure recommended by Coakes (2013). In total, 174 participants were considered suitable for inclusion in the subsequent analyses.

Three different groups of participants were defined; near-death experiencers (NDErs), those who had come close to death but with no NDE (nonNDErs), and those who had never been close to death (controls). To initially define and categorise these three groups, participants were asked near the beginning of the survey whether they had ever had a life-threatening encounter with death. If they answered ‘no’ to this question they were assigned to the control group. If ‘yes’, they were then asked whether they had an unusual and/or significant psychological experience during this time. If the answer was ‘yes’, they were

assigned to the NDE group, and if it was 'no', they were assigned to the nonNDE group. Initially, 71 participants comprised the NDE group, 34 were in the nonNDE group, and 69 individuals formed the control group.

All participants who reported unusual psychological experiences then completed the NDE Scale (Greyson, 1983). Fifty-nine (33.91%) participants reported experiences classed as NDEs according to Greyson's criteria (see page 110 for an outline of how the NDES is scored). Twelve participants scored below 7 on the NDE Scale so did not meet the inclusion criteria for an NDE. These participants were reallocated into the nonNDE group. The final nonNDE group, therefore, was composed of 46 (26.43%) participants who had had a close brush with death but no NDE. The third control group remained the same at 69 (39.66%) individuals who had never been close to death.

6.3.1 Participant Demographics

As shown in Table 6.1, the majority of respondents to the survey were female (64.60%). The mean age of the participants was 43.23 years old (*SD* = 18.92), and age at the time of the close encounter with death (where applicable) ranged from 1 to 85 years old, with a mean of 27.41 years (*SD* = 16.50). Fifty-three people (30.80%) identified as Aotearoa New Zealand Caucasian and six (3.50%) identified as Aotearoa New Zealand Māori. Fifty were North American (29.10%). Just over half the sample were single (52.60%) and the majority had a secondary qualification or higher (89.60%). In terms of religious belief, 50.80% were Christian, 24.10% were Atheist or Agnostic, 12.60% identified as Spiritual, and 11.50% were of other religious beliefs.

Within the NDE group, 66.10% of the sample were female. Age at the time of the NDE was 32.81 (*SD* = 16.40), and over half were married (60.30%). The majority of NDErs were Caucasian (88.60%), with 30.50% residing in New Zealand. Three percent were Aotearoa New Zealand Māori. Full demographic details are provided in Table 6.1.

Table 6.1
Demographic Characteristics of the Participants

Variable	Total Frequency (%) or mean (*SD*) (*n*=174)	NDE Group (*n*=59)	nonNDE Group (*n*=46)	Control Group (*n*=69)
Gender				
Female	95 (64.60%)	39 (66.10%)	23 (50.00%)	33 (47.80%)
Male	79 (45.40%)	20 (33.90%)	23 (50.00%)	36 (52.20%)
Age (Range 13-85)	43.23 (18.92)	52.02 (14.66)	41.19 (18.41)	29.43 (18.35)
Age at close encounter with death (Range 1-77)	27.41 (16.50)	32.81 (16.40)	25.14 (16.16)	n/a
Marital Status				
Single	91 (52.60%)	19 (32.80%)	25 (54.30%)	47 (68.10%)
Married/Defacto	73 (42.20%)	35 (60.30%)	19 (41.30%)	19 (27.50%)
Widowed	9 (5.20%)	4 (6.90%)	2 (4.30%)	3 (4.30%)
Number of Children				
0	81 (46.80%)	11 (19.00%)	19 (41.30%)	51 (73.90%)
1	22 (12.70%)	10 (17.20%)	9 (19.60%)	3 (4.30%)
2	43 (24.90%)	18 (31.00%)	14 (30.40%)	11 (15.90%)
3	11 (6.40%)	5 (8.60%)	4 (8.70%)	2 (2.90%)
4+	16 (9.20%)	14 (24.10%)	0 (0.00%)	2 (2.90%)
Ethnicity				
NZ Caucasian	53 (30.80%)	18 (30.50%)	21 (45.70%)	14 (20.90%)
NZ Māori	6 (3.50%)	2 (3.40%)	0 (0.00%)	4 (6.00%)
North American	50 (29.10%)	22 (37.30%)	11 (23.90%)	17 (52.20%)
Asian[1]	15 (8.70%)	4 (6.80%)	0 (0.00%)	11 (16.40%)
Other Caucasian[2]	34 (19.80%)	11 (18.60%)	7 (15.20%)	16 (23.90%)
Other Non-Caucasian[3]	14 (8.10%)	2 (3.40%)	7 (15.20%)	5 (7.50%)
Religious belief				
Christian	89 (50.80%)	27 (44.70%)	19 (42.20%)	43 (62.30%)
Atheist/Agnostic	42 (24.10%)	12 (20.30%)	13 (28.90%)	17 (23.60%)
Spiritual	22 (12.60%)	9 (15.30 %)	8 (17.80%)	5 (7.20%)
Other*	20 (11.50%)	11 (18.60%)	5 (11.10%)	4 (5.80%)
Religious belief after experience (if applicable)				
Christian	59 (39.10%)	18 (31.60%)	15 (34.10%)	n/a
Atheist/Agnostic	30 (19.90%)	7 (12.30%)	11 (25.00%)	n/a
Spiritual	47 (31.10%)	26 (45.60%)	14 (31.80%)	n/a
Other*	15 (8.90%)	5 (8.80%)	4 (9.10%)	n/a
Level of Education				
No qualification	18 (10.40%)	3 (5.20%)	5 (10.90%)	10 (14.50%)
Secondary	67 (38.80%)	15 (25.80%)	13 (28.20%)	31 (44.90%)
Tertiary or Trade certificate	30 (17.30%)	12 (20.70%)	11 (23.90%)	15 (21.70%)
Undergraduate degree	35 (20.20%)	13 (22.40%)	10 (21.70%)	12 (17.40%)
Postgraduate degree	23 (13.30%)	15 (25.80%)	7 (15.20%)	1 (1.40%)

[1] includes participants from Vietnam, China, Philippines, Pakistan and India. [2] includes participants from Australia, Canada, UK, USA and Europe. [3] includes participants from Africa, Samoa, Tonga, Cook Islands, Central and South America and the Middle East *includes Buddhist, Hindu, Muslim, Jewish and Pantheist beliefs. Because of rounding, not all percentages total 100.

6.4 Materials and Procedure

The self-administered online questionnaire was constructed using the survey programme Qualtrics and hosted on an external Qualtrics server. Online and print advertisements invited interested individuals to click on a link that led them to the internet based survey page. The 143-item questionnaire was composed of five standardised measures, plus 12 questions pertaining to demographic background and the nature of the close brush with death. The demographic section captured information such as gender, current age, age at the time of NDE, religious belief, marital status, level of education, ethnicity and number of children.

6.4.1 Measures

The following standardised measures were used in the construction of the survey:

i. Near-Death Experience Scale (Greyson, 1983) (see Appendix C, section 2)

The Near-Death Experience Scale (NDES) is the most popularly used instrument for assessing NDEs. The NDES is comprised of 16 multi-choice questions grouped into four clusters of *cognitive, affective, paranormal,* and *transcendental* elements. The cognitive subscale is represented by four elements pertaining to altered cognitive functioning during the close brush with death, such as time appearing to speed up or slow down. An example item is "Did scenes from your past come back to you"? The affective component refers to intense emotions felt during the experience, such as joy or peacefulness. An item example is "Did you feel a sense of harmony or unity with the universe?" The paranormal component features items such as the sensation of being separated from the body, or witnessing scenes from the future, for example "Did you seem to be aware of things going on elsewhere, as if by ESP?" Items that comprise the transcendental component include the meeting of deceased others or encountering a mystical being or presence, such as "Did you see deceased or religious spirits?"

The scale assigns a weighted score to each of the 16 items, depending on the intensity of experience. For each item, the respondent can choose from three different options, scored from 0-2, where 0 represents 'not present,' 1 represents 'slightly or ambiguously present' and 3 is 'definitively present', although the exact wording differs for each item. For example, with

respect to the experience of altered time, "No perception of altered time" equals 0 points; "Time seeming to go faster or slower than usual" equals 1 point; and the "Perception that everything seemed to be happening at once or time stopped or lost all meaning" equals 2 points. Responses are totalled to give an overall score. Scores can vary from 0-32, and a score of 7 or more is considered indicative of an NDE (Greyson, 1983), with higher scores representing 'deeper' or more intense experiences. Greyson selected 7 as the cut-off point for an NDE as it is one standard deviation below the mean score of a criterion group of NDErs. Greyson claims this should include 84% of all positive cases (assuming a normal distribution of scores), helping minimize the inclusion of false negatives in the NDE group (B. Greyson, personal communication, October 21, 2017). A score below 7 is generally not considered indicative of an NDE. In this study, participants scoring below 7 were reallocated into the nonNDE group.

Khanna and Greyson (2014) also recently categorized NDEs by depth, with NDE Scale scores between 7-14 (one standard deviation below the mean of 15) considered ''subtle,'' those between 15-23 (less than one standard deviation above the mean) considered ''deep,'' and those greater than 24 (greater than 1 standard deviation above the mean) considered ''profound.'' This represents a simple and useful way of referring to NDEs by their relative depth, instead of citing a number or score.

The selection of items for the NDES was determined through pilot studies with persons who had come close to death, which means face validity of the NDE Scale was maximized. In terms of criterion validity, the NDES correlates highly with Ring's (1980) Weighted Core Experience Index, another earlier measure of NDEs (r = .90) (Greyson, 1983). Studies assessing short-term and long-term aftereffects of NDEs (e.g., van Lommel et al., 2001) have cited correlations with NDE Scale scores, which also speaks to the scale's predictive validity. Greyson (1983) also notes lack of correlation between NDE Scale scores and demographic variables (e.g., age, gender, elapsed time since the NDE, mental health), supporting the discriminative validity of the scale. Lange, Greyson and Houran (2015) carried out a latent semantic analysis (a technique to quantify qualitative data) on 863 written NDE accounts, 588 of which had scores on Greyson's NDE Scale. The authors found a hierarchy of experiential items, similar to the NDES, reflected in NDErs' verbal accounts. The authors concluded the intensity of NDErs' experiences can be predicted from their written subjective accounts, strongly supporting the concurrent validity of Greyson's scale.

The NDE Scale has demonstrated high internal consistency (Cronbach's alpha =.88), good split-half reliability (r =.84, p < .001) and test-retest reliability over both a short-term period of six months (r =.92, p < .001) and over the long term (r =.83, p < .001) (Greyson, 1983, 2007). Greyson (2007) demonstrated the stability and consistency of the scale over time, showing participant scores did not change after a 20-year time period.

ii. Death Attitude Profile – Revised (Wong, Reker & Gesser, 1994) (see Appendix C, section 4)

Despite the popularised belief that lack of death anxiety is indicative of denial, Wong and colleagues (1994) proposed in some instances, a lower fear of death may instead correlate to the more positive attitude of acceptance. Hence, the Death Attitude Profile - Revised (DAP-R) is based on the theory that individuals cope with their own death via differing cognitive strategies not always based in denial or fear.

The DAP-R is a 32-item scale that recognises five dimensions of death attitudes; Fear of Death, Approach Acceptance, Neutral Acceptance, Escape Acceptance and Death Avoidance. Fear of Death is comprised of 7 items assessing negative thoughts and feelings surrounding death. Examples include, "Death is no doubt a grim experience", and "I have an intense fear of death". Approach Acceptance consists of 10 items that consider death positively, primarily as a gateway to a pleasant and rewarding afterlife. Example items include "I look forward to a reunion with my loved ones after I die", and "I see death as a passage to an eternal and blessed place". Neutral Acceptance consists of 5 items that frame death as simply a part of life, neither positive nor negative, for example, "Death is a natural aspect of life" and "I would neither fear death nor welcome it". Escape Acceptance includes 5 items where death is welcomed, but as a means of escape from this life. Example items for this attitude are, "Death will bring an end to all my troubles" and "Death is deliverance from pain and suffering". Finally, the attitude of Death Avoidance includes 5 items that measure whether a person avoids thinking or talking about death, for example "I avoid death thoughts at all costs" and "I try to have nothing to do with the subject of death". These five factors appear to be relatively stable (Wong, Reker & Gesser, 1994), however Neutral Acceptance sometimes loads onto two separate factors, suggesting it may not be measuring a unitary construct (Clements & Rooda, 2000; Ho et al., 2010).

Scores for all items are measured using a Likert type scale ranging from 1 to 7 in the direction of *strongly disagree (1)* to *strongly agree (7)*. For each dimension (attitude), a mean scale score can be computed by dividing the total scale score by the number of items forming each scale. Scores can range from 7-49 for Fear of Death, 10-70 for Approach Acceptance, and 5-35 for the dimensions of Escape Acceptance, Death Avoidance and Neutral Acceptance. Higher scores for each factor indicate greater fear, greater avoidance, or higher levels of acceptance, depending on the dimension.

The DAP-R has been shown to be a valid measure with good internal consistency and test-retest reliability (Clements & Rooda, 1999-2000; Currier, Kim, Sandy, & Neimeyer, 2012; Wong, Reker, & Gesser, 1994). Reported alpha coefficients for the five DAP-R subscales include: Fear of Death, .82; Death Avoidance, .87; Approach Acceptance, .91; Escape Acceptance, .81; and Neutral Acceptance, .60 (Clements & Rooda, 1999-2000). For test-retest reliability across scales, coefficients ranged from .61 to .95 (Wong, Reker, & Gesser, 1994). Convergent and discriminant validity has been demonstrated by several studies. Wong, Reker, & Gesser (1994) found Fear of Death and Death Avoidance subscales negatively correlated with psychological well-being and Death Acceptance positively correlated with wellbeing. Clements and Rooda (2000) also found that working with dying patients correlates negatively with Fear of Death, Death Avoidance, and positively with Death Acceptance.

The DAP-R was considered particularly appropriate for the current study as it aims to measure a variety of death attitudes – negative, positive and neutral, rather than focussing solely on negative views of death. Neimeyer et al. (2003) claim the DAP-R is especially well suited to investigation of the ways in which differing cohorts view death (e.g., those defined by age, physical health or life events).

iii. Fear of Personal Death - Revised (Burris & Bailey, 2009; Florian & Kravetz, 1983; Florian & Snowden, 1989) (see Appendix C, section 5)

Based on Florian and Kravetz's (1983) tri-dimensional model of fear of personal death, the Fear of Personal Death Scale (FPDS) is best conceived as an "attributional measure of sources of discomfort when reflecting on one's own mortality" (Neimeyer, Moser, & Wittkowski, 2003, p.58). In contrast to other death anxiety measures, a total score is not

usually calculated. Instead, the scale is designed to measure the *specific objects* of fear related to one's own death, rather than the overall *amount* of fear. Because it assesses a number of different items, it is particularly useful for examining the cultural, personal, and contextual factors (e.g., religion, gender, life events and personality traits) affecting a person's death-related concerns and assessing variations between differing cohorts (Mikulincer & Florian, 2008).

The 31 item self-report questionnaire was originally developed in Hebrew to measure the Israeli population but has been translated into English and successfully used among other populations (e.g., North American), which speaks to its cross-cultural validity (Florian & Snowden, 1989). To further reduce any possible ambiguity amongst English speaking participants, Burris and Bailey (2009) made some minor modifications to the wording of some items. For example, "My life will not have been exploited" was reworded to "My life will not have been lived to its fullest". One item was also dropped from the original scale, "fear of punishment in the hereafter", as it is only relevant to participants defining themselves as religious and who believe in an afterlife – an issue noted by other researchers using the scale (e.g., Florian & Snowden, 1988). These modifications had minimal impact upon the psychometric properties of the instrument and appear to have improved it further (see below). As the intended participants in the current study were also English speaking, the researcher considered Burris and Bailey's (2009) revised version to be the most appropriate.

In total, 30 different fears are assessed by a Likert scale ranging from 1 to 7 in the direction of *strongly disagree (1)* to *strongly agree (7).* Responses indicate the level of agreement or disagreement with each item, beginning with the stem "The thought of my own death disturbs me because….". Example items include "Missing out on what the future will bring", "My loss of connections with loved ones", and "What happens then cannot be known now".

Fears can be grouped into three different clusters: *interpersonal, intrapersonal,* or *transpersonal* concerns. Interpersonal concerns reflect the individual's fears related to themselves and others, for example, the fear of not being able to provide for loved ones after one's death. Intrapersonal beliefs refer to concerns related to the self, for example, the fear of bodily decay or the loss of life's pleasures. Transpersonal fears tap concerns of a transcendental nature, such as uncertainty regarding the existence of an afterlife, or what

happens next. The validity of this three-component structure has found consistent support amongst various studies using the scale (including the revised version) (e.g., Burris & Bailey, 2009; Florian & Har-Even, 1983; Florian & Snowden, 1988; Florian & Snowden, 1989; Mikulincer, Florian, & Tolmacz, 1990).

Burris and Bailey (2009) piloted their modified version on 549 Canadian university students, then subjected items to an exploratory principal components analysis with orthogonal rotation. They extracted five factors that fit well within the three aforementioned clusters : 1) Deprivation (e.g., "the end of my creative activities"); 2) Being forgotten (e.g., "my absence may not be noticed or felt"); 3) Loss of self (e.g., "the decay of my body"); 4) Mystery (e.g., "uncertainty regarding whether my existence will continue") and 5) Other-oriented (e.g., "people close to me will still need me"). The first three factors were grouped under Intrapersonal concerns. Other-oriented referred to Interpersonal concerns, and Mystery fell under Transpersonal concerns. Cronbach's alphas for these five subscales were excellent: Deprivation = .93, Forgotten =.87, Other-Oriented = .87, Mystery = .91, and Loss of Self = .90. Hence, the current study also examined results according to this five-factor structure. Scores can range from 11-77 (Deprivation, 11 items), 4-28 (Mystery, 4 items), 6-42 (Loss of Self, 6 items), 5-35 (Forgotten, 5 items) and 4-28 (Other-oriented, 4 items). Higher scores for each factor indicates a greater level of fear in that area.

The FPDS is considered a well-designed and robust multi-dimensional measure of death anxiety, deserving of broader application (Neimeyer, Moser, & Wittkowski, 2003). It is a psychometrically sound instrument that has demonstrated good to excellent internal consistency, excellent test-retest correlations for reliability, and sound cross-cultural validity (Florian & Snowden, 1989). Convergent and discriminant validity of the instrument has been demonstrated by correlations between independent measures such as attachment style (Mikulincer, Florian, & Tolmacz, 1990), different types of loss (death of parent vs. other relatives; Florian & Mikulincer, 1997) and levels of religiosity (Florian & Kravetz, 1983; Florian & Mikulincer, 1992). Florian and Har-Even (1983) also endorsed its discriminant validity. Cronbach alphas range from .73 to .93 (Burris & Bailey, 2009; Florian & Mikulincer, 1992, 1997; Mikulincer, Florian, & Tolmacz, 1990). Florian and Kravetz (1983) reported a test-retest reliability of the questionnaire that ranged from .50 to .91.

iv. After Death Belief Scale (Burris & Bailey, 2009) (see Appendix C, section 3)

The After Death Belief Scale (ADBS) is a 24 item scale designed to measure what an individual believes will happen to the self after death. The ADBS was selected for this research as it incorporates a variety of core post-mortem continuation beliefs that are not necessarily contingent upon a religious interpretation, or presumptuous of a specific type of afterlife – a perspective that has been lacking in both NDE and other death-related research.

The ADBS is based upon religious and philosophical thought and incorporates both Western and Eastern traditions. The five subtypes in core belief identified are *Annihilation, Disembodied Spirit, Spiritual Embodiment, Reincarnation*, and *Bodily Resurrection*. These subtypes are derived from Burris and Bailey's theoretical model (discussed in Chapter 2) based upon differing understandings regarding the fate of; *consciousness*, or awareness of the self; *identity* - whether the person's recognisable personality will survive; and *physicality* - whether the person's body will be restored or replaced.

Each subtype is composed of four items pertaining to a specific type of belief. Responses ranging from 1 (strongly disagree) to 7 (strongly agree), and begin with the stem "When I die, I believe that . . .." The Annihilation (AN) subscale predicts no agent will survive death - the individual will cease to exist in every way. An example item is "My personality, consciousness—all that I am—will cease to exist". Disembodied Spirit (DS*)* believes that consciousness will remain but individual identity and the physical body will not, for example "There will be no more "me," in the limited sense—only pure, eternal Consciousness". Spiritual Embodiment (SE*)* assumes that both consciousness and identity will continue in a "spiritual body", but the physical body will be destroyed. An example item for this subscale is "Only my physical body dies: My spirit will live on in a recognisable form*"*. Reincarnation (RE) regards consciousness as remaining intact but personal identity will be lost and a new physical form will be adopted, for example "My soul will eventually be "recycled" – that is, reincarnated in a different physical body". Bodily Resurrection (BR) assumes that consciousness and identity will continue to exist and the physical body will be restored and perfected. An example item of BR is "My soul and my physical body will be reunited at some point in the future." The scale also measures *Belief/Behaviour Efficacy (BBE),* or the extent to which the participant believes their actions and thoughts will affect their fate after death, for example, "What happens to me afterward is affected by how I live now". Scores for each

subtype can range from 4-28, with higher scores signalling greater belief in that subtype. In this study, the BBE scale was dropped from analyses as the research is primarily interested in the specific afterlife belief types.

As after death beliefs are an under researched area (particularly multi-dimensional conceptualisations), data on the psychometric properties of the ABDS is limited. However, Burris and Bailey's (2009) study of 549 university students found these subtypes accurately mapped to self-reported religious/spiritual belief ($p < .001$), supporting the scale's construct validity. The authors also found each subtype related somewhat differently to death-related concerns (as measured by the FPDS), further supporting the validity and conceptual distinctness of each subtype. Initial findings have also indicated good to excellent internal consistency (Cronbach alphas: AN= .99, SE=.90, RE=.95, BR=.84, and DS=.76). Anglin (2014) also found each subscale achieved acceptable reliability (α's $\geqslant 0.75$). These preliminary findings strongly suggest the scale is suitable for the current study, especially given its multidimensional nature.

6.5 Data Analysis

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS), version 24 (IBM, 2016). Univariate statistics were used to generate means, standard deviations, and response ranges for demographic data and measures. Preliminary analyses were conducted to assess data normality for each of the continuous variables. Bivariate and multivariate statistical analyses were then performed to determine group differences. If significant effects were detected at the bivariate level, Standard Multiple Regressions were conducted to further examine the relationship between multiple dependent variables and a single dependent variable, for example, to identify which aspects of the NDE accounted for the most variance in levels of death acceptance. Further information about assumption checking and type of statistical test used is provided prior to each analysis.

When normality assumptions were violated, equivalent nonparametric tests were conducted. A decision was made not to transform any data, as the researcher wanted the data to 'speak for itself'. That NDE data was skewed compared to others was not an unexpected finding, and it was likely skewed for a reason. As Norris and Aroian (2004) explain, real world data is rarely symmetrical and transforming data is not always necessary or advisable. Rather

than attempting to ‘fix’ data to follow a normal distribution curve, using a statistical tool that does not require normally distributed data is often a better option (Buthmann, 2018; Changyong et al., 2014; Norris & Aroian, 2004). Changyong et al. (2014) claim transformation can sometimes introduce new issues that are more problematic than a non-normal distribution. As such, the authors recommend in most circumstances where data is skewed, social science researchers should use alternative analytic methods that are not dependent on the distribution of the data.

Although sample groups were of moderate size (>40), the level of statistical significance was set at $p = < 0.01$, to avoid any type I errors, or the incorrect rejection of a true null hypothesis (a "false positive"). Cohen (1988) explains that in scientific research, making a positive claim (citing an effect when there is none) is generally considered more serious than making a false negative one, therefore it is better to err on the side of caution. With smaller group sizes, increasing alpha is one way of increasing power (Coakes, 2013).

Cohen’s (1988) criteria were used to calculate effect sizes. For *t*-tests and correlation coefficients, Cohen’s *d* guidelines recommend a value less than .01 indicates a minimal effect, 0.1- 0.3 a small effect, 0.3-0.5 a moderate effect, and greater than 0.5 a large effect. For ANOVAs, η^2 (Eta squared) was used, rather than Cohen’s *d*. According to Cohen’s (1988) guidelines, in this case the resulting number can be interpreted as either a small effect: 0.01, medium: 0.059, or large: 0.138. For nonparametric r_s values, .00-.19 is *very weak*, .20-.39 *weak*, .40-.59 *moderate*, .60-.79 *strong*, and .80-1.0 *very strong*.

For post-hoc analyses using the Dunn-Bonferroni test for multiple comparisons an initial *p* value of .05 (rather than .01) was selected, as Dunn’s test is already considered a very conservative test – especially for larger numbers of comparisons (“Dunn’s Test: Definition”, 2017).

Chapter 7.

Quantitative Results

This chapter presents the quantitative results from the online questionnaire. Descriptive statistics for each measure are displayed, followed by results of bivariate and multivariate statistical analyses. Finally, a summary of results is presented to conclude the chapter.

7.1 Measures

Table 7.1 outlines the means, standard deviations, and Cronbach's alphas for each of the measures. Scores for the entire sample, the NDE, nonNDE and control groups are displayed separately. With the exception of Neutral Acceptance and the cognitive and paranormal subscales of the NDES, Cronbach's alpha figures demonstrate each scale had acceptable reliability by standard psychometric criteria (Bland & Altman, 1997). Greyson (B. Greyson, personal communication, October 21, 2017), explains that the NDES subscales were not designed as standalone measures, hence low Cronbach alphas is perhaps to be expected, especially when considering the small number of items comprising the subscale (four). Although other NDE researchers have used the subscales in analyses (despite low alphas), in this study only those with adequate reliability (alphas between .70 and .90) were used. Low Cronbach alphas for Neutral Acceptance have been noted by other authors using the DAP-R. As the subscale only contains 5 items, a decision was made to retain neutral acceptance in analyses, in its current form (without removal or addition of other items).

