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# ASPECTS OF NEAR-DEATH EXPERIENCES THAT BRING ABOUT LIFE CHANGE

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A Thesis presented in partial fulfillment of the requirements for the degree of  
Master of Arts at Massey University, Manawatū, New Zealand

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## Abstract

The literature on near-death experiences (NDEs) and its aftereffects is steadily growing. Common elements of a NDE have been widely documented, as well as a large body of common aftereffects. These aftereffects leave long lasting and dramatic impressions on the experiencers, yet no relationship between the content and features of a NDE and its aftereffects has been identified. The current study aims to investigate the relationship between NDE-related factors and their aftereffects in an Aotearoa New Zealand sample. Both quantitative and qualitative methods were used to obtain data in order to thoroughly investigate how NDEs manifest, how they are interpreted, and how they affect the people of Aotearoa New Zealand. Results showed that several situational factors and depth of participants NDEs were able to predict the degree of life changes they experienced as a result. Some evidence was provided to suggest that the type of NDE experienced also affected participants life changes. The current studies sample consisted of mostly New Zealand European/ Pākehā which limited ethnic interpretation of the findings. It is recommended that future studies include a culturally diverse sample of people from Aotearoa New Zealand to complement the culturally diverse nation. It is also recommended that further investigation in made into the direct relationship between NDE features and aftereffects in order to better understand what spurs such dramatic life changes.

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## Introduction

Since the 1970's, with the growing advancement of medical technology and the increase in resuscitation rates, there has also been an increase in reports of extraordinary psychological experiences (Moody, 1975; van Lommel, 2006; van Lommel, van Wees, Meyers & Elfferich, 2001). These experiences, which are commonly believed to occur during periods of extreme physiological impairment or clinical death, often involve the transcendence of space, time, and perceptual boundaries. Individuals reporting them typically describe an alternate reality that appears somewhat unearthly. They may experience feelings of incredible peace and love, and report the act of leaving their physical body known as an Out of Body Experience (OBE), as well as passing through a tunnel to reach an incredibly bright light (Holden, Greyson & James, 2009; Moody, 1975; van Lommel, 2006). On more rare occasions, they may experience "hellish" elements and features such as passing through a dark endless void, feelings of fear and anxiety, or isolation (Greyson & Bush, 1992).

In 1975, when Raymond Moody published the book *Life After Life*, he named such phenomena: near-death experiences (NDEs). Since then, an extensive body of literature has attempted to account for the incidence and phenomenology of NDEs. Such literature indicates NDEs are reported with relative frequency, particularly by cardiac arrest survivors. Although some cultural similarities and differences have been identified (Sartori, 2014), NDEs reports are evident across time and cultures, and there appear to be no consistent demographic or circumstantial differences determining who has an NDE or type of NDE they may have (Ring, 1980). In terms of phenomenology, while no documented NDE has been found identical to any other, the literature suggests pleasant NDEs commonly comprise a combination of 16 elements, which have been categorized into four groups: cognitive, affective, paranormal, and transcendental.

An extensive body of literature has also documented the aftereffects of NDEs. Empirical findings from the past 40 years indicate NDEs usually precipitate dramatic changes in attitudes, values, and beliefs. Such changes are often beneficial and have positive and long-lasting effects. However, because NDEs transcend conventional norms of reality, it may take some time for the experiencer to find meaning in the NDE, integrate it into their lived experience, and recognise the life changes as positive. Overwhelmingly however, the vast body of literature on aftereffects indicates the profoundly beneficial nature of NDEs.

Although the aftereffects of NDEs have been thoroughly documented, along with the features experienced during an NDE, research has yet to determine what it is about the NDE that leads to such positive transformations. While theoretical propositions have been provided to address this issue, an identifiable relationship between the content of NDEs and their aftereffects has yet to be empirically explored. Furthermore, limited resources and research surrounding NDEs is particularly evident within Aotearoa New Zealand. To date, only one large scale study examining NDEs has been conducted in Aotearoa New Zealand (Tassell-Matamua & Murray, 2014). While that study provided a rich analysis of variables related to NDE circumstances and contents, and showed the NDE characteristics reported by the sample are synonymous with those reported in previous research, it failed to investigate the aftereffects of NDEs.

The present research aims to address both of these under-researched areas **by investigating the relationship between NDE-related factors and their aftereffects in an Aotearoa New Zealand sample**. By doing so, this research will contribute to universal understandings of NDEs and their aftereffects, by empirically addressing an area of research that has not been previously conducted. It will also contribute to the limited but growing pool of NDE research in this country, by advancing knowledge of how NDEs impact New Zealanders who have these experiences.