Table 7.1

Range, Means, Standard Deviations (SD), and Cronbach's Alphas (α) for Measures

Measure	**Range**	**Total Mean (*SD*)** (*n*=174)	**Mean NDE Group** (*n*=59)	**Mean nNDE Group**(*n*=46)	**Mean Control Group** (*n*=69)	***α***
NDE Scale	7-29	n/a	15.56 (5.78)	n/a	n/a	.84
Cognitive Subscale	0-8		3.67 (2.05)			.65
Affective Subscale	0-8		4.84 (2.87)			.83
Paranormal Subscale	0-8		3.40 (1.53)			.62
Transcendental Subscale	0-8		3.64 (2.42)			.73
Afterdeath Belief Scale						n/a
Annihilation	4-28	12.80 (7.08)	10.02 (6.80)	14.50 (8.36)	14.04 (6.54)	.87
Bodily Resurrection	4-28	10.35 (2.25)	10.79 (6.32)	8.51 (5.93)	10.70 (7.92)	.86
Spiritual Embodiment	4-28	19.43 (6.67)	22.14 (5.26)	16.78 (7.92)	18.82 (6.05)	.86
Reincarnation	4-28	14.16 (7.12)	17.06 (6.79)	12.57 (7.25)	12.66 (6.58)	.93
Disembodied Spirit	4-28	16.23 (6.10)	19.02 (6.69)	14.24 (6.06)	15.10 (4.58)	.83
Fear of Personal Death Scale Revised						n/a
Mystery	4-28	15.04 (7.05)	11.56 (6.72)	16.11 (6.58)	17.42 (6.48)	.82
Deprivation	11-72	40.46 (17.09)	32.14 (15.10)	44.53 (17.18)	45.05(16.15)	.94
Loss of Self	7-47	18.81 (9.99)	15.69 (9.98)	19.91 (10.10)	20.88 (9.39)	.91
Forgotten	5-35	17.14 (8.09)	15.16 (7.81)	15.13 (7.30)	20.19(7.98)	.83
Other-oriented	4-28	17.95 (6.63)	17.25 (6.89)	17.82 (6.24)	18.66 (6.70)	.84
Death Attitude Profile Revised						n/a
Approach Acceptance	10-70	44.46 (17.10)	51.05 (14.22)	36.31 (17.31)	44.43 (17.01)	.95
Neutral Acceptance	13-35	27.83 (4.54)	28.45 (4.45)	21.13 (4.06)	27.09 (4.88)	.61
Escape Acceptance	5-35	21.30 (7.67)	23.18 (8.31)	19.20 (6.92)	21.14 (7.30)	.90
Death Avoidance	5-35	13.76 (7.54)	10.55 (6.37)	15.52 (8.13)	15.24 (7.27)	.90
Fear of Death	7-49	21.42 (10.99)	14.91 (8.60)	24.40 (11.30)	24.91 (10.21)	.89

Before discussing the results of the bivariate and multivariate analyses between measures, an overview of the participant NDEs are presented below.

7.2 Characteristics of Participant NDEs

NDE Scale scores for the NDE group ranged from 0-29, with a mean NDE score of 15.56 (*SD* = 5.78). In accordance to Khanna and Greyson's criteria (2013), 29 (49%) had a subtle NDE (a score between 7-14), 24 (40%) had a deep NDE (a score between 15-23), and 6 (11%) had a profound experience (a score of 24 and over).

Table 7.2 details the frequency of NDE characteristics reported on the NDE Scale. A positive response to the item was determined by a score of either 1 or 2 points. The exception to this was the out-of-body experience, which for the purposes of this study was defined as the sense of having clearly left the body and existing outside it. This experience was determined by a score of 2 points. The most commonly reported elements were a feeling of peace (85%), an altered sense of time (85%), and senses more vivid than usual (83%).

Table 7.2

Frequency of Near-Death Experience Elements Reported on the Near-Death Experience Scale (NDES)

NDES Element	**Frequency (%)** (*n*= 59)
Cognitive Elements	
Altered sense of time	50 (85%)
Accelerated thought processes	32 (54%)
Life review	18 (31%)
Sudden understanding	33 (56%)
Affective Elements	
Feeling of peace	50 (85%)
Saw/felt surrounded by light	35 (59%)
Feeling of joy	34 (58%)
Sense of cosmic unity/oneness	45 (76%)
Paranormal Elements	
Out-of-body experience*	25 (42%)
Heightened senses	49 (83%)
Extrasensory perception	17 (29%)
Visions of the future	10 (17%)
Transcendental Elements	
Unearthly environment	31 (53%)
Saw/sensed spirits	27 (46%)
Perception of a border	33 (56%)
Sense of mystical being or presence	35 (59%)

* Clearly left the body and existed outside it

7.3 Research Questions

This section discusses the results of bivariate and multivariate analyses conducted in response to the research questions posed in Chapter 5. To aid recall, each of these questions are reiterated prior to detailing the results.

7.2.1 NDErs' death related attitudes

What are near-death experiencers' (NDErs') attitudes to death, and do these differ from those who have come close to death but with no NDE (nonNDErs), and those who have never been close to death (controls)?

The DAP-R measures five different types of death attitudes, including acceptance, fear and avoidance. A series of one-way ANOVAs were considered appropriate to test for any difference in DAP-R scores between the three sample groups. Prior to each analysis, normality assumptions (skewness, kurtosis and Shapiro-Wilk statistics) were checked for each group as well as the full sample. Using the boxplot function in SPSS (Coakes, 2013), one outlier was detected in the NDE group for Death Avoidance and Fear of Death scores, so this was removed from the analysis. Shapiro-Wilk statistics indicated assumptions of normality were violated for all five subscales (for the full sample and NDE group), so five Independent Samples Kruskal-Wallis (a nonparametric equivalent to one-way ANOVA) tests were conducted. Alphas were adjusted by the Bonferroni correction for multiple tests, resulting in a p value of .002.

As Table 7.3 indicates, there were significant differences between the three groups for Approach Acceptance, Fear of Death and Death Avoidance. Approach Acceptance scores indicated a significant difference of mean ranks between the three groups, with a medium effect size. Dunn's post hoc tests (adjusted using the Bonferroni correction) to test pairwise comparisons found the NDE group had a significantly higher mean rank than the nonNDE group ($H = 39.37$, $p < .000$), indicating greater levels of acceptance for NDErs. There were no significant differences observed between the NDE and control group.

A significant difference was found for scores on the DAP-R Fear of Death subscale, with very large effect. Post hoc pairwise comparisons found the NDE group had a significantly

lower mean rank than the nonNDE (H = -43.03, p <.000) and control (H = -46.04, p <.000) groups, indicating they had less fear of death. There was no significant difference between the nonNDE group and the control group.

A significant difference was also observed for scores on the DAP-R Death Avoidance subscale, with medium effect. Post-hoc pairwise comparisons revealed the NDE group had a significantly lower mean rank than the nonNDE (H = -32.56, p = .001) and control (H = -32.47, p = .002) group. Again, there was no significant difference between the nonNDE group and the control group. There were no significant differences between the groups for Neutral Acceptance and Escape Acceptance.

Table 7.3

Kruskal-Wallis Tests for the Death Attitude Profile Scale-Revised (DAP-R) According NDE, NonNDE and Control Groups

DAP-R Subscale	Group	*N*	*Mean Rank*	*H*	*df*	*P**	*η²*
Approach Acceptance	NDE	56	100.84				
	nonNDE	45	61.47	16.76	2	.000	.10
	Control	65	83.82				
Fear of Death	NDE	55	50.53				
	nonNDE	45	95.58	36.10	2	.000	.22
	Control	64	99.01				
Death Avoidance	NDE	55	60.93				
	nonNDE	46	95.38	18.80	2	.000	.11
	Control	66	95.30				
Neutral Acceptance	NDE	55	91.13				
	nonNDE	46	85.07	3.13	2	.20	.02
	Control	65	75.84				
Escape Acceptance	NDE	55	95.39				
	nonNDE	45	71.17	6.49	2	.04	.03
	Control	66	81.79				

* *P* value set to .01. Adjusted for ties.

A Pearson's correlation coefficient was considered appropriate to assess for significant relationships between type of death attitude and scores on the NDES. Inspection of skewness, kurtosis and Shapiro-Wilk statistics indicated the assumptions of normality were met for the NDES. However, assumptions were violated for the DAP-R subscales, so a Spearman's rank-order correlation was performed instead. Deeper NDEs were associated with lower levels of death fear with moderate effect [r_s = -.41, p = .001], higher levels of approach acceptance with large effect [r_s = .57, p < .000], higher levels of escape acceptance with weak effect [r_s =.38, p = .003].

The DAP-R and Demographic Variables. As discussed in the literature review, death attitudes are sometimes correlated with the demographic variables of gender, religious belief, age and ethnicity. To assess whether the three groups were statistically comparable in terms of these demographics, a series of Kruskal Wallis tests were conducted. Results showed the distribution of gender, religious belief and ethnicity was not significantly different between the three groups. A significant difference was found for age (H = 43.95, p = .000). Post-hoc pairwise comparisons revealed the NDE group was older than the nonNDE (H = 30.06, p = .006) and control group (H = 58.57, p = .000). The nonNDE group was also older than the control group (H = 28.52, p =.008).

To control for the effect of age on DAP-R scores, three ANCOVAs were conducted for DAP-R Approach Acceptance, Fear of death and Death Avoidance (previously significant results), [fixed factor: group type (NDE, nonNDE, control); covariate: age]. ANCOVA assumptions were met, for example, Levene's Test of Equality of Error Variances was non-significant for all three subscales, thus the assumption of homogeneity of variance was not violated. The interaction between group and age was not significant, hence the homogeneity of regression assumption was not violated. As seen in Table 7.4, there was a significant effect of group type on DAP-R scores after controlling for the effect of age. Inspection of adjusted means showed the NDE group had higher scores for Approach Acceptance, and lower scores for Fear of Death and Death Avoidance, compared to nonNDE and control groups.

Table 7.4

ANCOVA for Death Attitude Profile Scale-Revised Subscales (Approach Acceptance, Fear of Death and Death Avoidance) with Group (NDE, nonNDE, control) as a Fixed Factor and Age as Covariate

Predictor	*F*	*df*	*P**	*ηp²*
Approach Acceptance				
Group (NDE, nonNDE, Control)	13.29	2	.000	.14
Age	5.44	1	.021	.03
Fear of Death				
Group (NDE, nonNDE, control)	28.88	2	.000	.16
Age	5.62	1	.004	.07
Death Avoidance				
Group (NDE, nonNDE, control)	11.35	2	.001	.08
Age	6.80	1	.001	.07

* *P* value set to .01.

A criticism of previous research has been the overuse of known NDErs (such as IANDS members) primarily from North America. To determine whether results may have been influenced by the North American participants, DAP-R results were assessed for the Aotearoa New Zealand sample only (*N*=59), based on the premise they would less likely have participated in previous research. Inspection of skewness, kurtosis and Shapiro-Wilk statistics indicated the assumption of normality were supported for each of the three conditions, so a series of five ANOVAs were independently conducted. Levene's statistic was non-significant, and thus the assumption of homogeneity of variance was not violated. ANOVA results for DAP-R approach acceptance scores remained significant [$F(2, 59) = 7.77$, $p = 0.01$, η^2=.22], with large effect. Tukey's post-hoc analyses showed NDErs (N = 23) scored significantly higher than nonNDErs (N = 20) (p = .001), but not controls (N = 16). However, there were no significant differences for the other DAP-R attitudes.

Do the objects of fear differ between NDErs, nonNDErs, and those who have never been close to death, and if so, in what way?

To determine whether there were any differences in type of fears held by each group, scores on the FPDS-R were compared. Shapiro-Wilk statistics indicated assumptions of normality were violated for each of the variables. Except for 'other-oriented' fears, skewness for each of the factors for the NDE group was moderately positive (skewed to the right) and kurtosis values were negative, indicating a flatter distribution. NonNDE and control group data tended to display a slight negative skew and negative kurtosis. Five Kruskal-Wallis tests were therefore considered appropriate. Three outliers were detected while checking for data normality, so these cases were excluded from the analysis. Table 7.4 details the results of analyses according to the FPDS-R's five factor structure – mystery, other-oriented, loss of self, forgotten and deprivation. The Bonferroni correction for multiple tests was applied, resulting in an adjusted *p* value of .002.

As shown, the transcendental (mystery) consequences of death displayed the most significant difference, with a large effect size. Dunn's post-hoc pairwise comparisons found the median score for the NDE group was significantly lower than the nonNDE group (H = -31.73, p = .003, adjusted using the Bonferroni correction), and the control group (H = -41.09, p < .000), indicating NDErs had less fears in this area. There was no evidence of a difference between controls and nonNDErs.

Two other significant findings related to intrapersonal concerns, specifically the fear of deprivation at death, with large effect. Dunn's post hoc pairwise comparisons indicated the median score for the NDE group was significantly less than the nonNDE group (H = -36.17, p < .001) and the control group (H = -37.79, p < .000), indicating they had less fears in this area. No significant differences were found between the control group and the nonNDE group. NDErs also had significantly lower scores (less fear) than controls for fear of being forgotten (H = -30.01, p = .002), however there was no significant differences for other pairwise comparisons.

Table 7.5

Kruskal-Wallis Tests for the Fear of Personal Death Scale-Revised (FPDS-R) According to NDE, NonNDE and Control Groups

FPDS-R Factor	Group	*N*	*Mean Rank*	*H*	*df*	*P**	*η²*
Deprivation	NDE	58	61.68				
	nonNDE	45	97.84	21.80	2	.000	.13
	Control	67	99.46				
Mystery	NDE	58	57.97				
	nonNDE	44	89.49	28.00	2	.000	.17
	Control	63	103.22				
Forgotten	NDE	58	73.57				
	nonNDE	45	73.96	14.99	2	.001	.09
	Control	67	103.58				
Other Oriented	NDE	57	80.36				
	nonNDE	45	82.99	1.46	2	.481	.004
	Control	65	90.60				
Loss of Self	NDE	58	68.57				
	nonNDE	44	91.09	10.54	2	.005	.06
	Control	66	95.63				

*Adjusted for ties. *P* value set to .01.
Note: Higher mean rank indicates greater fears.

Specific objects of fear. Mean scores for each of the items on the FPDS-R were examined to identify the highest and lowest fears for each group. NDErs had low fears concerning "the end of my ability to think" and "uncertainty regarding whether my existence will continue". The most feared aspects were "people close to me will still need me", and "sadness among my friends and relatives", as shown in Table 7.5.

Table 7.6

Highest and Lowest Mean Scores for Items on the Fear of Personal Death Scale-Revised

Group	Type of Fear	
	Highest	Lowest
NDE (*n*=59)	1. People close to me will still need me 2. I will be unable to provide comfort for people close to me 3. Sadness among my friends and relatives	1. The end of my ability to think 2. Uncertainty regarding whether my existence will continue 3. My loss will not hurt people close to me
nonNDE (*n*=45)	1. My loss of connections with loved ones 2. I will be unable to provide comfort for people close to me 3. Sadness among my friends and relatives	1. I will be forgotten 2. I will no longer be recognisable as a person 3. My absence will not be felt
Control (*n*=67)	1. What happens then cannot be known now 2. My loss of connections with loved ones 3. I will be unable to provide comfort for people close to me	1. My body will lose its form 2. The decay of my body 3. The destruction of my personality

7.2.2 The reasons behind any change in attitude and beliefs

Are there any relationships between certain features of the NDE, and corresponding death attitudes?

To determine whether certain aspects of NDEs were associated with death attitudes, data were also analysed according to the affective and transcendental subscales of the NDES (those demonstrating reliable alpha coefficients). As previously mentioned, inspection of skewness, kurtosis and Shapiro-Wilk statistics indicated the NDE group DAP-R scores did not meet the assumptions of normality, so a Spearman's Rho was performed to identify any correlations between NDES subscales and the DAP-R subscales of Death Avoidance, Fear of Death and Approach Acceptance - the three attitudes previously demonstrating significant results. Significance values were adjusted by the Bonferroni correction for multiple tests (resultant $p = .002$).

A significant positive correlation with large effect existed between Approach Acceptance and the transcendental subscale [r_s=.46, $p < .000$] and affective subscale [r_s=.42, *p*

= .001]. Fear of Death was negatively correlated with the affective subscale [r_s = -.38, p = .002]. No significant relationships for Death Avoidance were yielded.

Associations between singular features of the NDE and death attitudes. Some NDE authors have proposed certain aspects of the NDE may be responsible for a reduced fear of death, for example the out-of-body experience, light, or the meeting of deceased loved ones. To investigate these claims, the relationships between singular characteristics (determined by each item on the NDES) and death attitudes for the NDE group were assessed. Shapiro-Wilk statistics indicated normality assumptions were violated for the DAP-R, so a Spearman's correlation was conducted. Significance values were adjusted by the Bonferroni correction for multiple tests.

Table 7.6 delineates the NDES items significantly correlated with DAP-R Fear of Death and Approach Acceptance, the two attitudes identified as significant in the previous analysis.

Table 7.7

Spearman's Rank-Order Correlations for Items on the NDE Scale (NDES) Significantly Correlated with DAP-R Approach Acceptance and Fear of Death

NDES Feature	**DAP-R Fear of Death**	**DAP-R Approach Acceptance**
Saw or felt surrounded by a brilliant light		.42*
Feelings of joy		.48*
A feeling of peace or pleasantness	-.44*	
Senses more vivid than usual	-.42*	
Encountering a mystical being or presence		.41*

*p <.002 (adjusted by the Bonferroni correction for multiple tests)

Using the variables identified in the above analyses, a Standard Multiple Regression Analysis was then conducted to determine which of the NDE scale items were responsible for the most variance in approach-oriented acceptance scores. No outliers were identified and assumptions of linearity, homoscedascity and independence of residuals were met. For example, mahalanobis distance indicated no cases exceeded the critical $\chi 2$ for df = 2 (at α = .001) of 13.816, and a scatterplot indicated no clear relationship between the residuals and predicted values. Regression standardised residuals for the dependent variable also indicated a normal distribution.

Results revealed a large effect according to Cohen's (1988) criteria, with the combined variables accounting for 34% of the variance in DAP-R Approach Acceptance scores, R^2 = .34, adjusted R^2 = .31, F (4, 53) = 8.75, p < .000, f^2 = .64. As shown in Table 7.7, 'feelings of joy' was the most significant predictor variable for approach acceptance scores followed by encountering a mystical being or presence.

Table 7.8

Standard Multiple Regression Analysis for Near Death Experience Scale Items and Approach Acceptance

Predictor Variable	***B***	***(ß)***	***t***	***p***
Feelings of joy	6.05	.389	2.97	.005
Saw or felt surrounded by a brilliant light	1.89	.116	.807	.424
Encountering a mystical being or presence	4.13	.269	2.09	.041

7.2.3 An assessment of NDErs' post-mortem survival beliefs

Do NDErs differ from nonNDErs and controls in terms of their post-mortem survival beliefs?

One of the primary objectives of this research was to investigate NDErs' post-mortem beliefs and examine how they might differ from others. To do this, scores on the ADBS were compared. Shapiro Wilks statistics showed assumptions were violated for each of the measures (for the total sample), so five Kruskal-Wallis tests were conducted to compare type and level of belief held by the participant groups. One outlier was identified in the NDE group, so this was removed from the analysis. As evidenced in Table 7.8, significant differences were found for each of the ADBS subscales, with medium effect.

Table 7.9

Kruskal-Wallis Tests for After Death Belief Scale (ADBS) Scores According to NDE, NonNDE and Control Groups

ADBS Subscale	Group	*N*	*Mean Rank*	*H*	*df*	*P**	η^2
Annihilation	NDE	59	66.50				
	nonNDE	45	94.25	13.77	2	.001	.08
	Control	67	97.22				
Reincarnation	NDE	58	104.83				
	nonNDE	44	74.20	14.04	2	.001	.08
	Control	67	75.90				
Bodily Resurrection	NDE	59	88.19				
	nonNDE	45	67.17	8.78	2	.012	.05
	Control	66	94.36				
Spiritual Embodiment	NDE	59	105.57				
	nonNDE	45	69.30	16.04	2	.000	.10
	Control	66	78.61				
Disembodied Spirit	NDE	59	107.96				
	nonNDE	45	71.29	18.08	2	.000	.11
	Control	67	76.54				

**P* value set to .01. Adjusted for ties.
Note: Higher mean ranks indicate greater level of belief.

To find out where differences occurred, Dunn's post hoc pairwise comparisons were conducted. Significance values were adjusted by the Bonferroni correction for multiple tests. Results revealed large mean rank differences between the NDE group and the other group scores, with NDErs scoring significantly higher than nonNDErs and controls for the belief types of Spiritual Embodiment, Reincarnation, and Disembodied Spirit, with the latter showing the most pronounced difference. They scored significantly lower than the other groups for belief in Annihilation. The NDE group did not differ from nonNDErs and controls with respect to Bodily Resurrection. Table 7.9 displays the significant pairwise differences between the NDE group and others.

Table 7.10

Dunn's Pairwise Comparisons for NDE, NonNDE and Control Groups According to After Death Belief Scale (ADBS) Subtypes

ADBS Subscale	Group Pairs	Test Statistic	Std Error	Std Test Statistic	*P**
Annihilation	NDE/nonNDE	-27.75	9.76	-2.84	.027
	NDE/control	-30.72	8.86	-3.47	.002
Reincarnation	NDE/nonNDE	30.63	9.78	3.13	.010
	NDE/control	28.94	8.77	3.30	.006
Spiritual Embodiment	NDE/nonNDE	36.26	9.72	3.73	.001
	NDE/control	26.96	8.80	3.06	.013
Disembodied Spirit	NDE/nonNDE	36.67	9.78	3.75	.001
	NDE/control	31.41	8.82	3.56	.002
Bodily Resurrection	NDE/nonNDE	21.02	9.64	2.18	.175
	NDE/control	-6.16	8.73	-7.10	1.00

**P* value set to .05. Significance values adjusted by the Bonferroni correction for multiple tests.

Do NDErs exhibit a tendency toward any type of post-mortem belief?

Within the NDE group, an assessment of mean scores showed the most common belief was Spiritual Embodiment (M = 22.14, SD = 5.26), followed by Disembodied Spirit (M = 19.02, SD = 6.69). The lowest mean score represented Annihilation (M = 10.02, SD = 6.80),

followed by belief in Bodily Resurrection (M = 10.79, SD = 6.32). Figure 7.1 displays a comparison of means for each after death belief.

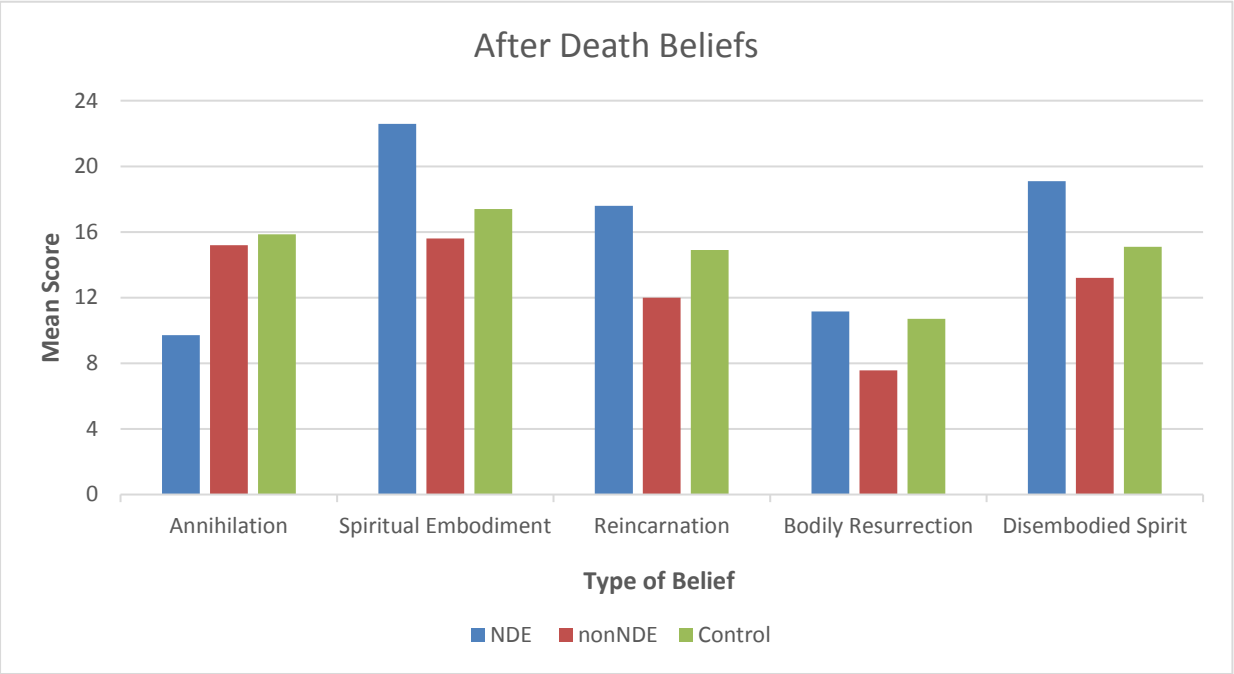

Figure 7.1. A Comparison of Mean Scores on the AfterDeath Belief Scale (ADBS) for NDE Group (NDE), NonNDE Group (nonNDE) and Participants Who Had Never Come Close to Death (Control)

Depth of NDE was also correlated with type of after-death belief. Normality assumptions were violated for the NDE group ADBS scores, so five Spearman's correlation tests were performed. Results revealed a positive association with medium effect between scores on the NDES and belief in SE [$r(55) = .35$, $p < .01$] only.

7.4 Summary of Results

Significant differences were found between NDErs, nonNDErs and those who had never come close to death for the majority of measures employed in this study. Overall, NDErs had more positive attitudes to death than both nonNDErs and controls, demonstrating significantly higher levels of approach acceptance, lower levels of fear of death and less death avoidance. The types of features experienced during the NDE were associated with certain

death attitudes. The transcendental features of the NDE showed the strongest positive relationship with death acceptance, whereas fear of death was negatively correlated with the affective features.

From a multidimensional perspective, the type of fears expressed differed between the groups. NDErs reported significantly less fear related to transcendental concerns, such as the uncertainty of what happens next. They also expressed fewer intrapersonal fears, especially the fear of deprivation at death. Their level of interpersonal fear was similar to the other groups, and primarily represented fears connected to their loved ones.

NDErs exhibited significantly greater belief in some form of post-mortem continuation after death, particularly spiritual embodiment. Conversely, NDErs had significantly lower mean ranks for belief in annihilation at death. Those who believed in spiritual embodiment were significantly more likely to accept death. Interpretation and discussion of the above findings will be the subject of Chapter 10.

Chapter 8.

Qualitative Methodology

The qualitative aspect of this thesis explored NDErs' thoughts and beliefs about death from a subjective, or emic perspective. This part of the thesis primarily addressed research question 5.1.2 - the reasons behind any changed attitudes to death. It also partially addressed question 5.1.1 by examining the specific ways attitudes and behaviour changed after the NDE. NDErs post-mortem beliefs, including if and how they related to death attitudes, were also investigated, further addressing 5.1.3.

To gather this information, a series of semi-structured interviews were conducted with 17 NDErs, focussing on the phenomenology of their experience, the meaning it had for them, and any resultant impact on their attitude and beliefs about death. This chapter describes the participants who took part, the methods used and how data was analysed.

8.1 Ethics

Ethics approval for this aspect of the research was sought and granted by the Southern B committee of Massey University Human Ethics (HEC: Southern B Application 15/42). Before the interview commenced, participants read and signed a consent form and release of transcript form (Appendix E and F). If the interview took place over Skype, the signed forms were scanned and emailed to the researcher prior to the interview. The participants' rights were also explained verbally, they were assured no identifying information would be published, and that they had a right not to answer any question. Participants also indicated whether they would like a copy of the written transcript after the transcription process was complete.

The researcher's professional experience in qualitative and ethnographic research, as well as therapy-based interview techniques (information gathering), often of a sensitive nature, meant the interview was conducted sensitively and managed appropriately when emotional release occurred. Unconditional positive regard for the participant was displayed at all times.

A list of qualified counsellors and clinical psychologists was also made available to the participants, in the event they required further support following the interview.

Transcriptions were conducted by the researcher only. Questionnaire and transcribed interview data was de-identified by assigning a code to each participant and stored in a password-protected folder on the computer of the researcher, along with the scanned consent forms. Audio recordings of the interviews were converted into an MP3 audio file and were also saved in a separate password-protected folder on the computer of the researcher. These will be destroyed after a period of five years following completion of the thesis.

8.2 Participants

8.2.1 Recruitment Process

Six participants (out of six contacted) agreed to take part in an interview after being approached by the interviewer. These participants were made aware to the researcher via existing acquaintanceship networks (snowball technique), or through spontaneous encounters. Upon hearing the person had had an NDE, he or she was invited to take part in the study.

To recruit further participants for the study, Massey University issued a press release that was sent to local newspapers in the Nelson Marlborough area of Aotearoa New Zealand (where the researcher resides). The *Nelson Evening Mail* then telephoned the researcher for an interview and subsequently published an article about the research that included the researcher's email contact details. As this was also published online, the article was accessible internationally, resulting in several enquiries being made from potential participants based overseas. In total, 38 individuals emailed the researcher expressing a willingness to be interviewed.

Information about the nature of the study (see Appendix D) and the NDES (Greyson, 1983; see Appendix D, section 2) was emailed to all respondents in the initial stages of contact to determine their eligibility for the study (ascertained by their score on the NDES). Several individuals did not reply, and due to other factors such as respondents not meeting the criteria for an NDE (a score of less than 7 on the NDES), and time constraints on behalf of the

researcher, the final sample was capped at 17 participants. Guidelines for determining non-probabilistic sample sizes suggest sample size typically relies on the concept of "saturation," or the point at which no new information or themes are observed in the data (Guest et al., 2006). Guest et al. (2006) indicate saturation usually occurs within the first 6-12 interviews, hence a total of 17 interviews was considered more than sufficient for the purposes of this research.

8.2.2 Participant Demographics

The participants ranged in age from 25 to 73 years old. Twelve were female and five were male. Nine were Aotearoa New Zealand Caucasian, two were Aotearoa New Zealand Māori, one was Australian Caucasian, three were North American Caucasian, one was Asian (Filipino), and one was English Caucasian. One of the participants was based in the United States and the remaining were resident in Aotearoa New Zealand. For a demographic description of the participant sample, including the cause of the NDE, see Table 9.2 below. The participant ID represents a unique code that also denotes the country of origin (e.g., Aotearoa New Zealand = NZ), and the gender (e.g., female = F) of the individual.

Table 8.1

Demographic Characteristics of Participant Sample

Participant ID	Gender	Age	Age at NDE	Cause of NDE	Religious Belief Before NDE	Religious Belief After NDE	Ethnicity	Marital Status	Education
CA1F	f	65	17	complications of pregnancy	Atheist	Spiritual	North American Caucasian	married	tertiary
PH1F	f	60	50, 58	cardiac arrest	Christian	Christian	Filipino Asian	married	tertiary
NZ1F	f	38	2*,22	anaphylactic reaction	Christian/ Spiritual	Christian/ Spiritual	NZ Māori	married	tertiary
NZ2F	f	53	8	asphyxiation	Atheist	Atheist	NZ Caucasian	single	tertiary
NZ3M	m	70	42	cardiac arrest	non-practising Christian	Spiritual	NZ Caucasian	married	secondary
NZ4F	f	62	23	drowning	Agnostic	Agnostic	NZ Caucasian	single	secondary
NZ5F	f	43	37	severe depression /suicidal	Atheist	Spiritual	NZ Caucasian	married	tertiary
NZ6M	m	46	10,12	illness	non-practising Christian	Spiritual	NZ Caucasian	married	tertiary
NZ7F	f	25	21	drowning	non-practising	Buddhist	NZ Caucasian	single	tertiary

					Buddhist				
NZ8M	m	58	22	drowning	Atheist	Spiritual	NZ Caucasian	married	secondary
NZ9F	f	73	36	complications of surgery	Atheist	Atheist	NZ Caucasian	married	tertiary
NZ10F	f	48	45	cardiac arrest	Agnostic/ Atheist	Māori indigenous	NZ Māori	widow	tertiary
NZ11F	f	41	26	drowning	non-practising Christian	Spiritual	NZ Caucasian	single	tertiary
US1F	f	60	2*, 36	complications of surgery	Catholic/ Atheist	Spiritual/ Daoism	North American Caucasian/ Native American	single	tertiary
AU1M	m	59	49	asthma attack	Hindu/ Buddhist	Buddhist	Australian Caucasian	de-facto	secondary
US2F	f	44	44	anaphylactic reaction	Christian	Christian/ Spiritual	North American Caucasian	single	tertiary
UK1M	m	61	55	traumatic injury	non-practising Christian	Spiritual	European Caucasian	married	tertiary

*Life threatening situation with possible NDE (participant cannot accurately recall).

Note: Demographic details were gathered verbally immediately prior to the interview.

8.3 Procedure

If the individual met the requirements for an NDE, a time and place was arranged for the interview. The majority of interviews took place face-to-face in a mutually agreed public place, for example, a library, meeting room or quiet café. Where the interviewee was known to the individual, interviews took place in the interviewee's home. Three interviews were conducted over Skype, as participants were not based locally. Interviews lasted from 45-150 minutes and were recorded using a digital recording device.

8.3.1 Interview structure and technique

The interview technique was semi-structured in format and conversational in tone. While semi-structured interviews can sometimes lead to the generation of irrelevant content, strengths include greater flexibility and informality, which encourage a more natural response that is less prone to interviewer effects (Adams, 2010; Buetow, 2007). In contrast to more structured approaches, topical trajectories into areas that deviate from the interview schedule are appreciated and accepted as part of the interview process (Gray, 2004). For the subject matter under study, this approach was considered particularly useful as NDEs and their aftereffects are not yet fully understood. A more open framework permitted greater freedom of expression (for the participant) and facilitated identification of previously unknown information, and/or new understandings. Because the topic is often considered controversial, and many indicated they had not previously spoken about their NDE, emphasis was placed on the rapport building stage. Rapport building is described by Hannabuss (1996) as an important interviewing skill, essential for building trust and eliciting genuine responses. It often involves small talk before the main interview to get the participant talking freely (Mellon, 1990). Mellon (1990) recommends interviewers perhaps saying something about him/herself, rather than acting aloof and professional. In this study, if the researcher sensed the interviewee was nervous, intimidated or censoring responses due to fear of judgement (or otherwise), the researcher disclosed having had an NDE herself (without discussing details) to encourage trust and convey empathy.

The topic also required a degree of interviewer flexibility, as recounting the experience was an emotional subject for many participants. A number of interviewees needed to process

the experience and talk it through, as they had not publicly (or even privately) discussed it before. In these instances, it would have been insensitive to follow a rigid interview schedule, and a certain amount of off-topic conversation needed to be appropriately allowed for. As Cohen, Manion and Morrison (2000) explain "… the interview is not simply concerned with collecting data about life: it is part of life itself, its human embeddedness is inescapable" (p. 267). Although time consuming, this approach generated a more thorough understanding of the person's attitudes and beliefs, in particular the emotional significance of their NDE. Paying particular attention to respondents' emotions in addition to their behaviours during data gathering, is believed to be an important aspect of the data gathering process (Polit & Beck, 2003; Vaismoradi, Turunen, & Bondas, 2013).

The interview began by asking the participants to explain in as much detail as they could, the circumstances surrounding their NDE and the nature of their psychological experience. This was followed by a series of open-ended questions regarding the individual's subsequent thoughts and beliefs about death. These questions provided focus and were designed to encourage an in-depth exploration of the constructs under investigation (e.g., how do you feel about death now? What did you think about death before your NDE?). The questions were asked in no specific order and arose in context to the conversation as was appropriate, allowing the conversation to flow naturally from one topic to another. Interviewees were also encouraged to talk about other areas they felt were relevant or important. Occasionally, questions were modified if the individual did not understand the question or required greater clarity. Additional questions were also created when needed, for example to explore a concept (such as afterlife belief) in more depth. For the interview schedule, see appendix G.

Following the interview, recordings were immediately transcribed into textual format by the researcher. This allowed for greater absorption, familiarisation and understanding of the data content, which proved to be of significant benefit in the later phases of the analysis.

8.4 Data Analysis

Data was analysed using Thematic Analysis. Thematic Analysis is described by Morse and Field (1995) as "the search for and identification of common threads" (p.139) within a data

corpus. Because Thematic Analysis is not tied to any particular theoretical framework or epistemology, it is considered a flexible and useful research tool with a wide range of applications (Boyatzis, 1998; Braun & Clark, 2006). Thematic Analysis was considered an appropriate tool for this study due to its compatibility with the study's realist or essentialist approach – an approach that emphasises the experiences, meanings, and reality of participants within the natural context of the phenomenon (Braun & Clark, 2006). Thematic Analysis is also thought to be particularly suited to semi-structured interview styles.

The present study utilised a hybrid approach of both inductive and deductive methodologies (Fereday & Muir-Cochrane, 2006). Although the research questions guided the focus of inquiry, the process allowed for the discovery of concepts and ideas not previously known or predicted by the researcher. As discussed earlier, this was because NDErs' attitudes and beliefs about death have not been comprehensively explored from a qualitative perspective. For under-researched topics, inductive methods of inquiry are deemed particularly useful as they are relatively free from theoretical assumption and able to capture a broad range of information (Hsieh & Shannon, 2005). The approach needed to be broad enough to uncover unknown aspects, but also focused enough to ensure research objectives were not lost.

The process began by reading and re-reading through all the transcripts to become fully immersed in the content and gain a sense of it as an overall whole - an activity greatly facilitated by the transcription procedure. Using a semantic approach, patterns and potential themes throughout the interviews were noted, although no attempt to analyse the data was made at this point.

The transcripts were then carefully reviewed, and content was broken down into a multitude of data points tagged to each individual, consisting of passages of text extracted from the interviews. All content within the transcript was given equal weighting and importance to facilitate identification of previously unnoticed patterns. The next step was to arrange the data points into groups, or codes, that represented a common idea or meaning. This process was aided by post-it notes (with data points written on them) adhered to a wall. This helped to visually organise the data, allowing information to be quickly and easily arranged and rearranged as necessary. This led to the creation of post-it note 'clouds' or clusters of information. The larger clouds of sticky notes were taken to represent areas of importance and often formed the basis of potential *themes*, or the "bringing together of components or

fragments of ideas or experiences, which often are meaningless when viewed alone" (Leininger, 1985, p. 60). These larger clouds were also examined in accordance to their context, because although frequent occurrence may indicate greater importance, it can also mean the topic or idea was simply more easily understood or expressed. It may have also reflected the views and experiences of only one or two participants who had a lot to say about the matter (Loffe & Yardley, 2004; Shields & Twycross, 2008).

To uncover more depth, each theme was examined for further patterns within and broken down into subthemes where possible. The process was organic and reflexive, and data were re-organised and further refined as the analysis progressed. Once a coherent framework was established, themes were assessed to determine how well they supported the entire data set; transcripts were re-read to ensure no information was overlooked or misconstrued. Adjustments were made where necessary and relevant quotes were extracted and carefully selected to highlight each theme. Once the themes were satisfactorily finalised, an initial framework or thematic map was developed. The links and relationships within and between the data were examined to identify if and how each theme or idea fitted together, and whether they accurately conveyed the bigger picture, or story, about the data. Emergent data were continually assessed according to their 'fittingness' to the study's research objectives and area of interest. At the same time, the analytical process honoured any unexpected or divergent themes that emerged.

Trustworthiness. Qualitative methods generate a different kind of knowledge than quantitative approaches. Qualitative research is typically exploratory hence the onus is not on generating proof for an existing theory or hypothesis (a top down approach), rather, data is collected to generate new theory, insights or ideas (a bottom up approach) (Frost, 2011). It provides insight into people's opinions, beliefs, attributions and emotional responses to a certain phenomenon – data not easily captured by standard quantitative methods. Because qualitative research is underpinned by a different philosophical paradigm, the criteria used to assess the validity or quality of quantitative research cannot be readily applied to qualitative methods. Whereas quantitative standards of inquiry are based on the philosophy of post-positivism, which values generalisability, replicability and objectivity (distanced and neutral observer) (Guba & Lincoln, 1994), qualitative research is typically based on a constructivist paradigm, or the assumption that all reality is socially constructed; there is no single objective

truth, simply different perspectives (Morrow, 2005). 'Reality' or truth is dependent on culture, time and place (among other variables). As a result, qualitative research acknowledges and even values subjectivity - of the participant, the researcher and the reader (Patton, 2002). "Traditional scientific research criteria" (Patton, 2002, p. 544), such as objectivity and repeated replication becomes less meaningful in this context.

To judge the credibility of qualitative research, researchers rely on alternative means for assessing a study's goodness (Morrow, 2005) or trustworthiness (Lincoln & Guba, 1994). Trustworthiness can be achieved by paying attention to aspects such as reflexivity, transparency, interview quality, fairness, reliability, and transferability (Morrow, 2005; Schwandt, Lincoln, & Guba, 2007; Taylor, Gibbs, & Lewins, 2005). How these criteria were met in the following research is summarised below.

- **Reflexivity -** *being aware of your own bias and taking steps to reduce it*. Potential researcher bias was identified through self-reflection and was acknowledged accordingly. As Johnson and Onwuegbuzie (2004) point out, "human beings can never be completely value free, and values affect what we choose to investigate, what we see, and how we interpret what we see" (p.15). In the current study, having had an NDE, being Western, a hypnotherapist (interested in transcendent states), and a-religious, likely influenced the researcher's interest in the topic, assumptions about NDEs, as well as the reading and interpretation of the data. Although qualitative research acknowledges inherent bias cannot be avoided, being reflective and reflexive throughout the interview process and analytical phases meant efforts were consistently made to minimise bias. For example, during interviews, minimal commentary was made throughout (a passive approach) and the researcher was careful not to ask leading questions or provide nonverbal feedback as to desired or non-desired responses (e.g., nodding of the head). During the analytic phases, discrepant data counter to themes (or the researcher's values/ideas) were acknowledged and mentioned accordingly. Using an inductive approach without any specific research hypotheses greatly helped this process, as it did not encourage any a priori assumptions.

- **Transparency** – *being clear about what was done and why*. A clear account of the research process is provided. Sampling strategy, interview technique and method of analysis is supplied in detail. Demographic information about the participants, including cause of the NDE, is provided.
- **Interview quality** – *the ability of the interviewer to conduct the research. Quality of interview*. The soundness and importance of the findings and conclusions of qualitative research often comes down to the quality of the interview, which is dependent on rapport, empathy, listening skills, knowing what questions to ask and when (Kirkevold & Bergland, 2007). As a professional qualitative and ethnographic researcher, the researcher has extensive experience interviewing a wide range of people over a variety of different topics, some of which were extremely sensitive. This suggests an appropriate balance of sensitivity and investigative probing was able to be attained. A high level of rapport with participants was achieved, as evidenced by the richness of participant descriptions, and documented emotional responses (indicating a level of trust), resulting in detailed, genuine responses.
- **Fairness** - *have negative cases been considered? Is there variability in the data*? Negative cases counter to dominant themes are provided. A distressing NDE is also included. Six participants were randomly selected (asked by researcher to participate) rather than self-selected, increasing variability of the sample and resulting data.
- **Reliability** - *has the researcher reliably represented the participants? Is the fit between the data and the emerging analysis accurate?*
  Verbatim excerpts are provided to illustrate themes. Thick (rich) descriptions are provided to help the reader assess reliability and fittingness to the themes, rather than brief, decontextualized statements.
- **Transferability** – *Can the account can be applied to others in similar situations?* The risk of anecdotalism, or focusing on more exciting or unique cases, was minimised by providing counts and percentages for each theme to show how typical (or not) examples or cases were. Although dominant themes are assumed most likely to reoccur in other contexts, it is acknowledged that ratios may differ. (Note: Maxwell (2008) explains the intention is not to provide

an accurate representation of the target population but increase understanding of similar situations or people).

The next chapter describes the results of this research.

Chapter 9.

Qualitative Results

The following chapter describes the patterns, or 'themes', derived from the interviews. Because the content and interpretation of NDEs may differ from culture to culture (and this may consequently affect death attitudes), the chapter begins with an overview of the phenomenological experience reported by participants in this study.

With respect to attitudes and beliefs about death, the key meta-theme to emerge from this research was "loss of fear of death". Subsumed beneath this were several main themes relating to the dimensions of this decreased fear, and the reasons given for change. Excerpts from the interview transcripts are, for the most part, quoted verbatim. Occasionally quotes were edited slightly to aid comprehension (correcting grammar or syntax, or deleting filler words such as 'um'), however all are in context and true to the original meaning intended by the interviewee. Any italicised words represent vocal emphasis on behalf of the participant.

9.1 Overview of Participant NDEs

9.1.1 NDE Scale Responses

All participants completed the NDE Scale prior to their interview. Scores ranged from 7-27, with a mean score of 13.9 (*SD* = 5.9). Eight (47%) had a subtle NDE (a score between 7-14), eight (47%) had a deep NDE (a score between 15-23), and one (6%) had a profound experience (a score of 24 and over). The most frequently reported elements were a feeling of peace (N = 14, 82%), an altered sense of time (N = 13, 76%), and the perception of light (N = 13, 76%). Table 9.1 presents the frequency of reported elements according to the 16 items on the NDE Scale. A positive response to the item was determined by a score of either 1 or 2 points. The exception to this was the out-of-body experience, which was defined as the sense of having clearly left the body and existing outside it. This experience was determined by a score

of 2 points. As evident in the table, results are comparable to quantitative findings, indicating the interviewees were representative of questionnaire respondents. NDE mean score and depth variation were also similar.

Table 9.1

Frequency of Near-Death Experience Elements Reported on the Near-Death Experience Scale (NDES)

NDES Element	**No. reporting elements (%)** (*n*= 17)
Cognitive Elements	
Altered sense of time	13 (76%)
Accelerated thought processes	5 (29%)
Life review	4 (24%)
Sudden understanding	7 (41%)
Affective Elements	
Feeling of peace	14 (82%)
Saw/felt surrounded by light	13 (76%)
Feeling of happiness or joy	11 (64%)
Sense of cosmic unity/oneness	9 (53%)
Paranormal Elements	
Out-of-body experience*	8 (47%)
Heightened senses	11 (64%)
Extrasensory perception	4 (24%)
Visions of the future	3 (18%)
Transcendental Elements	
Unearthly environment	7 (41%)
Saw/sensed spirits	9 (53%)
Perception of a border	8 (47%)
Sense of a mystical being or presence	7 (41%)

*Clearly left the body and existed outside it.

9.1.2 Phenomenological Descriptions of NDEs

Overall, the phenomenological features described by the sample group were similar to other Western presentations reported in the literature. The most frequently mentioned characteristics according to narrative accounts are outlined below. For two case study examples from this research, see Appendix H.

Altered sense of time. Many participants spoke of an altered sense of time during their NDE (N = 13, 76%). Most were unable to determine how long the experience lasted, and spoke of a sense of timelessness, or "no time".

> I don't know how long I was up there, but I watched them work on me. It could have been a minute, it could have been 5 minutes, it could have been an hour. (NZ3M)

> It felt like time would last forever. Yeah, I do remember that feeling. It was sort of…suspended. (NZ2F)

> There's no time. I mean it might have been a few minutes, it might have been 20 minutes or half an hour. I'd be guessing, I don't know. (NZ5F)

> There wasn't a thing called time. I had no perception of time at all. (AU1M)

Positive affect. Nearly all participants (15, 88%) spoke of extreme positive affect, particularly an overwhelming sense of peace and calm. Other words used to convey the emotional tone of the experience included "euphoria", "love", "warmth", "freeing", and "happiness".

> It was just overwhelming, the feeling. I've never ever felt like it. You know, you can feel nice and peaceful and happy, but this is just [expels air] *something else*. It was just unbelievable. Just a sense of *incredible, incredible* calm. (NZ4F)

> I went into a space that was calm, like *really calm.* (AU1M)

> … that warmth and love is unlike any… it's an out-of-this world warmth and love. You can't describe it coz it's not like any feeling on earth. (NZ5F)

> It just seemed so peaceful...the feelings still make me feel like crying now sometimes [tears in eyes]. (NZ8M)
>
> I have a recollection of physically, I was expanding. It was the most marvellous feeling. (CA1F)

Out-of-body experience (OBE). Eight (47%) participants described leaving their body and viewing it from an elevated visuospatial perspective. Most could recall detailed and specific aspects of the OBE, such as the position of their body and other events in the external environment (e.g., activity of medical staff).

> the next thing I remember... I....was sitting up in a corner in this room looking down at a little nurse - a little grey headed lady, a doctor and about three other people. She was saying to this doctor, "come on ya bugger, keep working on him, he's too young to die". (NZ3M)
>
> …then I just remember coming out of my body and sitting up in the corner of the emergency room and watching them working on me, and tapping away [on veins] and yelling…it just felt like I was moving out from the side and then floating up to the corner of the room. (NZ1F)
>
> All of a sudden I remember being 30 metres above the water looking down at my body floating beside the water bike. The bike was this way and I was just laying there beside it, like this [demonstrates with hands on table], just floating, probably about that far away from it. (NZ3M)
>
> Suddenly I was aware of the surgeon shouting and I thought "oh that's funny, I shouldn't be able to hear him", and then I was right up high at the ceiling and the room was really bright…he was shouting at her [anaesthetist] and *pushing* her out of the way and grabbing the resuscitation thingys. I didn't feel anything at all, but I could see myself, like this [demonstrates] and she was busy filling a syringe with something and injected that. (NZ9F)
>
> I heard the impact and then I was looking down at myself. I was spread-eagled, flying through the air. I thought, "that's me! What am I doing"? (UK1M)

Light. Thirteen (76%) participants reported seeing or being surrounded by light. Descriptions of the light typically varied from the commonly reported 'bright light' described in the literature, and assessed by the NDE Scale item "Did you see, or feel surrounded by a

brilliant light"? Other terms used to describe the light included, "diffuse", "clear", "amazing", "overexposed", "golden", "glowing", "weighted", and "colourful".

> I thought "where the hell, where am I?" …and I'm thinking "where's this white light coming from?" Suddenly the white light replaced everything that was around me. (NZ4F)

> It was a light that I've never seen, experienced before. It was a light that was as bright as the sun, but it was clear and it didn't hurt to look into, and either I was moving towards it, or it was actually slowly coming towards me and enveloping me. (NZ6M)

> I was in this beautiful, warm kinda like yellowy orangey glow. (NZ3M)

> It was like strip [fluorescent] lights. You know how that puts out quite a white light? It was like an overexposed photo, but I could still see clearly. (NZ1F)

> The light is not like any light from a lightbulb. It's like an all pervasive golden light which is even out of the walls of the house. (NZ5F)

This experience sometimes appeared to differ from expectations.

> It wasn't bright, but it wasn't… it was kinda like sunlight I guess, even though it was night-time in the emergency room. …...not this "go to the light" thing that people talk about. (NZ1F)

> There was no bright light I was going to, I was just surrounded by *incredible* light, amazing light just all around me. (NZ4F)

> I remember...just the most incredible light. And it wasn't the light at the end of the tunnel kind of thing and it wasn't like a bright light. You know even though I was 8 years old I can still remember it. It was quite an amazing light and if I ever saw a picture I could identify it. (NZ2F)

Deceased others/spirits. Nine (53%) saw or sensed the presence of other beings or 'spirits'. These spirits had various roles, including greeting/supporting individuals, questioning why they were there, facilitating a life review, and ordering participants to return. The spirits were often deceased relatives or known to the individual in some way.

My people were there. And what I mean by that are the people that I've lost. My husband, my father, my sister, my nephew. Close whānau and friends, were all there. (NZ10F)

I was surrounded by 4 or 5 beings, people, and um, facial features…recognisable. Body wise though they were cloaked in light…They were known to me, they were connected and certainly I felt they were there in support of me. Of course, from a 10-year old's perspective I didn't have a great knowledge of all those people, but I just knew they were there for me. (NZ6M)

As I got towards the end of the light there was my great grandmother's niece, who had died probably 9 or 10 years before. She and I had been very close and she said "Hello, what are you doing here?" [chuckles] "You've got children". Then another woman stepped forward and I thought "I know you". There were quite a few children playing and I could hear them. I couldn't see them so much as the sense of them just all bobbing around. (NZ9F)

However, just as often these spirits were unknown to the participant.

…then I just heard this voice say to me, "You never said goodnight to [son's name]"…[crying]. It was a male voice, but I don't know whose it was. (NZ1F)

A presence of more than one, a presence of...and this is going to sound *really* corny...but different souls. You know different…spirits. Like, thousands or millions of them. (NZ2F)

I heard a voice, but you know you don't hear the voice, you sense the voice and the voice said "Dawn light". (NZ5F)

Return to the body. Eight (47%) participants spoke of not being able to 'stay' or continue further. While some suddenly found themselves conscious again, others were reluctant to return (especially children), and felt as though they were forced back into their body.

I remember not wanting to come back, but mum made me. I'm going "No mum, don't, I don't want to come, it's lovely here. Just leave me here, I don't want to come." (NZ2F)

My father, out of all of them, was really angry and yelling at me to go back to the light, that it wasn't my time. (NZ10F)

> I was arguing it quite fervently. I was just like "No friggin way, I'm staying here, I'm not going back". I felt myself being forced back *into* my body and may I say that was the most uncomfortable experience I ever had. (NZ6M)

Although the majority of NDEs were pleasant, one participant had a distressing NDE, characterised by panic, sadness and loneliness.

> I could see in the light my mother being told the news about me dying. I could see her reacting to that... and how she... [crying] how she and the family reacted to hearing about my death. They were just crying so much, and I just kept floating down the river towards them but I couldn't get to them because they were way up there and I was way down here, in the river…I'm dying alone, in a river, in the middle of nowhere and it's so soooo lonely [voice breaks].

9.2 Death Attitudes and Beliefs

The overriding meta-theme to emerge from the data investigating death attitudes and beliefs following NDEs was *loss of the fear of death.* Participants overwhelmingly conveyed their perspective on death had altered following their NDE, impacting attitudes, behaviour and their subsequent approach to life. Subsumed beneath this meta-theme were several main themes, and associated subthemes, that were clustered into two broad areas:

1. **The dimensions of change.** Specific ways participants' beliefs and attitudes to death altered after their experience. Examples of actions and behaviours that aligned with a lessened fear of death.
2. **Reasons for change.** Why they felt their beliefs and attitudes had altered.

A thematic network illustration for this section is displayed in figure 9.1. Visual representation of the themes is helpful for conveying the overall 'story' of the data and is a simple and effective way of communicating findings at a glance. It is also useful for illustrating the connectivity between themes, which are often difficult to convey in standard written text. As Attride-Stirling (2001) explain, thematic network maps are presented as "web-

like nets to remove any notion of hierarchy, giving fluidity to the themes and emphasizing the interconnectivity throughout the network" (p. 389). In this network map, size and weight of the font used for each theme represents the salience or importance of each concept or idea. More salient themes, or "recurring regularities" (Guba, 1978, p.53) are represented by larger, bolder fonts.

Each of the themes identified are described in more detail below. For ease of analysis, results will be grouped in accordance to the categories described above: Dimensions of change and Reasons for change.

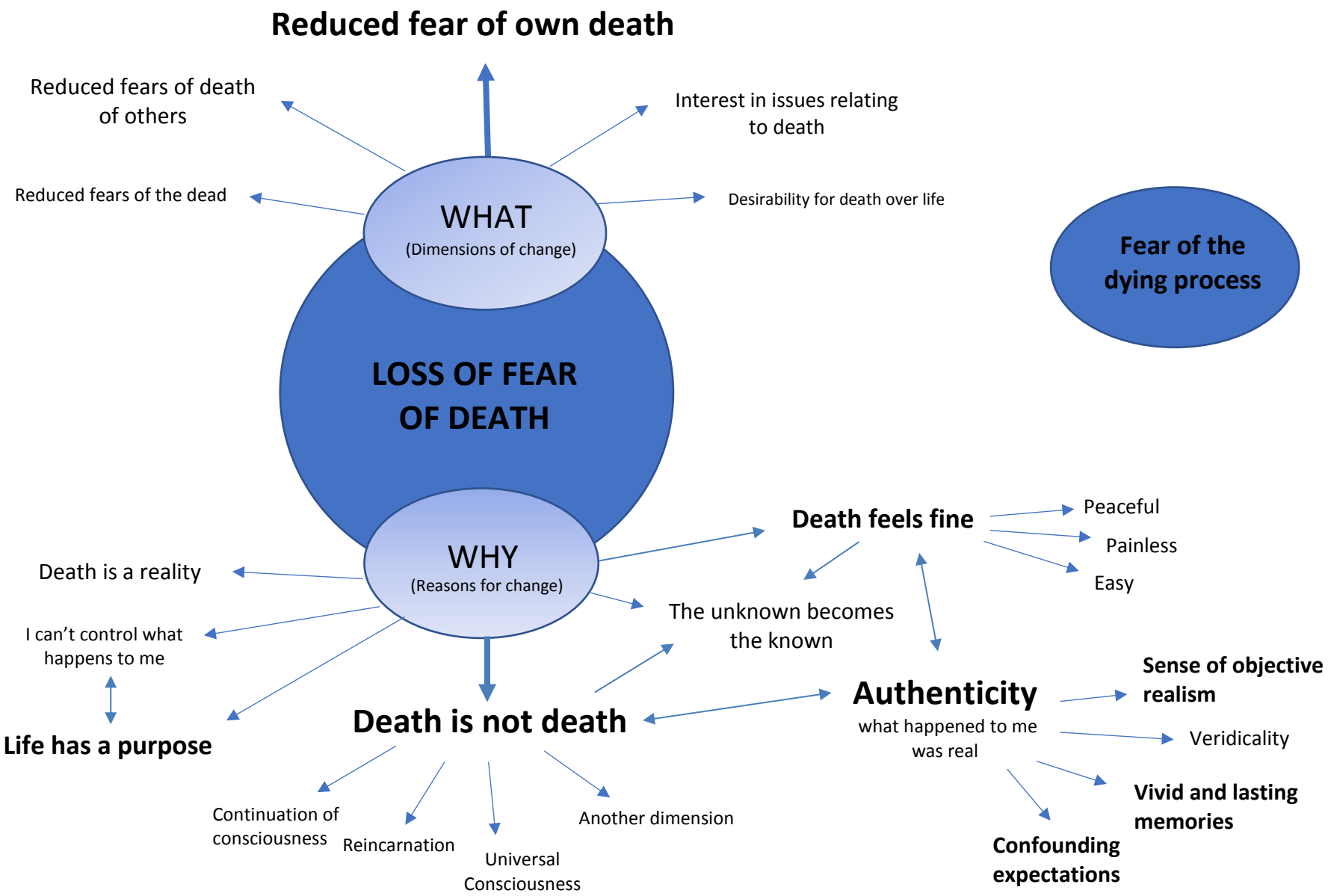

Figure 9.1. Attitudes and Beliefs about Death after an NDE.

9.2.1 Dimensions of Change

9.2.1.1 Eliminated or reduced fear of personal death

The most notable theme to emerge was a reduced or eliminated fear of their own personal death, with 15 out of 17 (88%) participants claiming they no longer feared their own death at all. This loss of fear happened regardless of the depth of the experience; interviewees with a range of scores on the NDES all described this change in attitude.

> It made me feel like I'm not afraid, I wouldn't be afraid to die again. (NZ8M)

> I've never since then had a fear of actually death itself. I'm quite relaxed about it. (NZ2F)

> It changed my perception and belief about death. Um, you know, death was gonna be fine. (AU1M)

> I don't have that fear of death anymore. (PH1F)

> I don't have a worry about it, I'm not scared about it. I know that it will happen. Happy for it to happen when it happens. (NZ1F)

> I was thinking crikey you know, I wouldn't have minded, I would have been ok if I died. Perfectly alright. And I thought, I'm not afraid anymore. (NZ4F)

Two participants (12.5%) admitted although their fear of death had reduced, they harboured mixed feelings surrounding death. For one of the participants, this was primarily attributed to circumstances unrelated to the NDE (childhood abuse) and appeared to present significant internal conflict.

> If this is what's going to happen when I die that's fine. It's really pleasant. But if that's the beginning of meeting up with everybody else, I don't want to think about that thank you. I don't really believe, choose not to believe in that…. There are some people I don't want to meet up with again. (NZ9F)

For the other participant, the reduced fear was tempered by an increased awareness of death.

> On the one hand, I'm not as afraid of death. But, I think having come so close to dying whether I'd had that experience or not, that would have profoundly changed me. On the other hand, I'm much more aware of it. (CA1F)

One participant claimed she had never feared death and had in fact been intrigued by it from a very young age.

> ...my mum said that I was always intrigued about death and wanting to look at dead bodies at the marae and see what they were like. She said I'd always ask the same questions about how come they died, why did they die, why do they look like this, and where have they gone? (NZ1F)

It transpired that she had also experienced a life-threatening situation at age two. Although the participant could not accurately recall whether she had an NDE at this time, she remembered experiencing characteristics similar to her later experience:

> When I was younger I had really bad asthma and spent the first couple of years of my life in and out of hospital. When I was about two, they had to put a drain into my ankle because I had no veins, and mum said that she nearly lost me then too. I don't know anything about being out of body then, I was only little. But I do remember that same thing of... [loss of hearing/silence]. In my memory there's no sound, but I don't know if it happened then as well. (NZ1F)

Most participants claimed this new outlook on death differed significantly from prior attitudes. Previous psychological reactions included avoidance, fear, anger, sadness and disgust:

> I was quite afraid of it, I carried a lot of grief…I was unable to deal with a lot of the people that I'd already lost, the sadness and the grief that came with that. Death was not good for

me. It was something that made me angry, that I didn't understand, that I didn't want to be around. (NZ10F)

Probably like a lot of people, I was always fearful of death… I was brought up as a, what you might call 'high Anglican', you know…hell and brimstone and fire. (NZ3M)

I was just afraid of confronting it, afraid of it in general. (NZ7F)

I probably hadn't really thought about it *that much*, like most people... in our society we don't really talk about something that's gonna happen to someone else, far, far away (laughs). (US1F)

Before, just talking about death, I felt so disgusted...(PH1F)

The majority of participants (13, 76%) claimed their change in attitude occurred immediately or very shortly after the NDE, once they had time to process the meaning of their experience:

I knew immediately that I wasn't scared to die anymore. (US2F)

Straightaway. Straightaway. I mean the next day I went "Wow, that was peaceful". (NZ8M)

It was immediate. It was immediate. Yeah it was like, oh well there's nothing to worry about, other than [voice animated] "When am I going to get back there again"! [laughs] (NZ6M)

I related it to some of my friends who visited me in the hospital. I told them of my experience and I told them yeah, I don't feel, I don't fear death anymore. (PH1F)

Oh, within a couple of days actually. Pretty quickly. (NZ3F)

Almost instant, but a few days to just process what it all meant. (NZ5F)

Three participants conveyed that the process was gradual and happened more slowly over time:

> Probably over a couple of weeks. When I started to realise "Hey, this is pretty big". At first there was recovering from asthma attack, but the more I reflected on it, the more I realised what had happened. (AU1M)

> It started to come in, little by little, it didn't happen straight away. It came with bits, little bits and it started to gel more and more. (UK1M)

For the interviewee who reported a distressing NDE, the process was more complex. The participant underwent counselling and took up active Buddhist practice to come to terms with her frightening experience, eventually leading to her loss of fear of death after a period of several years.

> To be honest I completely shut it out for 2 years. I refused to even acknowledge in my mind that I'd been there in that place, in that time…. It took me a while to get here, but I made it [laughs]. (NZ7F)

Although almost all participants claimed they did not fear death itself, 14 out of 17 (82%) admitted they still had fears concerning how they got there (the dying process). The fear of any associated pain, suffering or trauma remained.

> The only thing there would be, if there is any apprehension, would be pain, physical pain. (NZ11F)

> The concern I have in my later years is that I wouldn't want to leave this world again in a long, strung out, suffering painful experience. (NZ6M)

> I'm not very keen on accident or illness and I'm not keen on how I get there. (NZ2F)

> Nobody wants to have some horrible painful death, it's not the being dead that I'm fearful of, but you know, I wouldn't want a painful death. (NZ5F)

> The only thing that concerns me, it's not about death, but it's the way you die. (NZ3M)

One participant conveyed she no longer feared any aspect of death, including the dying process. This participant had had a profound NDE and when asked to elaborate, claimed:

> I think I really got a sense of how short this life is...so even if I was to have a suffering death, I really have this greater perspective that it's not as much time as you think it is. (US2F)

9.2.1.2 Decreased fears of the death of others

Six NDErs (35%), particularly those who had had deep or profound NDEs, mentioned their new outlook on death had eased fears connected to the death of others:

> Later on when my mum died...there were a lot of upset people around me. I could see that, I could feel that. I could comfort them, but I wasn't upset myself. (NZ6M)

> After that when my husband died, *I accepted it.* And then my mother also died and I said "Oh well". I accepted it. Death is part of life. (PH1F)

> ...I was always very fearful that something would happen to one of my kids, and I'm a lot more ok with that now, because I understand that even if something was to happen to one of my kids, they chose this life before they came, and they chose when it will end. (US2F)

Two NDErs mentioned it also had removed fears of the dead, such as handling dead bodies.

> It was probably only a year later when I came across this other accident, where a car had rolled over in the ditch and this guy was dead... it didn't bother me. I pulled his leg up, pulled his pants up to test the temperature of his leg and it was starting to get cold straightway, so that told me straightaway. I don't know if I could have done that before my experience. (NZ8M)

> It's almost like it's been removed in such a way that I don't even fear being around dead people. I mean, I've just been involved in a Tangi [funeral]. My friend's son hung himself,

> and this is just days ago. I've been able to move his body physically, pack ice under him, prepare the room. Do a whole lot of stuff around the body that is quite different for me, from how it used to be. (NZ10F)

The reduction in interpersonal death fear was also evidenced by the careers some participants pursued after their NDE or planned to pursue, specifically focussed in the area of mortality:

> I retrained as a counsellor about 22, 23 years ago [after the NDE]. I spent over 10 years doing homicide victims counselling, walking with families who've lost a family member through homicide. Um, and in working with people who are grieving….it doesn't rattle me. I can be with them, but not get lost in it with them. (NZ6M)

> I'm planning to become a funeral director and I want to open up a funeral home. (NZ1F)

> Within a few months after, I got thinking "I think I'd like to be a funeral director and deal with death, you know?" (NZ8M)

9.2.1.3 Increased interest in death-related issues

Nine (53%) participants showed an increased interest in issues related to death and dying. Not only was this demonstrated by certain career choices (as discussed above), but included thinking about death more often, as well as researching and exploring death-related topics, such as life after death. Participants also indicated they were comfortable discussing death with others, even though it was sometimes difficult to find an equally enthusiastic conversation partner.

> These days I can very openly talk about death. I enjoy it, it's something that I'm really interested in because it's something I think about a lot and it drives me a lot, but I can't talk about it because people think I'm weird! (NZ7F)

> …is there life after death, what is there out there? ... I have investigated that quite a lot over the years, and if you were to go and look through my bookshelf, you would find quite a lot of books on that sort of thing. (NZ2F)

There was a wee preoccupation there, probably thinking about it [death] a bit more. (NZ6M)

I've read things that say 'well, your pineal gland releases, you know, DMT'. They call it the spirit molecule. And that release of DMT floods the brain when you die. So, I was really really curious to explore that as well. (US1F)

9.2.1.4 Desirability for death over life

Rather than something to be feared, for four NDErs death became a viable option whereby the thought of dying had become more attractive than living.

...during the tough times growing up, it was difficult because it was just like "For god's sake, strike me down, take me." It made for very interesting teenage years as far as risk taking went. When I was 18, I ran off to skydiving school… because there was the fun, there was the thrill, but it really didn't matter if I went splat or not. (NZ6M)

The first couple of months I really struggled with depression and being so homesick. I've never been so homesick in my life... I would have an anaphylactic reaction and I would hope that this one would be it. You know, I just wanted to go back. (US2F)

I was back and I was aware that I was back, but there was a part of me that was disappointed that I was back. I couldn't go back to being a bouncy, naive teenager again….I became very much a loner, a lot more introverted, a lot more seeking... I was always chasing my near-death experience. (CA1F)

9.2.2 Reasons for Change

One of the main objectives of this research was to find out why NDEs can prompt such a dramatic shift in attitude. When questioned about the reasons behind their changed attitudes to death, several clear themes emerged.

9.2.2.1 The unknown becomes the known

The uncertainty of what to expect at death was alleviated for many NDErs, as death became a known entity. Five (29%) participants claimed that simply knowing what to expect had eased many of their fears surrounding death. Death was no longer a mystery.

> The unknown really. Yeah, yeah, so that was a part of dispelling fear. I had an experience of what it'd be like. It felt more...more concrete, my knowledge of death, yeah...I had a knowing about it rather than being fearful of the unknown. (AU1M)

> I don't fear death now because I know what's waiting on the other side, and that to me is beautiful…I have a picture of where I can go to and that's kind of removed anything I feel about dying, which is awesome. Because *now I know*. (NZ10F)

> I don't have that same kind of fear that so many people will have. This fear of death. This fear of, you know, just going into the unknown and what'll happen next. (NZ7F)

> That's probably one of the major influences that it's had, that I really don't have a fear of what's after. (NZ2F)

More specifically, unveiling the mystery of death involved gaining an insight into the process from either a **physica**l or **transcendental** perspective, or both.

9.2.2.2 The physical/affective experience

A clear theme emerged that specifically linked the reduced fear to the physical experience of death. For 7 (41%) participants, the positive affective sensations were quoted as the main reason behind the loss of the fear of death. This theme was particularly evident amongst those who had subtle NDEs or continued to remain atheist or materialist in their beliefs. The most frequently cited affective element was the overwhelming feeling of **peace and calm**. These sensations were so intensely felt, their recollection would often provoke an emotional response in the participant.

It just seemed so peaceful...the feelings still make me feel like crying now sometimes [laughs]…[pause] [tears in eyes]...um...it made me feel like, um, I'm not afraid. I wouldn't be afraid to die again. (NZ8M)

[crying] It's so vivid. And it's the most amazing calm. Just the sense of *incredible, incredible* calm. It was the *calm*, the absolute calm.... and I just lay back and thought, I'm ok, I'm going to go. And I thought, I'm ok, I'm happy to die, I'm happy to die…more than the light, it was that *sheer absolute calm.* (NZ4F)

I think the whole thing about it being calm and peaceful, easy. Yeah, rather than it being a fight and a trauma. (AU1M)

Contributing to the positive physical experience was the sensation of painlessness:

It was painless at that point. Not after. But then if you were dead then you wouldn't feel it anyway. So there's nothing to worry, fear really. (UK1M)

I think part of the thing about it was that you realise that the death experience isn't probably as scary and painful as we make out. (US1F)

That it was just peaceful and it's not this painful, tortured, like a tortured soul or horrible turmoil. (NZ11F)

I had no pain and it was absolutely beautiful…it was just a beautiful feeling. (NZ3M)

Contrary to expectations, participants often claimed death was an unexpectedly effortless process and not a traumatic or drawn out experience. This was usually linked to the feelings of peace and painlessness.

I think the whole thing about it being calm and peaceful, easy. Yeah, rather than it being a fight and a trauma. (AU1M)

It happens as easily and as simply as breathing in or out. Close your eyes. Lights on, lights out. Effortless. Natural. (NZ6M)

It just made me realise sorta how easy it is. (US1F)

Other comments that suggested the pleasurable physical sensations of the experience were responsible for the loss of fear of death include expressions such as:

> It was just that it felt so nice... and therefore I'm not worried about being there again. (NZ2F)
>
> If this is what's going to happen when I die that's fine. It's really pleasant...It felt lovely. (NZ9F)
>
> It was just a beautiful feeling. It felt lovely, absolutely lovely. (NZ3M)

9.2.2.3 Death is not Death

The most salient theme to emerge was the concept of transition. Most participants claimed their NDE had prompted them to revise their understanding of death completely. A part of themselves had seemingly remained aware while the physical body was compromised. Rather than it being a finite process, the majority of individuals (14, 82%) now believed in the continuation of consciousness in some form - death was no longer death. Transition into a different state of being, rather than annihilation, was often quoted as a reason behind their eliminated fear of death. This belief was especially prominent amongst those who had deep or profound NDEs.

> Death is a misnomer. There's no death. In fact, you're far more alive over there than you are here. (US2F)
>
> Well, you don't die. That's my knowledge, my experiential knowledge. It's not dying, it's a transition that happens as easily and as simply as breathing in or out. (NZ6M)
>
> What is there to be fearful of? There is no death. You know? Yeah, there is no death. (NZ5F)
>
> I don't see death now as the absolute end. Not that I always did think it was the absolute end, but I'm a lot more….aware…..yeah, aware….that you do go on, in some form. (NZ11F)

Seventy one percent of these participants had previously held a belief in complete annihilation at death, and/or an awareness of an afterlife derived from Christian based childhood teachings (long since abandoned). Previous thoughts about the afterlife varied from "brimstone and fire" (NZ3M,) or "angels with wings" (NZ6M), to a "black nothingness for old people" (NZ7F).

> I had stopped believing in Jesus and I stopped believing in any kind of heaven or angels or any of that sort of stuff. I didn't want to think about death because I thought well, if there's no God and Jesus then there's no heaven, therefore there's nothing. There's just nothing, that's it, full-stop. (NZ7F)
>
> As far as I was concerned, you get put in a wooden coffin and you sit there and you rot and the worms get you in the end. Not a very pleasant thought. (NZ3M)
>
> You grow up thinking there was heaven and there's hell, and if you don't believe in God and heaven, then you go to hell…I'd been bad and I'd enjoyed the badder things in life. Bad people go to hell. So I guess there was part of that in me. But, I hadn't really thought about where you go. (NZ10F)
>
> I thought that when you died, you were dead, so you wouldn't know you were dead anyway... I didn't believe in an afterlife. (NZ5F)

The aspect of the self that survived death was variously referred to as the soul (NZ6M, NZ11F, NZ5F), essence (NZ2F), energy (NZ2F, NZ5F), being (NZ6M), consciousness (NZ6M, US1F, US2F), mind (NZ7F), thoughts (NZ8M, NZ7F) and spirit (NZ5F, NZ3M, NZ6M). Almost all participants (13 out of 17) understood the after death domain to be a state of mind or beingness, rather than a specific spatio-temporal location, per se. Only one participant used the word 'heaven' to describe their understanding of post-mortem existence.

> You leave your physical state. It no longer operates, but your soul, and your…what makes you you, your personality, your experiences, things you've learnt as a being, they stay, they carry on. (NZ11F)

> I just felt like that what travels through, what carries on to the next life, it's just your mind. Just your thoughts. (NZ7F)

> That... whatever that energy is that creates your soul, your spirit, um, it just moves. From one environment to another environment... you just continue on. (NZ6M)

Reincarnation. Five participants expressed a belief in reincarnation following their NDE. For two participants this was directly related to the content of their experience. A further two participants talked about subsequent paranormal experiences following their NDE that were suggestive of reincarnation - a 'knowing' about places they had never visited before. One other claimed her experience had propelled her down a path of spiritual discovery that embraced a belief in reincarnation.

> I learned so many things I didn't believe [beforehand]. I didn't believe in reincarnation... I think you come back, unless you're done. (US2F)

> We're in this life for a period of time. And when that's your time, you will go into the spirit world and then onto another life. (NZ5F)

> I believe you do come back, or your spirit comes back…. We were in Prague one day and we got lost. I knew exactly which way to go...I even said to my friend "When we get round the corner here, there's a shop you'd like to go to". And it was though I'd lived there all my life. *I've never* been to Czech Republic or Prague, but I knew exactly where to go and I could tell them where the bridge was. So that made me believe...(NZ3M)

Universal consciousness. Another subtheme to emerge from the data was a belief in universal consciousness, unity or oneness. Five participants specifically talked about the concept of merging with a larger, universal source of consciousness at death, with the word

‘one’ or ‘oneness’ often mentioned.

> I now believe when I die my energy will just spread and dissipate and go into the greater consciousness that underlies everything. And will be used in some other way. (AU1M)
>
> We're just all part of this one whole thing. And at the moment we're just being expressed as um, you know, humans. But everything else has consciousness as well. (US1F)
>
> I was so surprised to know that my consciousness still existed. And it was so neat to know that my consciousness is linked to everyone else’s. (US2F)
>
> From that experience, I just know there is some oneness and something else. (CA1F)
>
> It was like the whole universe was spirit. It was vibration, it was energy, it was everything. You are a part of it, and it a part of you, and you’re all one thing. (NZ5F)

Extra-dimensional reality. The third subtheme to arise was the concept of transitioning into a different dimension. Four participants understood post-mortem reality to be an alternative plane of existence that existed simultaneously with the visible world. The word ‘dimension’, ‘frequency’, ‘vibration’ and ‘hologram’ were all words used to convey the sense of feeling separate yet connected to the material plane of existence:

> I think it just kinda returns to that other...that other vibration really. It’s not like I'd say we go back to consciousness because we already are consciousness. ...It was very much like kinda a different dimension in a way, you know. (US1F)
>
> It’s like a hologram, that’s the best way to describe it. You’re on this plane and then that plane and you just realise that everything is holographic….You just feel like there’s a glass door between you and that. (CA1F)
>
> The transition between this space and that space, it’s almost dimensional. It’s like....this space that we are sitting in now. Close your eyes, you’re there. It occupies the same space, but it’s different. (NZ6M)

Rejection of religion. Eleven (65%) participants emphasised a decreased interest in, or outright rejection of organised religion or a religiously inspired afterlife. A number of NDErs were careful not to use religious terminology in their descriptions and conveyed they did not consider their NDE to be a religious experience. Typical comments were "*I've refused to go down the religious track*" (CA1F), "*It didn't make me religious or anything*" (NZ4F) and "*There's no religion when you get there*" (US2F). For the most part, NDErs felt religion was inadequate, inaccurate or incomplete in some way, claiming it "felt hollow" (CA1F) or was a "crude attempt" (NZ6M) to make sense of their experience.

The following three quotes are from child NDErs, each of whom spent many years considering their experience, researching and exploring both scientific and spiritual possibilities.

> I studied religion and spirituality trying to make sense of what that experience was...I have certainly have gone there and researched and seen whether any of that actually aligned with my experience, and I've got to say that my view after looking at it for so long, that religion is a manmade construct that attempts to try and make sense of it, but very crudely does. (NZ6M)

> I have spent a lot of time questioning the whole spiritual thing...I don't believe in heaven and hell, I don't believe in a religious afterlife. I certainly don't believe in God or the devil and stuff like that. I find it so removed from possibility that yeah, I'm really intolerant of it. (NZ2F)

> I've studied a lot...I've done that same thing that everyone else in my generation did. We did all this spiritual seeking and all of this sort of stuff. But it always falls hollow. It's still an intellectual exercise. It'll never be anything that touches that [the NDE]. (CA1F)

9.2.2.4 Authenticity

These revised attitudes and beliefs were reinforced by the perceived authenticity of the experience. For participants, the strong sense of objective realism, veridicality, its vivid

and lasting nature, and the confounding of expectations, distinguished the NDE from an imaginary event, dream or hallucination. In essence, NDErs understood their encounter to be a genuine psychological experience of death or the dying process, and one that was likely a reflection of actual irreversible death.

Realism. All participants claimed their experience had a strong sense of realism that mirrored or exceeded ordinary waking consciousness. For some, it felt more real than anything else they had experienced in life:

> I would have said this was nonsense. But when you've experienced it it's not nonsense, it's real. (UK1M)
>
> It's as real as sitting with you now. (NZ6M)
>
> I think, well if I was hallucinating, why wasn't it pink elephants or monkeys running around the room or something? (US1F)
>
> Another thing that people don't understand is that the experience, the out of body experience, is a really physical feeling. It's not like your mind is just floating free or you're hallucinating or something like that. You're there, 100% there…. I've felt that it's probably more real than anything else I've had in life. (CA1F)

Veridicality. Six cases of apparently non-physical veridical perception (AVP) were reported by NDErs in this study. For participants, these seemingly accurate perceptions during the out-of-body state - when such perceptions would not be expected based on the condition and/or position of the physical body, yet were corroborated by external sources - further confirmed the experience was real and not an illusion.

> The nurse became good friends of myself and my wife afterwards… and she came to stay with us a few times, and one night after a few drinks I said "[N....] you know, I only ever heard you swear once", and she said "Oh I never swear, I've never sworn in my life". I said "Yes you did. You know the day that I was brought into hospital [under cardiac arrest]" and I repeated what she'd said about "C'mon you silly bugger [referring to doctor], work on him

harder, he's too young to die". She went off! "Oh" she said, "I did too. That's exactly what I did say!" (NZ3M)

He was [surgeon], from where I could see him, he was shouting at her [the anaesthetist] and *pushing* her out of the way and grabbing the resuscitation thingy's. I didn't feel anything at all, but I could see myself like this [demonstrates body position], and she was busy filling a syringe with something and injected that. I heard him shouting at her, "Get out of the way!". I thought "How strange", and *he pushed* her. I thought *"Oh! He's being rough*!*"* I thought that was strange. Not that I'm up here was strange, but that he was behaving strangely… Later [hospital physiotherapist] said "Well, yes actually that did happen, all of that did happen, and [the surgeon] *was* shouting because my sister was the nurse that was in theatre." (NZ9F)

I'm in the room and I see me. And I'm not doing well. I decide that I don't want to be in the room, I don't want to see that anymore, and so I go to the waiting room. So, I just float. I'm just present. As soon as I think of it I'm there. I see my sister and my son. They're talking about if I survive this then I needed to designate somebody as my person to make decisions if this was to ever happen again. I saw exactly where they were sitting in the waiting room. She [sister] opens up her purse and she gets out a blue tissue and was wiping her nose. [later confirmed] (US2F)

Flash-bulb memories. The intense and vivid nature of the NDE meant that for all participants the experience was permanently fixed in their mind. Like a flash-bulb memory, participants claimed their recollection of the experience was extremely clear and they could remember it like it was yesterday:

You know, this can happen. It's not in head. It's not my imagination. You know, I wouldn't of remembered, *surely* I wouldn't have remembered this long so vividly. (NZ4F)

You can't ever take it away from me. It's like a photographic memory. (NZ5F)

Even after all this time [45 years], it's still a really clear image. (NZ2F)

It's like a big photograph I've got inside my head. (NZ8M)

> The image in my mind, it's crystal clear. (NZ7F)
>
> Very vivid. Yep. Like it was yesterday. You know, it's very…I don't think that sorta thing ever leaves you, because it's very, very clear in my mind. (NZ1F)

Confounding expectations. For nearly all participants (16, 94%) their NDE represented a departure from any existing expectations of death, psychologically, physically and spiritually. This further reinforced the perceived reality, and therefore significance, of the experience.

> I learned so many things I didn't believe [beforehand]. I didn't believe in reincarnation. (US2F)
>
> I didn't engage in, with any of those events. It wasn't me chasing after it. As a child, I didn't have any knowledge of those places, or how people in spirit would be. It didn't marry up with anything my parents had shown me, as they dragged me along to Sunday school, or anything like that... So yeah, it's real. It's real as you can get. (NZ6M)
>
> If anything, I probably would have thought…maybe it wouldn't be as peaceful, or untortured. You know, maybe I'd thought an association with death would have been with pain and anguish. It completely changed my perspective of what death might be like. (NZ11F)
>
> Before I was so skeptic. I believe only that heaven is just here on earth. (PH1F)
>
> We never grew up going to church or anything like that. I suppose I don't know what I expected, but I didn't expect that. I *did not* expect that. (NZ10F)

All of these aspects produced an extremely strong sense of certainty or conviction in the objective reality of their experience. When asked if they could ever be convinced otherwise, participants replied:

I think that would almost be like someone turning around saying excuse me, but the world is actually flat, you've been wrong all along. You have so much evidence, so much knowledge to the contrary that the world is actually round, that there would be a MASSIVE shift to suddenly convince someone that the world is flat. That's how I sit with near-death experience. (NZ6M)

Could someone ever change my mind? Well they could never change my mind, but I wouldn't even feel the need. If a scientist wanted to talk to me about it and didn't believe me, then I wouldn't even bother talking to them about it…because there's no point, and I don't need to. When you *know* something, you don't need to convince people. (NZ5F)

I *absolutely* know in my heart that that stuff is true for me. (NZ10F)

I have a profound sense of trust in something else. Maybe it's a coping mechanism. Maybe it's just a simple psychological choice to hold onto this experience and let it be something more profound than life is. But, it doesn't change the fact that it's there. (CA1F)

9.2.2.5 Relinquishing Control/Life Purpose

The experience of being out of a conscious controlling state of mind during the NDE made five participants realise the sense of being in control of life was an illusion. There was no point worrying about something you ultimately had no power over.

[It's] just that little snapshot of…there's more than just what I can...through my own conscious being, control. (NZ11F)

You usually have good control of your life and here's something that just blows you away ,and it's actually quite freaky in a way because it's, you know, you're not used to having no control. (NZ4F)

You use a lot of energy just trying to control and master and make something out of this world around you...It's really beautifully refining to understand you don't have any control over it, you don't need control. Everything is just unfolding as it should. (CA1F)

Closely connected to this was the concept of life purpose. Eight (47%) participants commented they now believed their life (and other's lives) had a purpose, even if they did not specifically know what this purpose was. There was a reason for being alive and consequently, there was a reason for death. This new understanding appeared to encourage a sense of peace and acceptance around death:

> Death doesn't worry me at all because I believe that you are on the earth to do whatever lessons that you need to learn in this life...I know we are on this earth for a reason. (NZ5F)
>
> Even though we might think that we are in control of how our lives play out and all the rest of it, when it really did come down to it, there was a determination of something outside of me saying "Hey, you're doing this life for a particular reason or a purpose". (NZ6M)
>
> Here's this very big experience that confirmed the way that I was moving anyway in terms of accepting that I wasn't in control of life, that life will...that life has a purpose if you like, for me. (AU1M)
>
> There was a part of me that believed that I'd been given a second chance and I didn't know what that was for, or what that meant. I still don't know what that is now…but I feel I have a purpose in life. I never felt that before. (NZ10F)

9.2.2.6 Death as a Reality

The NDE had forced many participants (7, 41%) to confront death and accept it as a reality. Rather than continue to avoid or suppress thoughts, death had been brought to the forefront of conscious awareness. They now understood death was real and inevitable and could happen at any time.

I'm *much* more conscious of the fact that we stand at the precipice every day. You know, this idea about comforting ourselves about the idea of a tomorrow or next year or whatever. It may not pan out. (US1F)

It is something that's so real and inevitable that it's going to come to us all at some stage... (UK1M)

That's the biggest bullshit lie that we tell ourselves is when I have free time one day, when I have time "Oh there's time next year to do this thing or that thing". But they're not realising the fact that you don't know when this thing could happen. (NZ7F)

I'm very conscious of how mortal I am. (NZ4F)

Rather than increase death anxiety as many would expect, this increased awareness of their own mortality facilitated an acceptance of death as a normal and expected part of life. This theme was especially prominent amongst those who had subtle NDEs and was a key theme for the participant who had a distressing NDE. Some participants indicated it now even provided the means for an enjoyable conversation:

I accepted it, death is part of life. (PH1F)

Acceptance of life and acceptance that you know, pretty soon I will turn to dust. (AU1M)

We really need to start expecting it and talking about it. You know, about death as a normal part of life. In the birth is implied the death, in the death is implied the birth. (US1F)

These days I can very openly talk about death. I enjoy it, it's something that I'm really interested in because it's something I think about a lot and it drives me a lot. (NZ7F)

9.3 Summary

Seventeen NDErs took part in a series of semi-structured interviews exploring the phenomenology of their experience, the meaning it had for them, and any impact on their

attitudes and beliefs about death. Analysis of the interview data showed the phenomenological elements reported by the present sample were largely comparable to other Western NDEs. However, some elements were less commonly reported such as a 'heavenly' realm, or unearthly landscape.

The most prominent theme to emerge was loss of the fear of death. Participants in this study reported a decreased or completely eliminated fear of their own personal death, decreased fears of the death of loved ones, less fear of the dead, increased interest in death and dying, and even a preference for death over life.

In terms of causal mechanisms, although most were previously atheist or agnostic, 82% of the sample attributed this change to belief in the continuation of consciousness after death. Forty one percent also cited the overwhelming affective sensations as a significant contributor. Relinquishing control over life (and subsequently death), feeling that life has a purpose and confronting the reality of death, were also mentioned.

In terms of afterlife beliefs, most NDErs rejected mainstream religious conceptualisations and were more likely to believe in reincarnation, universal consciousness, or some form of extra-dimensional reality following their NDE.

These new attitudes and beliefs were strongly reinforced by the authentic nature of the experience. The sense of objective realism, veridicality, clear and lasting memories and the confounding of expectations convinced NDErs that what they experienced was real and not an illusion.

Chapter 10.

Discussion

The focus of this research was to investigate how and why attitudes and beliefs about death change after an NDE. Specific areas examined included the construct of NDErs' death related attitudes, the reasons behind any change in attitude, and an assessment of NDErs' post-mortem survival beliefs. This chapter integrates the data from both quantitative and qualitative approaches by combining and comparing findings. As this section will illustrate, results were *convergent* and *complementary*, that is, they both lead to the same conclusion.

Although many significant results were observed, a clear and reoccurring theme was a link between positive death attitudes and increased belief in post-mortem continuation. Although not indicative for all NDErs, as one of the most pronounced findings of this research the discussion will primarily focus on this relationship. A discussion is given of how knowledge from this research can be utilised for pragmatic or therapeutic purposes, and limitations of this study are outlined. Finally, concluding remarks are provided.

10.1 A More Positive Attitude to Death

The findings of this study support existing research demonstrating NDErs have more positive attitudes to death than their nonNDE counterparts. Quantitatively, compared to those who have also come close to death but with no NDE, and those who have never come close to death, NDE participants reported significantly greater acceptance of death, less fear of death, and less avoidance of death. Qualitative findings similarly revealed a more adaptive orientation to death, with interviewees consistently speaking of positive changes in beliefs, attitudes and behaviour following their NDE. Although researchers of death attitudes caution against accepting any responses at face value, there were clear indicators this change was genuine. Handling dead bodies without distress, increased risk-taking behaviour (e.g., sky-diving), subsequent involvement in work related to death (e.g., funeral

director, homicide and bereavement counsellor, organ donation advocate), and increased interest in talking and thinking about death, all lent support to claims of a changed attitude to death. Thus, results appeared to be reflective of real change, rather than due to other factors such as social desirability bias, or subconscious ego defence manoeuvres.

With respect to the foci of anxiety (or lack thereof), NDErs reported significantly less transpersonal fears, or fears related to the transcendental consequences of death. They also had significantly less intrapersonal fears, principally fear of earthly deprivation at death (e.g., the loss of life's pleasures). On the other hand, fear of their death's impact on personal relationships (interpersonal fears), did not differ from others. The consistency of scores between the three groups is interesting and suggests some death-related fears may be universal, regardless of personal or contextual life experiences. Alternatively, perhaps this factor is tapping a different type of construct – fear of separation from loved ones, or the nature of intimate relationships, rather than death per se. Developers of other death scales have also noted a differentiation between attitudes concerning oneself or another person (Collett & Lester, 1969; Wittkowski, 2001). Maybe this fear is less about mortality than fear of severing connections with those who mean the most; an idea supported by the continuing bonds theory of bereavement (Rothaupt & Becker, 2007).

10.2 The Changed Meanings of Death

Why NDErs rather than nonNDErs (who also had a close encounter with death) should have more positive attitudes to death is likely related to the differing perceptions and meanings each subsequently attached to the event. As Cicirelli (1998) notes, the meanings attached to death impact attitudes, feelings and behaviour. If meanings are negative they typically result in fear and avoidance, and if they are positive, they encourage acceptance. For most NDErs, their personal experience of death was an overwhelmingly pleasant, life affirming experience. It changed beliefs about both the *process* of death or how it felt to die, as well as the *state* of death, or what happens next.

In a study examining the personal meanings associated with death, Cicirelli (1998) found many people equate death with pain and suffering. Yet, nearly all interviewees in this study claimed death itself was a surprisingly pleasant experience – peaceful, effortless and

pain free. This experiential knowledge typically contravened previous thoughts about the physical and emotional process of death. Rather than a traumatic experience full of pain and suffering, many NDErs appeared to experience the opposite, creating the lasting impression that "death was gonna be fine" (AU1M). Quantitative data also found the affective elements of the NDE, such as peace, happiness and joy, were associated with greater levels of acceptance and lower fear, confirming this component played an important role in changing perceptions about death, particularly for atheists and those who had subtle NDEs. These results lend support to Tassell-Matamua and Lindsay's (2016) proposition that strong positive affect experienced during NDEs may contravene many people's negative expectations about the physical process of death, lessening many of the NDErs more immediate, visceral fears.

The NDE also challenged beliefs about the state of death. One of the most notable findings from this research, and a key factor that differentiated NDErs from others, was an increased belief in post-mortem survival. NDErs were significantly more likely to believe in some form of continuation after death, as well as significantly less likely to believe in annihilation, providing more concrete evidence for the (often implicit) assumption that NDErs have increased belief in the afterlife. While correlation does not necessarily imply causation, several streams of evidence suggest this belief was the primary catalyst for a changed attitude to death.

Firstly, NDErs' reported significantly greater levels of *approach acceptance*. Approach acceptance is a specific type of acceptance based on the transpersonal belief that death represents entry to a rewarding afterlife. Unlike the other DAP-R attitudes, approach acceptance taps both a post-mortem belief (continuation) *and* an attitude (positive), therefore it is reasonable to assume a relationship exists between the two variables, especially when viewed in conjunction with other data.

Secondly, the FPDS-R showed NDErs had significantly less fear with respect to transpersonal concerns, or the mystery of death, compared to both nonNDErs and controls. Specifically, NDErs had particularly low fears regarding "the end of my ability to think" and "uncertainty regarding whether my existence will continue", which strongly hints at belief in the survival of consciousness after death. NDErs also scored significantly lower than others with respect to intrapersonal concerns, particularly the fear of deprivation at death. These fears relate to the loss of life's pleasures and the end of being a person in the world (both

mentally and physically). Because the NDE appeared to affirm conscious existence beyond physical death for the participants, NDErs were perhaps less likely to identify with their 'earthly' identity, placing less importance on material, or 'ego based' attachments. NonNDErs, on the other hand, might have had greater intrapersonal fears than others as their experience may have signalled the opposite – that nothing awaits them after death. This proposition is supported by the finding nonNDErs were least likely to believe in some form of continuation after death. The realisation that life was finite may have meant their 'humanness'- their earthly qualities, activities and interests- were all the more precious, the fear of losing them heightened.

Finally, the NDErs themselves claimed a new or strengthened belief in post-mortem survival was the main reason they no longer feared death. Based on their experience, 82% of interview participants believed the word 'death' was "a misnomer" (US2F). According to NDErs, life did not end with objective, physical death, but appeared to continue in some form - a seamless, effortless transition from one mental state to another. This knowledge alleviated the fear of non-existence after death, regarded by many scholars as the most fearful of all our death related concerns, and the hardest to conquer (Goodman, 1981).

At the same time, the NDE eased fear of the unknown. Maslow (1964) claimed all humans have an instinctive *need to know* and *need to understand* rooted in their biological nature. With respect to mortality, the need to know what happens during and after death is likely to be a powerful urge because it represents the ultimate unknowable event. The element of uncertainty is often cited as a major component of fear of death (Wong, Reker, & Gesser, 1994), and was, in fact, the highest fear reported by the control group in this study. NDErs, by contrast, had low fears pertaining to the element of uncertainty, and often felt they had gained a valuable insight into the process (physically, psychologically and spiritually). In sum, the NDE was highly beneficial, especially when the experience was positive, as it satisfied an innate psycho-biological need to know, whilst simultaneously alleviating fear of nonexistence (as well as fear of pain and suffering). As Wong (2012) noted, "uncertainty coupled with finality can create a potential for terror" (para. 9), hence in the most colloquial of terms, the NDE 'killed two (or three) birds with one stone'.

Although death researchers often question the connection between belief in the afterlife and death attitudes, with some even claiming it can increase fear (Exline, 2003),

NDErs' post-mortem beliefs differed from others in several notable (and interconnected) ways. Unlike many people's beliefs, they were deeply felt, idiosyncratic beliefs formulated through direct personal experience rather than a biproduct of religiosity. In keeping with previous research, the present study showed NDErs typically rejected religious dogma and practice, and belief in the traditional Western denominations, such as Christianity, declined after their NDE. Instead, NDErs were more likely to align with alternative belief systems, such as those typically associated with Eastern schools of thought (reincarnation and disembodied spirit) or more secular based philosophies such as extra-dimensional reality (discussed more in section 12.4). More than one type of after-death belief was sometimes adopted, and NDErs often pursued novel, alternative ideas pertaining to post-mortem continuation. Hence, they were highly personalised *intrinsic* beliefs rather than extrinsic. As previous research has shown, only intrinsic religious or spiritual beliefs tend to positively impact attitudes to death (Ardelt, 2008; Harding, et al., 2005; Thorson & Powell, 1990).

The NDErs' belief in post-mortem survival was also associated with an extremely high level of certainty, with many NDErs claiming they could never be convinced otherwise. As researchers in the field of thanatology have demonstrated, strength of conviction in a chosen system of belief, whether theism or atheism, is more important than type of belief for alleviating fear of death (Aday 1984-85; Downey, 1984; McMordie, 1981; Rasmussen & Johnson, 1994; Wink & Scott, 2005). The reason for this is unclear, however McMordie (1981) suggested a strong belief system creates a feeling of control or predictability over life, which manifests as a decreased fear of death. Leming (1980) argues that ambivalent or noncommittal beliefs produces fear at both ends of the spectrum – fear of judgment in the afterlife, as well as the 'secular crisis' presented by the view that nothing exists beyond death. It is better therefore, to align with one end of the spectrum rather than somewhere in the middle.

Although McMordie purports strong belief systems impart a sense of control over life, interestingly, some NDErs spoke of the opposite. Many attributed their lessened fear of death to a *relinquishing* of control. The NDE had alerted interviewees to two things: 1) they could not control when and how they would die – it could happen at any time, and/or 2) that forces (e.g., God, the universe, or something unknown) outside of themselves ultimately were in control of their life, and they were simply participants or players in a larger universal

plan or scheme. This realisation meant NDErs often let go of any illusions of personal control over both life and death. With it came a sense of peace, as there was no point worrying about something they had no power over. Contrary to McMordie's proposition therefore, some strong belief systems may result in decreased fear as they eliminate the *need* for control. They release the individual from the burden of personal responsibility (surrendering it instead to a greater power).

Also important was the cognitive process involved in the construction of this belief. For nearly all participants, this belief explicitly contradicted their previous thoughts about reality and the state of death, meaning most NDErs had to redefine their 'assumptive world', described by Janoff-Bulman (1992) as a "stable, unified conceptual system(s)," and a "strongly held set of assumptions about the world and the self" (p. 5). As one NDEr explained "It was like opening up a whole new worldview. It's a paradigm shift" (NZ6M). Heine, Proulx and Vohs's (2006) meaning maintenance model (MMM) asserts that people depend on various meaning frameworks (expected relationships or associations) to make sense of their world, and when something occurs that contravenes expectations, the individual can become cognitively and emotionally overwhelmed. To reduce discomfort, people will either assimilate the anomaly into their existing assumptive world or alter their schema (worldview) to accommodate the violation. Although most people tend to reinterpret incongruous events to align with their existing framework, the greater the violation the more urgent the need to rebuild meaning, forcing the individual to assimilate alternative, novel frameworks. Furthermore, meaning maintenance efforts are intensified if the event relates to the eventual ending of one's own existence (Greenberg, Koole, & Pyszczynski, 2004; Heine, Proulx, & Vohs, 2006). In this case, it appeared the violation was so enormous, the NDE so far removed from ordinary everyday experience, it could not be assimilated into existing schema and was best interpreted and understood in metaphysical, or spiritual terms. As Wong (2012) noted, meaning reconstruction promotes death acceptance as it encourages intense meaning-seeking and meaning-making behaviour. When conceived of in spiritual terms, it is especially beneficial as it provides a meaningful framework for the whole of life to be understood – something that may have been formerly lacking in the individual's life. Wong's holistic meaning management theory (MMT) predicts that all things being equal, those who integrate a spiritual or transcendent dimension

into their worldview will accept death more readily and fear death less, than those with do not.

10.3 Features of NDEs that Encourage Post-Mortem Survival Beliefs

Why NDEs encourage such a strong belief in post-mortem survival is a question that has previously remained unanswered, at least from an empirical point of view. Hine (1977) contended that radical alterations in conscious perception such as NDEs "reinforces experientially the perception of the physical body and the world of social reality as confining and limiting, a prison from which one longs to be free" (p.381) – a viewpoint echoed by other authors such as Jung (1944), who described his return to the world post-NDE as feeling trapped in a meaningless 'box system' from which he could not escape. Hufford's (1982) 'experiential source hypothesis' even argues these anomalous events may be the *origins* of religious belief and the concept of life after death, rather than simply being a product of culture and faith.

The present findings confirm this belief was specifically related to the phenomenological content of the NDE, and not associated with previous or subsequent religiosity. Transformation typically happened immediately after their NDE, often as soon as they regained consciousness, meaning it was also unlikely to be a product of other subsequent life changes, or a symptom of post-traumatic growth.

In terms of specific features, some authors have linked this belief to the OBE, or sense of disembodiment, which may create the dualist impression that human beings are comprised of a physical and non-physical body (soul, spirit or essence of self) (Ring, 1980; Tiberi, 1993; Tassell-Matamua & Lindsay, 2016). However, both qualitative and quantitative approaches from this study did not find any significant association between the OBE and increased survivalist beliefs. Surprisingly, only one interview participant directly linked this characteristic to belief in post-mortem continuation.

Although data suggested the affective and transcendental elements of the experience played a significant role in this process, when asked directly what part of the experience led to a belief in post-mortem continuation (and hence loss of fear of death), participants were often confused by the question and often answered along the lines of "Well, the whole

experience really", or "Because I was there doing it". It was difficult for individuals to pinpoint a specific feature, suggesting NDErs do not view their NDE as a collection of separate characteristics in the manner NDE researchers do. This observation is supported by literature claiming experiencers often describe multiple characteristics as a singular feature (e.g., the characteristics of light, encountering a divine presence, unconditional love, and universal knowledge are often grouped together as an encounter with God or a supreme creator). Rather, it seemed the experience of remaining consciously aware during a supposed state of physical death was key, as typified by the comment "I was so surprised to know my consciousness still existed" (US2F).

Rather than any specific feature, an important aspect to emerge was the perceived validity of the experience. Regardless of how the experience unfolded or was interpreted, all interviewees were strongly convinced it was an authentic, psychologically valid experience of death, rather than a dream or hallucination. This further reinforced (and even created) their new beliefs and attitudes to death (even atheists were convinced it was a real encounter with death, and if not indicative of post-mortem survival, it still suggested death was an overwhelmingly pleasant experience). Four aspects contributed to this sense of authenticity: realism/noesis, flashbulb memories, veridicality and confounding expectations. Each are explained further below.

Sense of realism/noesis. All interviewees in this study described their NDE as having a definite quality of realism, in that it felt as vivid and realistic (if not more so), than ordinary everyday conscious awareness. This strong sense of objective reality, coupled with a 'knowing' that what they experienced was true, is often described as noesis or noetic quality. Noetic quality has been recognised by others studying transcendent or spiritual experiences, such as the mystical experience. Experiencers typically feel as though they are in some way accessing 'ultimate reality', to the extent that ordinary conscious experience may seem illusionary or unreal. The sensation is so convincing that experiencers are rarely able to be persuaded otherwise. Burnham (1990) described it accordingly:

> To have one of these experiences is like standing on a hillside at night, in the midst of a thunderstorm. All around lies darkness and rolling black clouds; and suddenly the sky is torn open by a sheet of lightning and there exposed before you is the whole valley - trees,

> pastures, woods, streams, hills. The lightning ends. You are plunged again into darkness. But now you know what's there, and no one in the world can persuade you that you imagined what you saw. (1990, p. 219-220)

Flashbulb memories. The vivid and lasting nature of the NDE was mentioned by all NDErs in this study. Most claimed they could recall their experience 'like it was yesterday', which to them represented a significant departure from imaginary or dream-like episodes. In some cases, a large amount of time had elapsed since the occurrence of the NDE (48 years in one case), yet recall of the event was still exceedingly clear. The fact memories remained detailed and vivid over time indicated to experiencers it was an important and meaningful event. These memories are often described in the psychological literature as 'flashbulb memories'. Flashbulb memories usually occur in association with an unexpected emotionally arousing, shocking event, and are experienced as extremely detailed and vivid, with unusual image-like or perceptual features not associated with ordinary memories (Brown & Kulik, 1977; Mackay & Ahmetzanov, 2005).

Other research (Martial et al., 2017; Moore & Greyson, 2017; Palmieri et al., 2014; Thonnard et al., 2013) supports the NDErs claims these were 'no ordinary memories'. Moore and Greyson (2017) administered the Memory Characteristics Questionnaire (Johnson et al., 1988) to 122 NDErs, finding scores were higher for NDE memories than for both real events and imagined events, suggesting NDE memories are indeed experienced as hyperreal, or 'realer than real', as suggested by the NDErs in this study. Palmieri et al. (2014) used electroencephalography (EEG) to investigate the characteristics of NDE memories and their neural markers. The researchers also found NDE memories were significantly different from memories of imagined events. EEG results indicated NDE memories were linked with the theta frequency band, a well-known marker of episodic memory and therefore cannot be considered equivalent to imagined memories. Hence, the present study provides further support for the findings of the above studies, and vice versa.

Veridicality. Six of the participant's accounts of material reality during an OBE were independently corroborated by others. These instances of apparent veridical perception (AVP) appeared to influence NDErs in two ways. Firstly, by witnessing their own resuscitation it established they were 'clinically dead' at the time, hence their experience

could be considered a genuine encounter with death. Secondly, it suggested to the experiencer that mind could operate independently of a functioning physical body, as their account of events corresponded with others who were present (usually medical staff). AVP during cardiac arrest has been cited in other cases of NDE where medical notes have independently verified the details (e.g., Lai et al., 2007; Greyson, 2010; Jourdan, 2006; Parnia et al., 2014; Ring, 1980; Ring & Valarino, 1998; Sabom, 1992,1998; van Lommel et al., 2001). Veridicality was likely to be of importance as it served to validate the NDErs' subjective experience and provide reassurance that they were not delusional or 'crazy' (despite one of these participants being told this by attendant medical personnel). It may have also provided reassurance in the same manner to loved ones. As NDE researchers have noted, the support of others is crucial for successful integration of any aftereffects (Atwater, 1988; Hoffman, 1995; Morris & Knafl, 2003; Noyes, et al., 2009; Sutherland, 1992). For example, Sutherland (1992) observed when NDErs or their significant others interpret the experience as a meaningless hallucination, they were less likely to experience positive outcomes. When the subjective experience matches consensual reality however, it becomes much more difficult to 'explain away'.

Confounding expectations. In all cases, the participants' subjective experiences confounded their existing thoughts and beliefs about death, physically, psychologically and spiritually. Because these experiences did not match expectations, it further convinced individuals they had not somehow fabricated the episode. Content of the NDEs frequently contravened previous spiritual beliefs. For example, a devout Christian had an experience involving reincarnation, which she had not believed in beforehand, and five atheists had NDEs when they had not expected anything to happen. Two of the participants were young children at the time of their NDE. Both contended they had no previous expectations about death, claiming they were too young to have any preconceived ideas, or even fully understand the concept of death. Others relayed their experience was unlike NDEs described in popular media (incorporating bright lights and tunnels), and consequently expressed concern over whether their experience could be considered an NDE, worthy enough to be studied (it was). That NDEs are uninfluenced by prevailing cultural models has been supported by other research. Athappilly, Greyson, and Stevenson (2006), for example, compared 48 NDE accounts collected before and after 1975 (when NDE accounts first entered popular English-speaking media), finding the type and frequency of reported

features were similar, challenging the notion NDEs are shaped by societal factors. The present study, in conjunction with others, continues to refute the expectancy hypothesis, or the idea that people see what they expect or want to see (Blackmore & Troscianko, 1988; Britton & Bootzin, 2004).

These four elements: (realism/noesis, flashbulb memories, veridicality, confounding of expectations) lent an important sense of authenticity to the experience, integral to the changes made. NDErs considered their experience to be a genuine encounter with death, (rather than a hallucination) - a reliable preview of what would follow permanent, irreversible death.

10.4 The Construct of NDErs' After Death Beliefs

Given most NDErs attributed their decreased fear of death to a new or increased belief in post-mortem continuation, investigating the thematic form of this belief becomes of considerable interest, particularly for those investigating the relationship between afterlife beliefs and death attitudes. If patterns are found, then it may provide insight into what types of beliefs are most successful for encouraging death acceptance. It also advances understanding of how NDEs shape, not just afterlife beliefs in general, but certain types of beliefs.

In the present study, the NDErs' understanding of post-death existence was most commonly conceived as a state of *spiritual embodiment*. Spiritual embodiment assumes both consciousness and identity will continue in a "spiritual body", but the physical body will be destroyed. Whilst the concept of individuated immortality (spirit or 'soul') is also central to the Christian faith (and most Western societies are based on the ethos of Christianity), this belief was almost certainly a product of their NDE, rather than a Western cultural artefact, or 'seeing/believing what you expect to see'. Aside from the fact many NDErs were atheists beforehand, data showed levels of religiosity declined after their NDE, with interviewees claiming their experience of the 'afterlife' did not correspond with anything they had been taught via religious instruction. These findings align with those of other studies describing decreased religiosity but increased spirituality after NDEs (e.g.,

Greyson, 2006; Khanna & Greyson, 2013; Ring, 1980; Sutherland, 1990; Tassell-Matamua & Steadman, 2017).

Several aspects of NDEs may have implied that both consciousness and identity would be preserved after death. Interview participants claimed that throughout their NDE, they retained their personal identity, with the attendant capacity to think, analyse, recall memories, and experience emotion. Activities and aspects of their current life were sometimes referenced, forming the basis of a life review or for providing reasons for return (e.g., to look after children, to achieve a specific purpose). Self-recognition was also experienced during OBEs, when witnessing their body below. NDErs felt they were still themselves, but more a "floating mind" (NZ7F) without a body to "cart their soul around" (NZ3M).

For NDErs, only belief in spiritual embodiment was positively correlated with approach acceptance. This may be because spiritual embodiment was the predominant belief adopted by NDErs in this study, but it might also simply be a reflection of the wording used in the construction of the DAP-R approach acceptance subscale. Several items were phrased using Christian-based terminology and concepts, such as "I believe I will be in heaven after I die" or "I look forward to reunion with my loved ones after I die". These items presume a specific type of existence following death (i.e., spiritual embodiment) and preclude other types of continuation beliefs, such as disembodied spirit or reincarnation. Alternatively, it is possible this type of belief was more readily accepted by NDErs as it provided reassurance and comfort that they would continue in a recognisable, familiar form. Otherwise death becomes separation from everything that gives life meaning, a concept a little harder to accept.

Deviating even further from traditional forms of afterlife belief, the NDErs' understanding of post death existence was sometimes described in more secular terms (e.g., vibrational, dimensional, and holographic). The after death state was not a geospatial location per se, but more a change of perception or 'frequency', somewhat similar to changing channels on a television set. This 'unseen' frequency or dimension was described as existing all around, but unable to be accessed by ordinary conscious awareness. Many participants felt a religious explanation was inadequate, but so was a materialist one. According to the words of one participant, "I wouldn't call it God and I wouldn't call it

nothing" (CA1F). Some believed that a yet-undiscovered scientific explanation supporting the idea of non-local consciousness would hold the answers.

Interestingly, the idea of NDE as an extra-dimensional experience has recently been explored by several researchers (Bryan, 2003; Jourdan, 2011; Lake, 2015). Lake (2015) suggests that whilst some NDE features probably take place in 4-dimensional space-time, many of the more unexplainable features of NDEs, such as veridical perception and enhanced perceptual experiences, may be associated with possible quantum-level processes that take place in higher order space-times. Anomalous states of consciousness, such as NDEs, may involve "discrete neurons, networks or groups of functionally related networks that 'resonate with' other (non-living or living) systems situated in higher-dimensional domains" (p.136). The fact that we can only observe three dimensions (plus the fourth dimension of time) does not preclude others from existing. Hence, although the physical body is confined to three dimensions, it is not outside the realms of possibility that consciousness may exist as part of a greater dimension, and NDEs may be exactly what participants claim it is – an extra-dimensional experience. Subjective descriptions from this research lend a measure of support to these theories. Whether or not this conscious experience is indicative of permanent, irreversible death is, of course, subject to debate.

In keeping with other studies such as Sutherland (1990) and Wells (1993), NDErs were more likely than nonNDErs and those who had never been close to death to believe in reincarnation, however the figure was not quite as high as that reported in previous studies (70% in Sutherland's case). Participants attributed this belief to knowledge gained during their NDE (reliving past lives), a product of subsequent paranormal experiences following their NDE (suggestive of reincarnation), or an artefact of newfound spiritual beliefs that embraced a belief in reincarnation (i.e., Buddhist, New Age beliefs). These findings are very similar to those reported by Wells (1993), who found reincarnation beliefs were related to either direct knowledge of reincarnation gained during the NDE, knowledge gained through a general psychic awakening following the NDE, or exploration of alternative perceptions of reality following the NDE. Although Sabom (1998) questioned the legitimacy of previous research findings, claiming the random sample of NDErs in his qualitative study (who were not IANDS members) were no more likely than other participants to believe in reincarnation, this study also employed a heterogenous sample, yet results were akin to those described by

Sutherland and Wells. This suggests NDEs do indeed have the capacity to encourage belief in recycled existence; however it is not always directly related to the content of the NDE and may be a consequence of other life changes.

Although increased belief in reincarnation has been previously identified, disembodied spirit, or the belief that consciousness will remain, but individual identity and the physical body will be lost, was the second most common belief reported by NDErs in this study. Furthermore, this belief represented the greatest difference between the three groups, with a very strong effect size. To the author's knowledge, this has not been empirically reported before.

One of the defining characteristics of an NDE is a sense of harmony or unity with the universe and it is not unusual for experiencers to describe feelings of connectedness or oneness with the cosmos, God or 'ultimate reality'. It is this specific characteristic that may create belief in disembodied spirit. In the present study, several participants reported a sense of ego-loss, a feeling of dispersal or expansion, and merging with a larger universal source of consciousness. Some claimed this sensation influenced beliefs about the eventual state of death as well as subsequent death attitudes, by offering reassurance they would continue as a part of a larger, interconnected and indestructible whole.

Burris and Bailey (2009) suggest that experiences of non-ordinary conscious awareness "may shape people's after death beliefs, such that an 'Eastern' framework typified by Reincarnation and Disembodied Spirit makes the most sense to adopt" (p.183). Indeed, parallels can be drawn between features of NDEs and many concepts reported in Eastern spiritual texts, such as the Upanishads (a collection of ancient philosophical Sanskrit texts written in India around 500 - 800 BCE c) and the Tibetan Book of the Dead. In describing the stages of death, the Tibetan Bardo Thodol (Book of the Dead), outlines many features strikingly similar to those reported by NDErs, including OBEs, visions of the 'Blinding Clear Light of Pure Reality', a sense of timelessness, encountering a succession of deities, and a life review where the departed is judged based upon past deeds (Becker, 1985; Grof & Grof, 1980).

Interestingly, cultures that embrace a belief in reincarnation and disembodied spirit are often those where meditative practice is an integral part of the culture, notably in the

Hindu and Buddhist worlds (Murphy, 2001). Meditation is often seen as preparation for and a means to accessing transcendent or mystical forms of consciousness - altered states of awareness known to share many characteristics with NDEs, such as timelessness, positive affect, sense of disembodiment and feelings of universal connectedness (Pennachio, 1983; Greyson, 2013). Such experiences are often thought to provide an educative insight into the death experience, allowing the individual to make suitable preparations for the actual event. As Murphy (2001) noted "The idea was that those who went deeply into meditation were able to see 'beyond death's door,'" (p.102). Although NDEs are an accidental and unexpected occurrence, whereas meditative experiences are actively sought, there appears to be a common core of conscious experience shared by these states. Hence, it is not so much that NDErs 'adopt' an Eastern framework, but simply arrive to the same conclusion, albeit via differing routes.

Ken Wilber's (1993) theory of death transcendence claims this peculiar state of consciousness, which he terms 'non-dual' awareness, is the most authentic mechanism for transcending fear of death. Wilber claims the dualistic nature of reality (subject vs object), or the perception that organism and environment are separate entities, is an illusion. When ordinary everyday consciousness awareness is transcended (e.g., through meditative practice), the timeless, formless, non-dual nature of reality is exposed, and the individual realises all is connected and the present is eternal. No longer do they fear death as they inherently understand death does not exist. One can never die, because there is no separate self. Birth, death and eternity are one, they exist in the 'Timeless Mind' in a 'Timeless Moment' (p.111). Without this experiential knowledge, humans feel fundamentally distinct from the universe and spend life fleeing from the illusion of death.

While Wilber's theory is based on experiences elicited during meditation rather than the experience of death, it also serves as a potential explanatory hypothesis for NDEs and changed attitudes to death. In addition to qualitative findings confirming this link, NDErs who experienced the characteristic of comic unity had lower scores on the fear of death subscale. A degree of caution is required before assumptions can be made however, as other characteristics, such as feelings of peace and pleasantness, were more strongly correlated with DAP-R fear of death scores than a sense of unity. Nevertheless, the results of this study provide some measure of support for Wilber's theory and are worth exploring further.

It is important to note the beliefs described above were not mutually exclusive, with many NDErs subscribing to more than one type. This may reflect the differing states of conscious awareness that one may move through during an NDE, and the different types of characteristics experienced. For example, during the initial stages of the NDE the individual self-construct is retained, as illustrated by recognition of one's body during an OBE, and/or by the ability to think and analyse what is happening. A life review, whereby past lives may be revisited or reviewed may give rise to a belief in reincarnation. As the NDE progresses, personal identity may give way to a sense of universal oneness, as the characteristic of cosmic unity/ego-loss occurs, creating a belief in disembodied consciousness. Hence, while traditionally conceived of as separate, self-contained belief systems, for NDErs these after death beliefs are not necessarily incompatible. Depending on the type of characteristic(s) experienced, the NDEr may favour one type of belief, or a combination of beliefs.

10.5 Implications of the Present Study

From a pragmatic point of view, the results of the present study have important implications for death education. Although Western society typically regards death as an exclusively physiological affair perhaps best left to the domain of medicine, it is also a tremendously important psychological and spiritual process. In the end, practical care is not enough and many people also need to find meaning in death, and in life, to accept their mortality (Rinpoche, 1992; Wong, 2008, 2012). Although slowly changing, death-related matters (outside of pain/symptom control) have been ignored by the psychological, educational and healthcare industries (Wass, 2006). Existential and spiritual issues often become a conscious concern as people approach the end of life, yet there is little advice or guidance on how to prepare for what is perhaps the most important of all our psychological tasks. This affects a wide range of people, including the terminally ill, their loved ones, grief counsellors, medical personnel, as well as the general population.

Perhaps those most urgently in need are those imminently facing their own death. A recent nationwide study found that, despite being a highly secular country, 98% of 642 Aotearoa New Zealand hospice patients and their families considered spiritual needs at the

end of life to be extremely important, yet these needs were seldom met by healthcare professionals (Egan et al., 2011, 2017). These needs included a search for (1) meaning, (2) peace of mind, and (3) a degree of certainty in an uncertain world. The majority of participants regarded spirituality as distinct from religion (typically rejected by most patients), with most considering spirituality to be a much broader and more inclusive concept. These findings indicate an important need to address Aotearoa New Zealanders' spiritual needs and concerns at the end-of-life outside of conventional religious approaches.

Culture change within the health care sector incorporating psycho-spiritual issues is imperative. Rather than simply addressing physical and emotional needs, health professionals must deliver a more holistic care plan. Just as physiotherapists are trained to deal with physical issues, specialised spiritual psychologists or therapists could be trained in spiritual issues at death (both religious and nonreligious) and form part of a multidisciplinary team dedicated to the needs of the dying. As part of their professional training, and to help meet Aotearoa New Zealanders end-of-life needs in a more secular manner, these professionals could be educated about NDEs and the impact they have upon the experiencers outlook and attitude to death. Other studies have shown NDEs can have a beneficial psycho-spiritual effect on many people, despite not having experienced an NDE themselves (Horacek, 1997; Ring & Franklin, 1981-82; Ring & Valarino, 1998; Tassell-Matamua, Lindsay, Bennett, Valentine, & Pahina, 2016; Vinter, 1994). Within an Aotearoa New Zealand context, a recent study by Tassell-Matamua, Lindsay, Bennett, Valentine, and Pahina (2016) found that learning about NDEs significantly influenced a group of 143 university students' appreciation for life, spirituality and appreciation for death within a relatively short time frame. Given the need to find meaning in both life and death is perhaps more urgent for the dying, the above study speaks to the therapeutic potential of using NDEs within Aotearoa New Zealand palliative care settings.

Based on the outcomes of the current study, professionals could be educated about the type of fears that people have about death, and how NDEs often target these fears, or enable people to accept death more readily. This knowledge helps to form a dialogue with patients based on their specific needs. For example, given many people have concerns about the physical process of death, learning that death can be a blissful, tranquil experience free from pain and suffering, is likely to provide a measure of comfort (peace of mind) to dying

individuals, as well as their loved ones. As this study demonstrated, the uncertainty of what follows death is a common fear. Learning that most NDErs become profoundly convinced in the survival of consciousness beyond death, despite prior spiritual beliefs, is also likely to be of tremendous benefit for those with heightened transpersonal concerns. Understanding that NDErs often form more secular-based understandings of the after-death state, potentially explainable through physics-based concepts like higher order quantum fields, offers a new and perhaps more palatable understanding of the 'afterlife'. Jung conceded that humans must strive to form some conception of life after death no matter what form it takes, even if it results in failure. Considering the potential psychological benefits to be gained, "not to have done so is a vital loss" (Jung, 1934, para. 10). This process, coupled with the finding that NDErs believe life has a purpose, could help the patient find increased meaning in death.

Ring (1995) found the most influential part of his NDE education program delivered to 101 college students was direct in-class visits made by NDErs themselves. Anecdotal, first-hand accounts are often a powerful means of imparting information, perhaps because the emotional impact of the experience can be more effectively communicated. Hence, arranging scheduled visits from actual NDErs may also be useful. These individuals would be able to talk one-on-one with dying individuals and their families on request, a role similar to that traditionally assigned to religious clergy and pastoral caregivers.

Although significant benefit may be derived from learning about NDEs, it is important to note this therapeutic effect may be reliant upon prior receptiveness or openness to the reality of NDEs, as well as their interpretation. A committed materialist may not find the stories of NDErs quite as compelling as those with a more spiritual outlook, for instance. Indeed, as some NDErs personally attested in this research, they thought NDEs were 'nonsense' until it happened to them. In this study, the unique phenomenological experience – how it felt, its implications for the survival of consciousness, coupled with a strong sense of certainty in its objective reality, was crucial to any changed perspectives about death. For this reason, the possibilities for replicating an NDE-like experience in a clinical or therapeutic setting must be considered, for as Maslow (1966) highlighted, "There is no substitute for experience, none at all" (p.45). This is particularly pertinent for non-ordinary

or transcendent states of consciousness like NDEs, because by nature they are ineffable - beyond words and beyond reason.

Fortunately, one need not nearly die to reap the benefits. Comparable subjective experiences have been induced through hypnosis, shamanic journeying, meditation and hallucinogens such as psilocybin. As Ring (1990) noted, in considering the similarities between other forms of non-ordinary experience and NDEs: "…strictly speaking, this realm is not one that awaits us only after death. It exists now and is in principle available *in life* to anyone who has learned the "access code" (pp. 208–209). Evidence suggests other, similar forms of conscious awareness can also result in psychologically advantageous outcomes, including a revised orientation to death.

In the researcher's practice as a clinical hypnotherapist, many clients have reported NDE-like phenomena during deep states of hypnosis, including distortions of time/space, intense positive affect, feelings of disembodiment and sense of ego-loss. This subjective experience often has a profound effect on the individual and is often perceived as a highly meaningful, spiritual experience. Literature has described similar findings. Cardeña (2006) reported characteristics of deep or very deep hypnosis approximated both mystical and NDE phenomena, with nine-month follow-up revealing a variety of positive sequelae including increased personal growth, meaningfulness in life, and less anxiety. Babb (1989) guided a small group of participants into a hypnotic state that replicated the stages of a typical NDE, with some spontaneously reporting an increased acceptance to death afterwards.

These studies suggest hypnosis could be deliberately used to combat the fear of death, particularly fears of a transpersonal nature. A hypnotic procedure could be developed guiding participants into an altered state of consciousness with the intention of creating 'death transcendence', that is, reconstructing the meaning of death by changing perceptions about the mind/body relationship. Although many NDE-like characteristics can be spontaneously induced through deep hypnosis, specific features such as life review, being surrounded by light, entering a transcendental environment and meeting deceased loved ones could be facilitated through hypnotic suggestion and guided imagery. As the current study indicated, participants often had difficulty isolating the characteristic(s) that were most transformative, so replicating the full experience (in its most typical form) is likely to be the most effective approach. Nevertheless, special attention could be given to creating or

enhancing positive affective sensations such as feelings of peace and calm, and a sense of disembodiment - something that could be achieved through guided visualisation, for instance by imagining looking at one's physical body from an elevated visuo-spatial perspective. Afterwards, the participant would be encouraged to reflect on the experience and examine any existing or new perceptions about the nature of reality, the physical body, the properties of the mind, who and what the 'self' is, and consequently, the meaning of death.

Adopting a hypnosis-based clinical protocol to induce an NDE-like experience has many advantages over other methods. Notably, it does not require a real-life encounter with death. It is an internally produced state of mind, meaning it is less likely to be attributed to external factors, such as drug use. It is flexible and enables a high degree of user control, meaning the inner experience can be tailored according to the client's personal preferences and life experiences. For example, the person can visualise meeting a cherished loved one, rather than a generic spiritual being with little emotional connection. One issue however, is the intervention is largely reliant on the hypnotic capability of the participant (and therapist skill). Some may find it difficult to achieve the depth of hypnosis required to trigger a mystical state of consciousness, or they may not be adept at mental visualisation. Ethical considerations must also be observed. Unanticipated, distressing and/or extreme emotional reactions can sometimes occur under hypnosis (known as abreaction (Putnam, 1992)), hence therapists should possess a high level of professional hypnotherapeutic experience and skill to ensure any potential abreaction is handled appropriately. Screening potential participants for suitability on the basis of relevant inclusion and exclusion criteria is recommended - initial recruitment should target those familiar with hypnotic or transcendent states of consciousness, such as meditation. Voluntary, informed consent must be attained and a commitment to follow-up is strongly recommended.

Perhaps a more accessible intervention would be to create a virtual reality NDE. Virtual reality (VR) is an immersive computer-generated virtual environment. It uses real-time computer graphics and sound, body tracking devices, visual displays, and other sensory input devices to create an environment akin to real world objects and events (Krijn, Emmelkamp, Olafsson, & Biemond, 2004). VR is recognised as a useful therapeutic tool, particularly for treating anxiety disorders such as fear of flying, heights, claustrophobia, and post-traumatic stress disorder, where it is considered an effective (often more effective)

alternative to standard in vivo exposure therapy (Powers & Emmelkamp, 2007). It has also been used successfully to treat chronic pain, stroke, and spinal cord injury (Hoffman et al., 2008; Kizony, Katz, Weingarden, & Weiss, 2002; Kizony, Raz, Katz, Weingarden, & Weiss, 2005).

Bourdin, Barberia, Oliva, and Slater (2017) recently examined whether a VR simulated OBE illusion (an impression of moving up and out of the physical body) impacted participants' fear of death. After virtual reality exposure 16 participants were asked to complete the subscale ('Death of Self') of the Collett-Lester Fear of Death scale (Lester, 1990). The researchers found fear of death in the experimental group was significantly lower than in the control group (81 people who were interested in OBEs but had never experienced one). Sixty three percent also reported an increased belief in life after death, compared to 32% of the control group.

Extending this study further, a VR NDE could be designed to mimic other features of a typical NDE, based on actual NDE accounts. Although not all aspects of NDE could be recreated, particularly the more unusual cognitive elements (such as a sense of timelessness), it could recreate commonly reported characteristics such as buzzing or wind-like sounds, moving through a tunnel, being absorbed into a bright light, entering a beautiful transcendental environment, meeting a spiritual being, as well as an OBE.

Although the level of realism (sense of 'presence') is important, VR studies have shown that exact reproductions are unnecessary to elicit emotional and behavioural responses (Powers & Emmelkamp, 2007). Because of its immersive nature (achieved through use of multiple sensory modalities), VR experiences often trigger physiological and psychological reactions not able to be elicited by 2D screen based interventions (Krijn et al., 2004). Although it may not capture the full extent or profundity of the actual experience, it would be interesting to ascertain whether VR NDE experiences can also influence attitudes to death. As supported by the findings of Bourdin et al (2017), the potential of using VR for treating the fear of death is promising. At the very least, it serves as a useful starting point for thinking about death in different ways, and could be used as a suitable adjunct to other educational materials. It may also help reduce resistance to death. Those approaching the end of life must navigate an unknown spiritual terrain; something that incites fear in many people. Understanding what has happened to many others may be reassuring and lends an

element of predictability to the final event. When the time comes, this knowledge may encourage the individual to let go and surrender to death with acceptance.

10.6.1 Other implications

On a final note, other findings from this research may have implications for near-death studies in general, particularly the need for more cultural diversity in NDE research. Although all NDE features identified in previous Western studies were evident in the present sample, analysis of narrative accounts suggests there were slight cultural differences in the expression and interpretation of some characteristics. In this study, Aotearoa New Zealand born individuals were less likely to describe 'the light' as bright and did not attach any personal or divine attributes to it. Rather, Aotearoa New Zealanders typically described it as an unusual, 'amazing' light surrounding them, rather than a bright point at the end of a tunnel or as a 'being of light', (as often described in the literature). Perhaps related to this, no meeting or communicating with 'God', or other similar supernatural being was reported. Excepting one individual, they also did not describe any feelings of unconditional love in connection to the light.

These findings are strongly reminiscent of Ohkado and Greyson's (2014) recent qualitative assessment of 22 Japanese NDEs. Compared to observations of Western NDEs, Ohkado and Greyson found none of the Japanese experiencers interpreted the light as having a personality, did not communicate with the light, or report a specific sense of being loved, which the authors noted was "a profoundly important feature in Western NDEs" (p.192). Tachibana (2000) proposes such features found in Western accounts are cultural artefacts influenced by the Christian tradition, particularly the "God is Light" motif. Ohkado and Greyson also claim lack of personification of the light in Japanese NDEs may be connected to the low rate of religiosity in Japan - only 25% of the population consider religion to be an important part of their life. By comparison, in the United States, (where most NDE research has been conducted), 65% consider it important (Crabtree & Pelham, 2009, as cited by Ohkado & Greyson, 2014).

The present research suggests interpretation of this feature as a 'being of light' is not so much a cultural artefact of 'Western' NDEs, as suggested by Tachibana (2000) and

Ohkado and Greyson (2014), as Aotearoa New Zealand is also a Western country with a socio-cultural heritage strongly influenced by the ethos of Christianity. However, in a 2009 Gallop worldwide poll, Aotearoa New Zealand ranked 14th least religious, with only 33% claiming religion to be important in their daily life (Crabtree, 2010), placing it considerably below the United States in terms of religiosity. Hence, the nature and interpretation of the light is likely influenced by active religious belief (or lack thereof), rather than Westernisation, per se. These results lend support to Ohkado and Greyson's (2014) claim that personification of the bright light, a sense of being loved, and communication with the light "are not universal but rather culture-specific features" (p.194). Building upon this, it also appears there can be considerable variation amongst Westernised societies, despite a similar cultural heritage. Perhaps this interpretation (i.e., personification of the light) is one better confined to the United States.

One of the core features of an NDE is the experience of a 'heavenly' or transcendental environment, with NDErs often describing a realm of incomparable beauty. However, another point of difference was the distinct lack of beautiful landscapes, objects or other recognisable features reported by Aotearoa New Zealanders. In comparison to other Western accounts often describing scenes such as beautiful gardens, rivers, buildings, or cities of light, when a transcendental realm *was* reported, it was as a formless, unidentifiable space, or as in one case, some kind of 'room'. Participants typically knew they were somewhere different, but did not know where they were or how to describe it (outside of identifying unusual sounds and light).

It seems likely any images relating to an unearthly environment are also culture-specific. Ohkado and Greyson (2014) noted the transcendental features described in Japanese NDEs differed from typical Western accounts. The Japanese accounts in their study were most likely to describe flower gardens – a typical image of 'heaven' (or a beautiful place) for the Japanese. By comparison, Western accounts usually describe imagery based on the Christian tradition, such as a 'city of light'. It is interesting that the Aotearoa New Zealand born sample in this study did not report anything at all. Again, this may be due to the low rate of religiosity in Aotearoa New Zealand, particularly amongst that of the interview sample. Alternatively, it may be because, unlike the Japanese, there are no culturally-specific images of beauty or 'heaven' available to Aotearoa New Zealanders

(outside of mainstream religious interpretations). It is worth noting the two Māori participants did not describe any beautiful landscapes or features either. Similar to Pākehā (Aotearoa New Zealanders of European descent) accounts, one spoke of entering an unidentifiable realm where 'her people' were waiting. Of course, it is entirely plausible that with a larger sample more transcendent features may have been identified. However, it may also mean that in the absence of any cultural reference points, participants experience a type of void (albeit pleasant). These findings might help identify an underlying core experience in NDEs, occurring regardless of cultural interpretations.

10.5 Limitations of the Current Study and Future Directions

Although it seems clear NDEs change an individual's attitudes and beliefs about death, the findings of the present study must be interpreted with some degree of caution.

The first issue relates to data normality. According to quantitative results, NDE data for the majority of scales showed the distribution of scores was non-normal. Data for death attitudes was often skewed to the right (indicating lower scores/lesser fears) compared to the other groups, and after death beliefs were often skewed to the left (indicating a greater level of belief). This meant nonparametric tests were used, which are generally regarded as less powerful than their parametric counterparts, sometimes failing to detect a significant effect where one actually exists (Frost, 2015). However, as the current results were significant in most cases, the non-detection of effects is of lesser concern. Given the study groups were of moderate size, non-normal data in this research may suggest one of two main things; 1) it is a correct observation of a pronounced, yet real effect or 2) the sample was biased. Other NDE researchers have also reported non-normal distribution when measuring aftereffects, with NDE data sometimes exhibiting near ceiling effects (e.g., Khanna & Greyson, 2014; Rominger, 2011; Steadman, 2015; Schwaninger et al., 2002), therefore it is highly likely data was measuring a real effect. However, the possibility of sample bias cannot be ruled out.

Most of the participants in this study were self-selected, meaning participants chose to participate. Self-selection has always been regarded as a major problem in NDE (and

indeed all social science) research, as only those who are interested, motivated, more vocal or regard their experience as significant, are likely to volunteer. Others may not volunteer because they were not interested, their NDE was not considered meaningful, or aftereffects did not occur. This means results are likely to be skewed or biased, and the impact of the NDE perhaps overblown or exaggerated. Whether results accurately represent the wider population of NDErs is difficult to determine. This limitation is somewhat tempered by the fact that six participants in the qualitative sample were randomly selected, yet their accounts were akin to others, and interview findings corresponded highly with the survey data. This helps place greater confidence in the overall results.

Another key issue is the research was reliant almost entirely on subjective impressions of change. Although efforts were made to identify and record examples of behavioural change consistent with a lessened fear of death, it is not known how accurate these self-assessments were (i.e., whether the NDEr had actually changed, or simply felt they had). Although there is data to support the reliability of such self-reports (Groth-Marnat & Summers, 1998), as Noyes et al. (2009) point out, self-reporting may be prone to response bias, particularly if participants regard their NDE as an important spiritual experience. Initial impressions deem this to be unlikely however, as interviewees who preferred materialist explanations for their NDE also demonstrated a changed attitude to death.

Response bias can manifest in several ways. Participants may provide socially desirable responses to make themselves look more favourable. They may display 'acquiescence', or a tendency to agree with all the questions', or 'demand characteristics', that is, attempting to figure out the purpose of the study and unconsciously or consciously altering their responses to suit (or not suit) (Furnham, 1996). Efforts were made in the interviews to reduce response bias by displaying unconditional positive regard, asking open ended questions, avoiding leading questions, and not disclosing the researcher's own opinion. Survey response bias was also reduced by utilising Likert scales, which balance favourable and unfavourable responses on an interval scale (rather than yes/no questions), resulting in more accurate answers (Goodwin & Goodwin, 2016). Nonetheless, future studies would benefit from including more objective measures of change, such as systematic behavioural observations or/and third-party informants to verify changes.

The study could not and did not utilise any premeasure to assess pre-existing attitudes and beliefs prior to the NDE. Hence, it is not known whether results reflect a causal effect of the NDE. Although the research attempted to cater for this shortcoming by comparing NDErs with nonNDErs, it is possible the NDErs in this study exhibited these traits anyway. Alternatively, a low fear of death may increase the probability of having an NDE (rather than the other way around). Similarly, belief in post-mortem continuation may facilitate an NDE, although prior research has demonstrated no relationship between pre-existing spiritual beliefs and the incidence or type of NDEs (e.g., Fenwick & Fenwick, 1995; Pasricha & Stevenson, 1986; Ring, 1980; Sabom, 1982; Sutherland, 1990). Although qualitative findings strongly suggest the NDE was causative, this observation is reliant on self-reporting, which has its own limitations (previously discussed). Unfortunately, because NDEs are unpredictable events of unknown etiology, assessing NDErs beforehand is currently unfeasible. A possible future option may be to study patients who undergo hypothermic cardiac arrest (a surgical procedure that intentionally induces a state of cardiac arrest). Assessments could be made before and after the event, at various time intervals (similar to the van Lommel et al. (2001) study). This would help better determine whether the NDE itself (if one is experienced) is responsible for change.

Perhaps the most challenging aspect of this study was finding and encouraging participants to complete the online survey. Originally, the study was intended to target the Aotearoa New Zealand population only. Low response rates, plus a high rate of survey incompletion, meant this objective was difficult to meet. There are two possible reasons for this. One reflects the lack of interest in completing online surveys in general. Low response rates are recognised as a continuing problem for those conducting online surveys. Competing demands for time and attention, plus 'survey fatigue', have decreased the likelihood of individuals commencing and completing questionnaires ("Collecting Survey Data", 2017). According to Survey Monkey, the world's leading survey software company, most people are only willing to spend 5-10 minutes completing a survey. After this, drop-out rates dramatically increase. Therefore, shorter surveys have a much higher completion rate (Sorman, 2014). The present survey took about 15-20 minutes to complete; hence shortening the length of the survey, and/or providing an incentive to complete it may have improved the overall response/completion rates.

Another reason may be that NDEs are not well understood or accepted by the general public in Aotearoa New Zealand. Nearly all interview participants described issues discussing their NDE with others, often experiencing dismissal or ridicule upon disclosure. This issue is perhaps best illustrated by the following anecdote. A relative of the researcher posted a link on a national Facebook group for pacemaker patients and received mixed comments. Although some were positive, others were dismissive and derided the phenomenon as a meaningless hallucination. This meant some NDErs did not place comments directly, but instead contacted the researcher privately to avoid ridicule. Hence, potential participants may: 1) not identify their experience as an NDE or view it as insignificant, and 2) be reluctant to complete the survey for fear of being negatively perceived by others. Improved response rates may occur if the phenomenon is legitimised and accepted by the wider public.

The wording of some survey items, particularly the approach acceptance subscale, was at times problematic. Some participants subsequently communicated (either in person or over email) that the wording felt inappropriate and did not align with their experience or beliefs. For example, two respondents to the survey subsequently contacted the researcher as they felt the wording was swayed too heavily in favour of Christian beliefs. Although they believed in the survival of consciousness after death, they would have preferred concepts were relayed in more general terms, for example, instead of 'heaven', perhaps 'another place or realm of existence'. Given the ADBS showed NDErs were more likely to believe in reincarnation or disembodied spirit, this is a valid concern, and something those interested in death attitudes should bear in mind. Religious bias in scales designed to capture afterlife beliefs has also been noted by others (e.g., Burris & Bailey, 2009). As Western society is becoming increasingly multicultural and more secularised (Houtman & Aupers, 2007), future revisions of the DAP-R would benefit from more inclusive phraseology to cater for a wider range of post-mortem continuation beliefs.

Similarly, some participants felt the wording of the NDES did not align with their experience. For example, some could not adequately answer the question regarding the experience of light with the options provided. Although many Aotearoa New Zealanders did have an experience of light, they mostly did not perceive it as brilliant nor mystical (options on the NDES). Others claimed to have sensed the presence of unknown entities, however

they were uncertain whether they were deceased or religious spirits. As one participant explained, "It wasn't what I would describe as deceased or religious spirits, *but* a presence... it might have been aliens for all I know!" (NZ2F). In the above example, the participant originally marked 'no' for this question on the NDES. Although interviewees were able to discuss and write their preferred answer, it is not known whether this issue affected survey respondents (who only had a forced choice option). A free-text box would have therefore been useful to include as part of the NDES in the survey. Alternatively, future revisions of the NDES would perhaps benefit from describing features with less of an interpretative framework to cater for potentially different cross-cultural understandings/interpretations of NDE features.

In hindsight, it would have been useful to administer the NDE scale to all survey participants. Several participants who claimed to have had NDEs scored lower than 7 on the NDE Scale and were consequently reassigned to the nonNDE group. Hence, it seems likely some participants who claimed *not* to have had an NDE in their close brush with death would have scored 7 or higher had they been given the NDE Scale, resulting in their reassignment to the NDE group. NDE-like experiences can occur in the absence of a close brush with death, therefore it is plausible the control group might have also included some people who had NDE-like experiences.

This research primarily targeted people whose NDE occurred during a close encounter with death, namely because they are easier to find and recruit. Whether the revised attitudes and beliefs (and attributions for change) identified in the present research also occur amongst NDErs whose experience was triggered by non-life-threatening circumstances (e.g., stress, meditation or depression) cannot be adequately determined. Aftereffects following these two types of NDEs may differ because one occurs *during the context of death*, whereas the other does not. The handful of 'NDE-like' experiencers who took part in this study suggest it may have a similar effect, however more data is required. As very limited research has been conducted amongst these types of NDErs, particularly with respect to aftereffects, this represents an interesting and fruitful area for future exploration.

10.7 Summary and Conclusion

The essential thing to know is that it does have an effect [the NDE] - it's not a choice, you can't sweep it under the carpet. It's beauty, it's mystery becomes part of your life and if you resist it then it hides in the background like a shadow and keeps you slightly separate on many levels. (CA1F)

This study successfully employed a mixed method approach to comprehensively explore beliefs and attitudes to death after an NDE. In keeping with previous research, findings demonstrated NDErs have a more positive orientation towards death than others. From a multidimensional perspective, NDErs had significantly less transpersonal and intrapersonal fear compared to others, but retained an equivalent level of interpersonal fear, meaning the construct 'loss of fear of death' is not wholly accurate.

Although a large body of literature attests to the presence of certain aftereffects following NDEs, scant empirical data has addressed the nature of this relationship. Very little is known about possible causal mechanisms, or how exactly NDEs create these changes. This study therefore contributed in a small way to increased understanding in this area. It established NDEs affected death attitudes in a variety of ways. They dispelled concerns of a painful, traumatic death, instilled belief that life has a purpose, allowed NDErs to relinquish any illusions of control, encouraged individuals to confront the reality of death, and perhaps most significantly, inspired belief that death is not the end.

Data confirmed this change in perspective was primarily connected to the unique subjective experience of the NDE, rather than a corollary of post-traumatic growth (PTG) often initiated after a life-threatening episode. With PTG, the individual is thought to have increased self-awareness of the finiteness and fragility of human existence, which motivates the individual to make the most of life (Hefferon, Grealy & Mutrie, 2009; Seto et al., 2016). Yet, as this study highlighted, rather than increased awareness of life's finitude, most NDErs were significantly more likely to believe in post-mortem continuation, or the belief that life *did not* end with physical death. Hence, while the outcomes of PTG are often comparable to the life changes made by NDErs, the psychological mechanisms behind such growth may differ.

These beliefs affected death attitudes in such a pronounced manner, because they were intrinsically held, idiosyncratic beliefs associated with a high degree of certainty. Because most experiencers were required to redefine their assumptive world to accommodate their NDE, it created deep-rooted change in both cognitive and emotional domains of functioning – a process typically associated with increased death acceptance. Although data suggested the affective and transcendental elements of the experience played a significant role in this process, interviewees often struggled to identify the specific features involved. Qualitative findings suggested the experience of remaining consciously aware during a supposed state of physical death was key, and this was amplified by the strong sense of authenticity connected to the experience. All participants felt their experience was objectively real as it was indistinguishable (or more real) than ordinary everyday awareness - quite different from dreamlike or hallucinatory states. This sense of authenticity meant that, even for atheists, an important element of predictability could be attached to the final, irreversible death event. Participants often claimed that simply knowing what to expect had eased many of their fears about death. Death was no longer a mystery.

These findings have important implications, not just for the field of near-death studies, but also for wider society. Replicating the subjective experience of NDEs in a clinical setting, for example, via hypnosis or through virtual reality, offers a novel approach for understanding, educating and preparing others for the death event. Isolating the specific characteristics involved (transcendental and affective elements) and purposefully inducing them, represents a useful starting point for increasing acceptance of death. As this study demonstrated, the noetic quality of the experience (i.e., its perception as a reliable source of valid, meaningful knowledge) played a vital role, hence direct, sense-based experience of a similar state of consciousness is likely to be the most effective approach.

Death is often viewed as the ultimate meaningless event, causing distress to many people. Yet we may have at our disposal a powerful therapeutic tool, a means of looking at death in a new way. Although Western society primarily acknowledges only one form of conscious awareness (ordinary waking consciousness), the usually untapped ranges of human consciousness can enable positive and lasting change, providing insight into the meaning and purpose of both life and death, or what Paul Tillich (1963) terms, *matters of ultimate concern*. Psychology must explore the human mind in its fullest expression (both

experientially and objectively), not simply restrict itself to mental states more readily accessible. As psychologist and philosopher William James recognised over 100 years ago "...our present consciousness is only one out of many worlds of consciousness that exist, and those other worlds must contain experiences which have a meaning for our life also" (quoted in Miovic, 2004, p.107).

Forming some conception of life after death, no matter what form it takes, appears crucial for understanding and accepting our own mortality. As this study demonstrated, belief in a transcendental reality was central to the positive changes made. In an increasingly secular society, experiences such as NDEs, can offer renewed hope of life and death continuity and the prospect of a meaningful existence beyond our physical demise, a concept that is neither theoretically nor scientifically implausible. Grosso (2001) calls for a 21st century *ars moriendi*, or an art of dying. He states "In time, a new consensus on the afterlife might conceivably emerge and change our whole feeling about death. From a practical point of view, is that not what counts?" (p.12).

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Appendix A: Advertisements

1. Short version (paid advertising: e.g., Newspapers, Google Adwords, Facebook advertising)

Have you been clinically dead or come close to death? Take part in a survey http://tuq.in/nde.

2. Longer version (e.g., Facebook)

Have you, or someone you know, had a Near Death Experience?
For my PhD thesis I am researching Near Death Experiences (NDEs) and corresponding attitudes toward death. If you have come close to death, temporarily died or felt your life was seriously threatened I would be most grateful if you could complete my online survey and help further knowledge in this fascinating area. Please share!
https://qasiasingleuser.asia.qualtrics.com/SE/…

If you haven't had a close brush with death you can still do the survey. You might find out something interesting about your attitude to death.

Appendix B: Information sheet preceding survey

MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGA TANGATA

Near-Death Experiences (NDEs) and Attitudes to Death

INFORMATION SHEET

Who is doing this research?
My name is Nicole Lindsay and I am a PhD student with the School of Psychology at Massey University, New Zealand. My supervisor is Dr Natasha Tassell-Matamua, a lecturer with the School of Psychology. I am particularly interested in altered states of consciousness and the impact of these experiences on psychological wellbeing, and the relevance of NDEs for consciousness research in general. Natasha has been intrigued by NDEs for many years and was co-principal investigator of the first large-scale study of NDEs in New Zealand and has published in the area of NDEs.

What is this research about?
I am interested in exploring NDEs and corresponding attitudes toward death. NDEs are an unusual and frequently profound conscious episode experienced upon dying or death. These experiences have been reported throughout history and tend to take on a common form. They have been reported in most cultures around the world, and some studies suggest about 15-25% of people have experienced them. Research has shown that NDEs have an impact on the survivor's attitudes toward death, however we do not know exactly why or how this happens. This study hopes to increase understanding in this area.

Who can take part in this research?
If you are over the age of 21 years and have had an experience where you were dead, dying or close to death then I would like to invite you to take part in this research. You may or may not have a conscious memory of this episode. AN NDE is defined as an experience where you felt as though something unusual yet significant happened to you during this time, such as: leaving your physical body; seeing an unusual light or seeing deceased relatives. I am very interested in having you participate in our research if you have had such an experience. I also welcome participation from you if you have had a close brush with death but do not recall any unusual memories from this time. If you have not had a close brush with death then your participation in this research is also valuable in terms of measuring death attitudes amongst the general population.

What will I be asked to do?
You will be asked to fill out a questionnaire relating to your experience, and your attitudes toward death in general which should take about 15-20 minutes. You will require access to an internet connection to complete the questionnaire. If you would prefer to complete a paper copy of the questionnaire, please contact me or Natasha, and we will arrange to have one posted to you.

What are my rights as a participant?
If you decide to take part in the questionnaire you can choose to skip or not respond to any of the questions asked, ask any questions about the study, and withdraw from the study at any time. We promise to store any information we obtain from you in a secure and confidential fashion, and only use it for the purposes of this research. We understand that talking about your NDE is important, so want to assure you we will take every precaution to ensure your information and identity remains private. As a significant event in your life, we understand that recollection of your NDE may raise certain emotions. If at any time you feel participation in this study raises any concerns for you that you would like to discuss further, you can contact Nicole or Natasha who will be able to provide you with assistance.

What do I do now?
If you feel you would like to participate in this research, please click on the ">> Next" button below and proceed to the online survey.

If you have any further queries or would like to know a little bit more about the study before you participate, please contact Nicole or Natasha:

Contact information

Please feel free to contact the researcher and/or supervisor if you have any questions about the project.

Researcher	Supervisor
Nicole Lindsay School of Psychology Massey University Private Bag 11 222 Palmerston North New Zealand [redacted] Email:nicole.lindsay.2@uni.massey.ac.nz	Dr Natasha Tassell-Matamua School of Psychology Massey University Palmerston North New Zealand +64 6 3569-099 ext 85080 N.A.Tassell-Matamua@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 14/42.
If you have any concerns about the conduct of the research, please contact Prof John O'Neill, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 81090, email humanethicsouthb@massey.ac.nz.

Appendix C: Near Death Experiences and Attitudes to Death Questionnaire

Instructions

Thank you for participating in this study. This questionnaire consists of a series of questions about Near Death Experiences and attitudes to death.

The questionnaire should only require 15-20 minutes of your time.

Your data will be held in a secure file at Massey University for five years, after which it will be destroyed.

Please complete all the sections below if possible. You have the right to not answer any particular question.

Many thanks for your assistance with this survey.

Demographics

What is your current age*? (in years)* _____

If you have had a close encounter with death, what age were you at the time it occurred?

(in years) _____

What is your gender? _____

Religious belief: _____

Religious belief after experience (if applicable): _____

Which ethnic group do you belong to? _____

What is your highest level of education? _____

What is your marital status? _____

Number of Children: _____

Section 1

1. I have had a close encounter with death; for example, a life-threatening illness, accident or injury in which I was pronounced clinically dead, was expected to die, or felt I was very likely to die.

No (proceed to section 3)
Yes, briefly describe

_____

2. My close encounter with death happened as a result of an:

Illness
Injury (accident, suicide attempt, etc.)
Other (please describe)

_____

During my close encounter with death, I had an unusual and/or significant psychological experience.

Yes (proceed to section 2)
No (proceed to section 3)

Section 2

Looking back at your close encounter with death, please answer the following questions based on what you remember during your experience.

1. Did time seem to speed up or slow down?

□ No
□ Time seemed to go faster or slower than usual
□ Everything seemed to be happening at once; or time stopped or lost all meaning

2. Were your thoughts speeded up?

□ No
□ Faster than usual
□ Incredibly fast

3. Did scenes from your past come back to you?

□ No
□ I remembered many past events

□ My past flashed before me, out of my control

4. Did you suddenly seem to understand everything?

□ No
□ Everything about myself or others
□ Everything about the universe

5. Did you have a feeling of peace or pleasantness?

□ No
□ Relief or calmness
□ Incredible peace or pleasantness

6. Did you have a feeling of joy?

□ No
□ Happiness
□ Incredible joy

7. Did you feel a sense of harmony or unity with the universe?

□ No
□ I felt no longer in conflict with nature
□ I felt united or one with the world

8. Did you see, or feel surrounded by, a brilliant light?

□ No
□ An unusually bright light
□ A light clearly of mystical or other-worldly origin

9. Were your senses more vivid than usual?

□ No
□ More vivid than usual
□ Incredibly more vivid

10. Did you seem to be aware of things going on elsewhere, as if by ESP?

□ No
□ Yes, but the facts have not been checked out
□ Yes, and the facts have been checked out

11. Did scenes from the future come to you?

□ No
□ Scenes from my personal future

 Scenes from the world's future

12. Did you feel separated from your body?

 No
 I lost awareness of my body
 I clearly left my body and existed outside it

13. Did you seem to enter some other, unearthly world?

 No
 Some unfamiliar and strange place
 A clearly mystical or unearthly realm

14. Did you seem to encounter a mystical being or presence, or hear an unidentifiable voice?

 No
 I heard a voice I could not identify
 I encountered a definite being, or a voice clearly of mystical or unearthly origin

15. Did you see deceased or religious spirits?

 No
 I sensed their presence
 I actually saw them

16. Did you come to a border or point of no return?

 No
 I came to a definite conscious decision to return to life
 I came to a barrier that I was not permitted to cross; or was sent back against my will

Section 3

Please rate the degree to which you agree with the following statements. Circle the appropriate number corresponding with the item.

When I die, I believe that…

Statement	Strongly Disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
My physical body will be resurrected (raised from the dead) at some point in the future.	1	2	3	4	5	6	7
I will no longer exist, period.	1	2	3	4	5	6	7
Only my physical body dies: My spirit will live on in a recognisable form.	1	2	3	4	5	6	7
At some point, I will live again, but as a different person who will have little or no memory of this life.	1	2	3	4	5	6	7
My physical body will eventually be fully restored and perfected, and I will live in it again.	1	2	3	4	5	6	7
What is "me" will cease to exist, yet "I" will live on as part of a larger whole.	1	2	3	4	5	6	7
My personality, consciousness—all that I am—will cease to exist.	1	2	3	4	5	6	7
The real "me," that now inhabits my physical body and defines my personality, will continue to exist without the body.	1	2	3	4	5	6	7
I will, at some point, return to the physical world to be born as a different person.	1	2	3	4	5	6	7

My physical body will someday be raised up, and I will live in it again—fully alive, fully "me," not a "zombie."	1	2	3	4	5	6	7
My identity will die along with my body, but my consciousness will continue to exist.	1	2	3	4	5	6	7
I will "exist" only in the memories of those who survive me.	1	2	3	4	5	6	7
My soul—the spiritual essence that makes me a unique individual—will live on forever.	1	2	3	4	5	6	7
I will eventually take on a new physical form as another person (or possibly as another living thing).	1	2	3	4	5	6	7
There will be no more "me," in the limited sense—only pure, eternal Consciousness.	1	2	3	4	5	6	7
My soul and my physical body will be reunited at some point in the future.	1	2	3	4	5	6	7
Very simply, that will be the end of my existence.	1	2	3	4	5	6	7
I will continue to exist as a living person with a spiritual "body," not a physical body.	1	2	3	4	5	6	7
"I" or "me" as a separate person will no longer exist, because I will be reunited with the One, the All.	1	2	3	4	5	6	7
My soul will eventually be "recycled" – that is, reincarnated in a different physical body.	1	2	3	4	5	6	7

Section 4

Please rate the degree to which you agree with the following statements. Circle the appropriate number corresponding with the item.

Statement	Strongly Disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
Death is no doubt a grim experience.	1	2	3	4	5	6	7
The prospect of my own death arouses anxiety in me.	1	2	3	4	5	6	7
I avoid death thoughts at all costs.	1	2	3	4	5	6	7
I believe I will be in heaven after I die	1	2	3	4	5	6	7
Death will bring an end to all my troubles	1	2	3	4	5	6	7
Death should be viewed as a natural, undeniable, and unavoidable event.	1	2	3	4	5	6	7
Death should be viewed as a natural, undeniable, and unavoidable event.	1	2	3	4	5	6	7
I am disturbed by the finality of death	1	2	3	4	5	6	7
Death is an entrance to a place of ultimate satisfaction.	1	2	3	4	5	6	7
Death provides an escape from this terrible world.	1	2	3	4	5	6	7
Whenever the thought of death enters my mind, I try to push it away.	1	2	3	4	5	6	7
Death is deliverance from pain and suffering.	1	2	3	4	5	6	7

I always try not to think about death.	1	2	3	4	5	6	7
I believe that heaven will be a much better place than this world.	1	2	3	4	5	6	7
Death is a natural aspect of life.	1	2	3	4	5	6	7
Death is a union with God and eternal bliss.	1	2	3	4	5	6	7
Death brings a promise of a new and glorious life.	1	2	3	4	5	6	7
I would neither fear death nor welcome it.	1	2	3	4	5	6	7
I have an intense fear of death.	1	2	3	4	5	6	7
I avoid thinking about death altogether.	1	2	3	4	5	6	7
The fact that death will mean the end of everything as I know it frightens me.	1	2	3	4	5	6	7
I look forward to a reunion with my loved ones after I die.	1	2	3	4	5	6	7
I view death as a relief from earthly suffering.	1	2	3	4	5	6	7
Death is simply a part of the process of life.	1	2	3	4	5	6	7
I see death as a passage to an eternal and blessed place.	1	2	3	4	5	6	7
I try to have nothing to do with the subject of death.	1	2	3	4	5	6	7
Death offers a wonderful release of the soul.	1	2	3	4	5	6	7
One thing that gives me comfort in facing death is my belief in the afterlife.	1	2	3	4	5	6	7
I see death as a relief from the burden of this life.	1	2	3	4	5	6	7

Death is neither good nor bad.	1	2	3	4	5	6	7
I look forward to life after death.	1	2	3	4	5	6	7
The uncertainty of not knowing what happens after death worries me.	1	2	3	4	5	6	7

Section 5

Please rate the degree to which you agree with the following statements. Circle the appropriate number corresponding with the item.

The thought of my own death disturbs me because it means…

	Strongly Disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
The end of my creative activities.	1	2	3	4	5	6	7
The end of all my plans and activities.	1	2	3	4	5	6	7
The end of being “a person”.	1	2	3	4	5	6	7
The end of my ability to think.	1	2	3	4	5	6	7
My life will not have been lived to its fullest.	1	2	3	4	5	6	7
Being cut off from life itself.	1	2	3	4	5	6	7
Missing out on what the future will bring.	1	2	3	4	5	6	7
Not being able to accomplish all of my life goals.	1	2	3	4	5	6	7
My loss of connections with loved ones.	1	2	3	4	5	6	7

The loss of life's pleasures.	1	2	3	4	5	6	7
My absence may not be noticed or felt.	1	2	3	4	5	6	7
Things will keep on happening without me.	1	2	3	4	5	6	7
I will be forgotten.	1	2	3	4	5	6	7
My loss will not hurt people close to me.	1	2	3	4	5	6	7
I will no longer be "in the world".	1	2	3	4	5	6	7
Life will go on without me.	1	2	3	4	5	6	7
I will eventually be no longer recognizable as a person.	1	2	3	4	5	6	7
My body will lose its form.	1	2	3	4	5	6	7
People close to me will still need me.	1	2	3	4	5	6	7
People close to me may not get over their grief.	1	2	3	4	5	6	7
Sadness among my relatives and friends.	1	2	3	4	5	6	7
I will be unable to comfort or provide for people close to me.	1	2	3	4	5	6	7
Uncertainty regarding what to expect at that point.	1	2	3	4	5	6	7
Uncertainty regarding whether my existence will continue.	1	2	3	4	5	6	7
What? I don't know—it's a complete mystery.	1	2	3	4	5	6	7
What happens then cannot be known now.	1	2	3	4	5	6	7
The decay of my body.	1	2	3	4	5	6	7
The loss of my sense of self.	1	2	3	4	5	6	7

The beginning of “everlasting sleep”.	1	2	3	4	5	6	7
The destruction of my personality	1	2	3	4	5	6	7
The end of my creative activities.	1	2	3	4	5	6	7
The end of all my plans and activities.	1	2	3	4	5	6	7

Appendix D: Interview information sheet

Near-Death Experiences (NDEs) and death attitudes

INFORMATION SHEET

Who is doing this research?
My name is Nicole Lindsay and I am a PhD student with the School of Psychology at Massey University, New Zealand. My supervisor is Dr Natasha Tassell-Matamua, a lecturer with the School of Psychology. I am particularly interested in altered states of consciousness and the impact of these experiences on psychological wellbeing, and the relevance of NDEs for consciousness research in general. Natasha has been intrigued by NDEs for many years and was co-principal investigator of the first large-scale study of NDEs in New Zealand and has published in the area of NDEs.

What is this research about?
I am interested in exploring NDEs and corresponding attitudes toward death. NDEs are an unusual and frequently profound conscious episode experienced upon dying or death. These experiences have been reported throughout history and tend to take on a common form. They have been reported in most cultures around the world, and some studies suggest about 15-25% of people have experienced them. Research has shown that NDEs have an impact on the survivor's attitudes toward death, however we do not know exactly why or how this happens. This study hopes to increase understanding in this area.

Who can take part in this research?
If you are over the age of 21 years and have had an experience where you were dead, dying or close to death then I would like to invite you to take part in this research. AN NDE is defined as an experience where you felt as though something unusual yet significant happened to you during this time, such as: leaving your physical body, seeing a bright light or seeing deceased relatives. I am very interested in having you participate in our research if you have had such an experience.

What will I be asked to do?
You will asked to participate in an interview discussing your experience and your attitude toward death, which should take a maximum of 2 hours. An audio recording of your interview will be made, and later transcribed to written form. No personally identifying information will be attached to the transcript. You will be invited to review this information and asked to sign an authority for release of transcript form, in order to verify that you are happy for this information to be used in the study, and in any publications that may arise as a result.

As a recognition of the time you have given to tell me about your NDE, you will be offered a $20 petrol voucher (or grocery voucher if you prefer) at the conclusion of the interview.

What are my rights as a participant?
If you decide to take part you have a right to answer as little or as many questions as you choose; you may ask any questions about the study, or withdraw from the study at any time. We promise to store any information we obtain from you in a secure and confidential

fashion, and only use it for the purposes of this research. We understand that talking about your NDE is important, so want to assure you we will take every precaution to ensure your information and identity remains private. As a significant event in your life, we understand that recollection of your NDE may raise certain emotions. If at any time you feel participation in this study raises any concerns for you that you would like to discuss further, you can contact Nicole or Natasha who will be able to provide you with assistance.

Contact details

If you have any further queries or would like to know a little bit more about the study before you participate, please contact Nicole or Natasha:

Nicole Lindsay
School of Psychology
Private Bag 11 222
Massey University
Palmerston North 4442

[redacted]
nicole.lindsay.2@uni.massey.ac.nz

Natasha Tassell-Matamua, PhD
School of Psychology
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06 3569099 extn 85080
N.A.Tassell-Matamua@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 15/34. If you have any concerns about the conduct of this research, please contact Prof Julie Boddy, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 86055, email humanethicsouthb@massey.ac.nz

Appendix E: Consent form

Near-Death Experience (NDEs) and death attitudes

PARTICIPANT CONSENT FORM

I have read the information sheet and have had details of the study explained to me. I understand that I am under no obligation to answer any question and that I may withdraw from the study at any time. My questions have been answered to my satisfaction and I understand that I may ask further questions at any time.

I agree / do not agree to an audio recording of my interview.

I wish/ do not wish to have my transcript returned to me as a word document.

I agree to participate in this study under the conditions set out in the information sheet.

Full name – printed:

……

Signature:

……..

Date:

……..

Appendix F: Release of transcript form

Near-Death Experience (NDEs) and death attitudes

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I confirm that I have had the opportunity to read and amend the transcript of the interview conducted with me regarding my near death experience.

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the transcript.

Full name – printed:

……

Signature:

……..

Date:

……..

Appendix G: Interview schedule

Interview Schedule

Please describe in as much detail as you can, your close brush with death – the circumstances preceding it, and the nature of your psychological experience during this episode.

How did you feel about your experience afterwards?

Do you feel the experience affected your life in any way?

Has the experience impacted your attitude to death? In what way?

How did you feel about death before your NDE?

(if changes took place) When did you notice the shift? i.e., did it happen immediately or over time?

Was there a particular element or aspect of the NDE that prompted this shift?

What do you think happens when you die (in terms of the self)?

Is this different from your beliefs before your NDE?

Do these beliefs have an impact on how you feel about death? About life?

Appendix H: Two NZ case study examples from this research

Interview transcripts (edited)

Case study 1:

NZ6M (pseudonym, Mike)
NDE Score: 16

NL: Can you start by describing in as much detail as you can, what happened to you?

Mike: My first of two near-death experiences occurred when I was about 10. I was pretty crook at the time. I remember heading to the toilet and no sooner had I got into the toilet then just everything changed for me. One minute I was standing, the next minute it was pitch-black. My next realisation was "hang on a minute, I'm not breathing", and the next realisation was "I'm suspended, I'm like surrounded, in this darkness" and all the time my conscious self was just still ticking over, still ticking over, still thinking things through, taking it in.

Then there was a bright light that… it was a light that I've never seen, experienced before, it was a light that was as bright as the sun, but it was clear and it didn't hurt to look into, and either I was moving towards it, or it was actually slowly coming towards me and enveloping me. One or the other, I'm not too sure. It was at that point that I found myself in a space, an area... of light, and I was surrounded by 4 or 5 beings, people, and facial features...recognisable. Body wise though they were cloaked in light, like light. Just like cloaked. Conversation ensued. I either felt or saw the presence of the others around, but there was one particular individual that ran my...I guess…my life, as it was, actually ran it past me. I partook in the viewing of all my life's events and... they did that, in a matter of just seconds, a glimpse, that's all it took to review absolutely everything that had taken place. That in itself gave me a sense of timelessness. In comparison, the lifetime I'd spent was just a blip. Conversation then erupted as to well, you know, this is where you've been, this is what you've done and um, well... "you really can't stay here, you really need to go back, there's much more that you still need to do, there's still so much more you *can* do. Well, I mean 'hey', I was gonna argue it through and through and I was. I was arguing it quite fervently. I was just like "no friggin way, I'm staying here, I'm not going back". I mean it was absolutely sensational, the sense of being free of your body. All this experience was spontaneously just developing and the conversations were quite intense, and in the end…I got the push back.

I felt myself being forced back to my body and may I say that was the most uncomfortable experience I ever had and I wouldn't want to repeat it. It was like I was 10 times larger than my body. My being was being crushed back in, to fit. It was almost like the opposite of the wonderful freeing it was to be out of my body. And so, [laughing] arguing all the way, I wasn't

coming back, I was still going for it! Unbeknown to me, my mum, who was in a wheelchair on the other side of the house, had come back up to the other end and happened upon me. Apparently when she did find me I was cold, I was blue. God knows how long I had been under cardiac arrest, but it was sufficient enough that my whole entire body colour was grey, it was blue, from what she told me later. And so, apparently she had come into the toilet, tried to pick me up under my shoulders and was in the process of dragging me out in the lounge, into the hallway, and she dropped me, my shoulders from about waist height. I apparently had gone crashing back to the floor. And it was about then that she must have actually restarted my heart and of course when I came too, took my first breath, I was still in mid argument. I pretty much at the top of my voice yelled out, "I don't want to be here"! Well, of course that absolutely put the shits up my mum. She never spoke of that again with me. But there I was still in mid conversation with those in spirit.

NL: Do you remember having any thoughts about your family during that time?

Mike: Heck no! I was just wiped out with what the hell is going on. No, I was looking around me going "woah, check this out, how did this all happen"? (laughs). The world before was forgotten until it was decided that I was just gonna be chucked back.

So yeah, it was quite an experience. It kind of answered many questions. It was an experience that gave me knowledge that I never had before.

NL: What kind of knowledge was that?

Mike: Well, you don't die. You might leave your physical body, but your consciousness, your being still continues, still continues on. Within that experience, even though we might think that we are in control of how our lives play out and all the rest of it, when it really did come down to it...there was a determination of something outside of me saying "hey, you're doing this life for a particular reason or a purpose.

I'm not religious, never been religious. I studied religion and spirituality trying to make sense of what that experience was. Theology and Eastern and Western religions and so forth. I have certainly have gone there and researched and seen whether any of that actually aligned with my experience and I've got to say that my view after looking at it for so long, that religion is a manmade construct that attempts to try and make sense of it, but very crudely does because there's always a fear base or some agenda or some historical context which manipulates or changes how they go about it. So yeah, it certainly pushed me to find out more, to try and find out more.

NL: Well that's really interesting and I want to talk a little bit more about that soon, but just going back to your experience, how old were you did you say?

Mike: I was 10, just over 10.

NL: So I'm assuming at 10, you know, you haven't had a huge life, do you remember what kind of things you were shown during your life review?

Mike: Every event.

NL: Every event?

Mike: It was like a playback. And you know how upon reflection or a memory, in your mind's eye you can pretty much visualise or see in your mind's eye how a particular thing was, that was pretty much it. Except as I was viewing this, so they were, and as a matter of fact the conversation or the speaking (pause)...it was happening so fluidly it was like we weren't actually speaking, we were actually in each other's minds, we were just free thinking. It was just like "boom, boom, boom, boom". The review was thorough, and it was just like a complete playback.

NL: Of everything.

Mike: Yeah. At lightning speed.

NL: And how did you feel about that when you were viewing everything? How were you feeling?

Mike: Well it's an interesting thing because feelings, they are kinda like....again, that was a different sensation because the feelings experienced in that spirit state were different than say feeling emotion in the human state, because you didn't have the heart that was pumping if you were getting nervous. There was no fear in that environment. There was no shame or ego or any of that so... the overall sense throughout the review was one of peace. There were no judgements being made, it was simply just... a lookback, a review. That's all it was. It was ok. It was just happening, it just went. It just occurred.

NL: Ok, so can you just tell me a little bit more about the people. As much as you can remember.

Mike: The ones around me were related. They were known to me, they were connected and certainly I felt they were there in support of me. Of course, from a 10 year old's perspective I didn't have a great knowledge of all of those people, but I just knew they were there for me. I guess at that stage I had lost quite a few family members, extended family. There was one I turned around and tweaked and I went "Oh I know you…uncle", but the others, nope.

The guy or the spirit that was in charge manifested as male. The guy just had a presence of "hey, this is my party you know. I'm in charge here" (laughs). "You are here at my request, you're in my presence". And that's the way it was. No arguments there. I wasn't looking at the spirit like going "Oh, you know, you're God, or Jesus or this or that". No, it was just... face value. That's who he was, the person in spirit in charge.

NL: And do you recall any of the conversation, that you had with him?

Mike: From the conversation I felt that there was much more that I had to do. There was (pause)... there was more conversation...but I don't think I was really allowed to actually remember a great deal more than that. There was a sense that I was shown what some of that more there was to do. But again, looking back on that now, it's actually a relief that I wasn't. The near-death experience in itself was both enlightening and life-changing, but at the same time it was also a curse.

NL: How was it a curse?

Mike: Well, within my living memory at this moment, I'm also aware of a place that is absolutely beyond imagination, beautiful, amazing, heavenly, if you were to give it a word. To have that knowledge while going through what...I mean this life, in this body, this physical world in comparison, this is hell. Even the sheer effort of breathing in and out is difficult compared with being out of your body. You know, there is no sensation of pain, there is no sensation of physicalness, physical sensation of comfort or discomfort or anything like that. You are free of it. Having that knowledge while coming back to this life is both a blessing and a curse.

NL: How have you managed to reconcile that over the years?

Mike: Well it's kinda difficult because I had a second near death experience and I was in hospital. I was about 12, going on 13. I had a pre-op med - phenigan, and it stopped my breathing and there was another collapse and apparently it stopped my heart because they had me on a heart monitor for like 24 hours after that episode. The moment I was there, *the moment* I had the sensation "oh, this is happening again, I'm here again", pow! I was after that light. I didn't wait for anything to happen to me, I was after it. I was off. I knew where I was heading.

It was like a well-travelled pathway because it was so well remembered. But I was stopped. It was like physical. It was like grab, wrap you round, go back, gone. There was no conversation. It was like being wrapped up and pushed back. That left me in no doubt (laughs). Not ready yet. So yeah, trying to live with that knowledge…I guess during the tough times growing up it was difficult because it was just like "for god's sake, strike me down, take me". The thing was if suicide was an issue, it wasn't, because very clearly do I understand, and have understood, that you don't make that call yourself. It's not for you to make the call, I wouldn't want to be the soul in that review. Even if it was attempted I'm sure the call is still made whether it's a survivable act or not. In that respect, even in the difficult times you think "oh my god, you know please, *really*? (laughs). You know, it's like "enough'! At the same time, hey I'm at the bidding of a power that's much, much more powerful, more in control, than me.

NL: So how did your family react? You mentioned earlier that your mum never spoke of it again. But did you talk to them of your near-death experiences?

Mike: Well my dad was old school. My dad passed away last month, just a month ago. But my dad at the time, old school, tradesman. Didn't talk about it. My mum, she confided, quizzed, like a curiosity but then didn't want to talk about it, because I gave her a hell of a fright. My brother well, he was just off limits, he was just another kid, you know. There was actually no interest in it at all. So that was actually something I held within me.

It made for very interesting teenage years as far as risk taking went. When I was 18, I ran off to skydiving school. As you do! (laughs). Took up skydiving. Because there was the fun, there was the thrill, but it really didn't matter if I went splat or not. It was fun, it was exciting. The adrenaline rush. Seeking something that gave you the sense you're really alive. You know, making the most of the opportunity. Making the most of life was something that I grew into as I

forgot the sensation of being in spirit. That forgetting actually helped me move forward and find the joy of life, in this physical now.

NL: How long did that take, do you think, roughly?

Mike: Years. Years. Five years, six years. You know, I went on and I got into fast motorbikes. Again, seeking the thrill. Nothing more, nothing less. It was just chasing that. Chasing the thrill. Feeling alive, making the most of being alive and not fearing whether I went splat, whether I left my body or not again.

NL: So that didn't occur to you or worry you at all…?

Mike: Nup.

NL: …the thought of dying?

Mike: Well, it's not dying. That's my knowledge, my experiential knowledge. It's not dying. It's a transition that happens as easily and as simply as breathing in or out. Close your eyes, lights on, lights out. Effortless. Natural. I suppose the concern I have in my later years is that I wouldn't want to leave this world again in a long, strung out, suffering painful experience, you know? I mean, I truly now understand that is something you want to avoid. But at the time in my youth, yeah, transition from one world to another, not a problem. It was not a concern, not a fear. Not a worry.

NL: How did you actually feel about your experience afterwards? You said that your mother was traumatised and didn't want to speak of it again, but how did you feel about it?

Mike: (voice raised) Angry!

NL: Angry?

Mike: Yeah, yeah. I was angry. It was like, "damn I've been cheated". (laughs). It was like you know, I just lost out on something great here. Um, so I think like all things, those emotions in time they ease, they settle. You become distracted into other, into the rest of life in general. There's other things, you just move forward. So the anger, the angst, the sense of being cheated, left. And knowing that I'll be back there again.

Later on when my mum died, there were a lot of upset people around me. I could see that, I could feel that. I could comfort them, but I wasn't upset myself. As of course as in the passing of dad last month. I wish I could have told him. I wish I could have shown him. I could have almost grabbed him by the hand in spirit and walked with him and said "this way mate", you know? The transition between this space and that space, it's almost dimensional. It's like....this space that we are sitting in now. Close your eyes, you're there. It occupies the same space, but it's different. I wish I could have told dad that. That was kind of sad. And he was fearful, he was fearful of dying. You know, he was really afraid. but I now know, "hey, lucky bugger!" (laughs). I know where you are, and yes, I will be with you, alongside you, once I've finished doing what I have to do here.

My loved ones, my wife, my children, my grandchildren, they're obviously here in this world and I just adore them. I love the time spent, it's just like quality time, you know, magnified. But I also know that if they were to pass over that they're not lost to me. And if I were to pass over, I'm not lost to them. We will reconnect again. So yeah...again I suppose it's just a consequence of my experience.

NL: So, did the experience impact your attitude to death?

Mike: Yeah. Yeah. Because death is not death. Some of the myths, rumours, fears that there is a heaven and a hell and there is a this or a that. There was none of that, and that I figured that out pretty quickly. Where you're heading is not a place to be feared. If anything, the life experience we are having is the temporary trip. If you wanna know whether this is something we continually return back to? I dunno. I haven't figured that one out. Is it something that we chose to do? Maybe we do, but I'd say if we do, if we did chose to return to this voluntarily, for whatever purpose or reason, I tell you now we would forget in that decision making as to exactly how this feels (pause). I swear there wouldn't be many people wanting to come back from the spirit world, you know there must be a sense like I learnt to forget what that was like in sensation too. I'm sure on the other side we actually forget what it's like to actually come back to this very temporary world.

NL: Is there any particular aspect of the experience that you would attribute the changes to? The change in your attitude to death? Can you pinpoint what that was?

Mike: I remember doing a philosophy paper once and I had a lecturer, tutor, that was actually a forensic psychologist and he challenged me, you know, challenged me about "well, how can you tell it was real? How do you know what was happening wasn't just in your imagination? Maybe it was the final blips of neural pathways switching off as you were coming to the end of existence, and all that. And I think an existentialist point of view would say," Well, I was doing it, therefore I am". My experience was sufficient enough to say "ok, yep, this is what it is" and I guess I hear that other people have experienced similar things, they've had similar experiences, therefore again, their experiences combined with my knowledge of my experience, hey yeah, it's real.

NL: So are you are saying that because your experience was very real to you, that's what prompted the change in your attitude to death?

Mike: Yep. Yep. It's as real as sitting with you now. And I didn't engage in, with any of those events. It wasn't me chasing after it. As a child, I didn't have any knowledge of those places, or how people in spirit would be. It didn't marry up with anything my parents had shown me as they dragged me along to Sunday school, or anything like that, it was all spontaneous, it occurred outside of me. So yeah, it's as real as you can get.

NL: Do you recall how you felt about death before your NDE?

Mike: I never thought about it. I'd seen some relatives die. Gone to their funerals, seen them off. Buried. I think that that was probably age stuff. Concrete operational. It's there, it is what it

is. There really wasn't a lot of abstract thinking there at all. I hadn't given death a great amount of interest or thought (chuckles). No, just being a kid.

NL: So when you did have your experiences, did you notice a change in your attitude to death afterwards?

Mike: Yeah. Yeah. Yeah. There was a wee preoccupation there, probably thinking about it a bit more. Yeah it was like “oh well there’s nothing to worry about, other than (voice animated) when am I going to get back there again"! (laughs).

NL: Would you say that was immediate, or did you formulate that over time?

Mike: It was immediate. It was immediate. And that continued for some time until more of life’s distractions, getting back to school, and all the rest of it, all those other things took over.

NL: What do you think happens when you die, in terms of the self?

Mike: You continue. It’s…just…seamless. Your consciousness, you continue. I remember there was someone that once said ‘energy can't be destroyed’. That is possibly the closest example of what I mean about that. That... whatever that energy is that creates your soul, your spirit, it just moves. From one environment to another environment. Or we should say from one dimension to another dimension. I can't exactly give you a proper name for it, but you just continue on. There is no death.

NL: How did you arrive at that belief?

Mike: By being there, by doing it (laughs). There’s no better way to figure it out really.

NL: Again, this might be a little difficult because of your age at the time, but is this belief different from what you would have thought before your NDE?

Mike: Well, I probably would have thought it would be like the Bible, Sunday school Bible teaching. Angels with wings, you know and up on clouds and there'd be big gates that you'd go through, you know, the pearly gates, that sought of imagery. Didn't see any of that.

It was like opening up a whole new worldview. It’s a paradigm shift. It’s like one of those eureka moments. It’s like one day someone telling you "no, the world isn't flat, it’s round". Once that’s revealed and opened up to you, wow, yeah, everything then changes. Your whole view changes.

NL: Did that new view change your life, or not?

Mike: Well, I believe it enhanced it. I've got way more out of it than maybe I would have otherwise done. I've taken on just about every activity, every experience that I possibly could. Those near-death experiences in themselves also lead me to retrain as a counsellor about 22, 23 years ago. And in working with people who are grieving, it’s helpful. Professionally and ethically I don't disclose my experiences, but sitting with them, I suppose the degree of transference, or countertransference, that degree of getting lost in that grief doesn't occur. I suppose I'm more, I'm the rock as they share, as they're working through what’s happening for them. It doesn't

rattle me. I can be with them, but not get lost in it with them. Beyond that I spent over 10 years doing homicide victims counselling, walking with families who've lost a family member through homicide and going through the coroners, court processes, walking alongside them through media barrages, a whole host of stuff and working with them through their grieving.

NL: That sounds like a pretty intense job

Mike: It was intense, but it was hugely rewarding. Again, I just knew your loved one is in spirit right there. They're right there. You could reach out and just about touch them, they're there, its ok.

NL: So how would you describe your religious beliefs now?

Mike: I am spiritual. Not religious. I don't buy into any of those traditional, ceremonial sort of rituals of religion. The Bible, I believe it might have been spiritually inspired but is certainly politically and historically changed over time. It is a spiritual document, but I don't think it's accurate. I think it has been interfered with in many ways over time. Other religions, reincarnation, might be right, but I'm telling you now the turn-around wouldn't be quick. If we were to come back in spirit again, it would be a considered decision and choice. There would be some choice in it, but hey, again my experiences told me there is also a purpose in us being here. Very much so.

NL: Has there been any system of belief, and it doesn't have to be religious, it could be any system, that you have identified with the most?

Mike: (pause). There is, well I suppose you call it spiritualism today, people believe in spirit guides, guardians. There are many aspects of that which ring true but I think there's been some muddying of the waters there too. Maybe some overactive imaginations to try and dramatise or embellish in order to make it more appealing. Again, what happened to me was natural, spontaneous and not of my making, so I reflect on that and think right, well, spiritualism? Close. Close.

There's an innate knowledge. There's an innate knowing. You learn that if you throw a ball up, you don't need to look up to know it will come down again. It's that kind of knowing…that when you die, when you leave the physical, it's not an ending.

NL: Could anyone ever convince you otherwise?

Mike: Yeahhhh, well, a) it's not gonna happen and, b) I have had a forensic psychologist try and do that. Talk me out of it through a philosophical debate. I think that would almost be like someone turning around and saying "excuse me, but the world is actually flat, you've been wrong all along". You have so much evidence, so much knowledge to the contrary that the world is actually round, that there would be a MASSIVE shift to suddenly convince someone that the world is not flat. That's how I sit with near-death experience.

-end-

Case study 2

NZ10F (pseudonym, Ngaire)

NDE Score: 20

I had a whole lifetime of drug abuse, drug addiction with minimal breaks in between. I started using drugs at 9 years old, being born into a family of drug addicts. Mum and dad were drug dealers. I come from a family of 9, and we all have some form of drug addiction. So anyway, that's kinda how the drug use started for me and that's always been a part of my life. *That* day though I had used in the morning and it was not a lot. I was in a process of not using a lot of drugs. I was wanting to make some changes in my life. I'd only been out of jail for a short time and I kinda didn't know how to make change so had been dabbling a little bit. I'd had probably 30 mgs of morphine intravenously in the morning and then I was on my way to [rehabilitation centre] because I was in a process of being assessed to get some help and um, I stopped at my brothers which I wasn't planning on doing, but thank god I stopped there. So I stopped there and we'd walked from the driveway out into the backyard where he had a little patio kinda thingy. And um, I remember standing there laughing and that's all I remember. So I was told that I'd had a heartache. For them, their description was I'd gone really blue, my tongue was hanging out. So he, he being my brother, he did CPR. He had the ambulance on the phone and they were telling him what to do. So he breathed for me for 27 minutes. *In that time,* my experience of death was beautiful. It was really calming and freeing. There was a light. I didn't really notice the light until it was mentioned to me. In that peace and floating sensation, my people were there. And what I mean by that are the people that I've lost. My husband, my father, my sister, my nephew. Close whanau [family] and friends, were all there. Clearly, just like, waiting. My father, out of all of them, was really angry and yelling at me to go back to the light, that it wasn't my time. *That's* when I saw the light. It was very, very clear.

I woke up the next morning in hospital. They told me I'd had a heart attack. Um, and died, for a long time. I was really angry. What I was angry about was that I'd woken up here and not in this amazing place that I'd gone to. And part of that too, was I had to now be responsible for the people I'd hurt, waking up back here. My children were standing at the end of bed, in hospital, *really* upset and broken and just devastated. So that was my moment. That was the moment I realised I hadn't loved and cared for the people that loved and cared about me. And I made a decision that I was gonna change. That I was gonna do whatever it took to change my life and be a good mum to my children and be a good person in the world. There was a part of me that believed that I'd been given a second chance and I didn't know what that was for, or what that meant. I still don't know what that is now, but I do know that in a very short time I've changed hugely. You know, I haven't used again since. I've given up smoking cigarettes even. I've gone back to school. I've educated myself, I've got a job, I've made amends to a lot a people I've hurt in my past. I work with people every day now I used to use drugs with and sell drugs to, that I've hurt and robbed and all sorts of things. But that stuff only helps both me and them both grow. So it's…it's a humbling experience.

You know, I still have my days that I still think 'oh, what is it all for?', but I know in my heart that living is *a whole lot* easier than just existing. I feel like my whole life I hadn't *lived*. So I get great joy every day in getting up and going to a job that I enjoy doing and giving of myself to others. I'm really involved in giving back to the community. The community know me well so my change has impacted on them hugely and my whanau.

That near-death experience, I remember it vividly in my mind. It's never gone away from me. What it's done its removed my fear of dying. I kinda didn't like even being around death, let alone thinking about dying. It used to come with quite a fear and quite an overwhelming sadness. And I don't have that now. It's almost like it's been removed in such a way that I don't even fear being around dead people. I mean, like I've just been involved in a Tangi [funeral]. My friend's son hung himself, and this is just days ago. I've been able to move his body physically, move his body, pack ice under him, prepare the room. Do a whole lot of stuff around the body that is quite different for me, from how it used to be. It was just get in there and get things done to support my friend who was unable to do that at the time. I'd known this boy since he was 3. It was sad.

I don't fear death now because I know what's waiting on the other side, and that to me is beautiful. I just have to wait now till that happens. I have so much to *live* for and I think that when my time is up, I kind of have a picture of where I can go to and that's kind of removed anything I feel about dying, which is awesome. Because now *I know*. And that's a cool thing. I've shared it with not many people because I think it might sound weird to some people. With my nearest and my dearest I'm like 'oh my god, when I died this is what happened" because 27 minutes is a long time. And to wake up the next day and not have brain damage and be affected by someone else breathing for me through CPR for that long, is amazing. For me it's made me believe stronger and have more faith in those who have gone before me. I wasn't brought up Māori but I've immersed in all things Māori since this happened. That's just where I ended up. It just happened. I was brought up quite European because my mum was a Pakeha and my dad was in the era where you weren't allowed to speak Māori so he never taught us. So it's something that I've immersed myself in and learnt heaps about that part of who I am and where I come from. I gone back to where my dad's from and I've met whanau. I've put my hands in my mountain and I've swum in my river and I really grabbed it for what it is. And I work in kaupapa Māori so I'm in it. I feel I have a purpose in life. I never felt that before. It's like, it is in dying, that true living, true life begins. That's just not something I'd ever thought about before. So I *absolutely* know in my heart that that stuff is true for me.

Before I was quite afraid of death. I carried a lot of grief and just knowing that I was unable to deal with a lot of the people that I'd already lost, the sadness and the grief that came with that. Death was not good for me. It was something that made me angry, that I didn't understand, that I didn't want to be around. I don't have that any more, it's like it's been removed from me. Its helped me deal with stuff and some issues that I'd held onto for a long time.

There's lots to do. My focus on my life is soooo different. I feel like I can do anything. Its only me that's only ever been the barrier to not having a go at something. The NDE is like being reborn to eternal life. I think that my confidence is different. Probably too I didn't have a purpose then. My

purpose was to get the next drug. I wasn't really living. And now that I have purpose its changed everything. It's interesting that it took that to get it. Dying can't be that bad if that's what you can come away with.

I would say that you return to the ones that love you the most. You return to the ones that have been before you. I guess you get born to live a life and then return to where you come from. Which is not something I knew before, but I believe that in my heart now. I just think that where's it all started so that's got to be where it all ends.

I'd never heard about NDEs beforehand. I guess there was that element, you know, you grow up thinking there was heaven and there's hell and if you don't believe in God and heaven then you go to hell. I'd been bad and I'd enjoyed the badder things in life. Bad people go to hell. So I guess there was part of that in me. But I hadn't really thought about where you go. I know I didn't have a belief in anything Māori, so I hadn't thought about returning to where I come from and that. Anything like that. Death was based on what I'd seen - movies, what I'd read in books and what I'd heard from other people. We never grew up going to church or anything like that. I suppose I don't know what I expected but I didn't expect that. I *did not* expect that. I was really angry for a few weeks afterwards that I woke up here.

After, I was willing to have a go at anything. My whole outlook on what I could do mentally, physically and emotionally was completely different. The stuff I had carried and felt I couldn't deal with – I'd chose to use drugs and not deal with – suddenly I was prepared to deal with. I realised there was a whole lot of baggage I'd held onto that made me sick. I'd held onto that by using drugs and not dealing with some pain. It all came from that experience [the NDE]. The change was massive, really big.

I've had a lot of wairua [spiritual] moments since. I'll get a sense of…it's like wairua, it's really hard to describe. It's an intrinsic feeling. It's like I'm not really alone. I'm really blessed to be here in this moment. You get that tingling and you get uplifted in whatever's going on in that moment. I didn't get that before. I sometimes wonder, 'Oh am I getting like this double dose of what I was unable to feel back then?' I've had moments where I've gone "do you think I need to go to church and understand God"? People are like "why would you do that"?! So, no.

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