To orient the reader, the thesis is organised as follows. Chapter one provides a brief overview of NDEs, before reporting on the content of both pleasant and unpleasant NDEs, and on the variety of aftereffects experienced by NDErs. This is displayed through a logical progression of how an NDE may manifest be it pleasant or unpleasant using the characteristics identified in Moody's *Life After Life* (1975) as a template. How individuals cope with their NDE, the changes they experience in themselves, their relationships, and their beliefs and attitudes, will also be discussed in detail with examples from other research.

Chapters two and three provide an overview of the methodology used in the present research. Participants and the recruitment process are described, and details are provided of both quantitative and qualitative measures used (respectively). For the quantitative method, an online quantitative questionnaire comprised of Likert-type scales assessed the depth of an NDE, and potential aftereffects of the experience. The qualitative methodology employed semi-structured interviews for data collection. A theoretical thematic analysis guided data interpretation of the qualitative data.

The results of the research are presented in chapters four and five. A description of the statistical analyses used to assess the quantitative component of the research is provided first, followed by the findings of the qualitative component (respectively). The quantitative results present demographic characteristics to provide context for how NDEs manifest in people of Aotearoa New Zealand. Differences between demographic factors, content of the NDEs, and life changes are compared using T-Tests, ANOVAs and Multiple Regressions. The qualitative results provide extracts from interviews in order to display these results in a 'real life' context and to highlight how NDEs have affected the individual in terms of life changes and adaptations undergone.

Chapter six presents a detailed discussion of the findings and their implications. How these findings can contribute to current knowledge of NDEs in general and NDEs in Aotearoa New Zealand is discussed. Special attention is given to discussing identified relationships between the content of NDEs and their aftereffects. Limitations of the current study are identified, along with directions and suggestions for future research.

## **CHAPTER 1:**

### **Overview of NDEs**

This chapter provides an overview of NDEs. It begins by defining NDEs, and providing information regarding the incidence of NDEs, and specific demographics regarding who has them. The chapter then provides a detailed description of specific elements commonly reported in both pleasant and unpleasant NDEs. These elements are described with examples from previous research and an indication of their prevalence and occurrence amongst near-death experiencers (NDErs). The common aftereffects from both pleasant and unpleasant NDEs are described, and a description of how the aftereffects are systematically measured is given. This is followed by an overview of literature investigating relationships between NDE-related factors and the aftereffects. Lastly, the current research aims and hypotheses are defined.

#### **1.1 Definition, Incidence, and Demographics**

NDEs are defined as unusual, psychologically profound experiences, typically involving a combination of affective, cognitive, paranormal, and transcendental features (explained more fully below), and where the boundaries between space, time, and perception are transcended (Tassell-Matamua, 2013). Given their wholly subjective nature, objective methods for identifying NDEs have been developed. The currently accepted criteria for categorising an NDE for empirical purposes, involves scoring above a specific threshold on the Near-Death Experience Scale (NDES; Greyson, 1983) (which is described in more detail below). This scale determines the extent features (i.e., cognitive, affective, paranormal, transcendental) occurred during the NDE, with higher scores indicating a greater number of features.

NDEs most typically occur in people who have been physiologically close to death, or who have been considered dead and resuscitated, and can be facilitated by any number of a variety of critical incidents. For example, cardiac arrest, drowning, suffocation, motor vehicle accidents, child birth complications, attempted homicide and suicide, are among some of the physiological infringements that have been reported as preceding an NDE (van Lommel et al., 2001). Improved survival rates due to modern resuscitation techniques, have led to an

increase in reports of NDEs. Researchers suggest 4-5% of general populations across the entire Western world have experienced an NDE (van Lommel, 2006), of which 12-18% of cases are from cardiac arrest survivors. This prevalence is 10 times higher than that of patients with other cardiac conditions (Greyson, 2003). It is possible, even likely, that NDEs are under-reported. Therefore, the actual incidence in any given population is believed to be much higher (Zingrone & Alvarado, 2009). To date, there are no consistent cultural or demographic correlations to define who is likely to have an NDE (Ring, 1980). It appears that any person of any age, gender, religious affiliation, educational level, socio-economic status, among others, is equally likely to have an NDE as anyone else.

NDEs have been reported across time and cultures, with some of the earliest reports dating back to the Sumerians, Ancient Egyptians, and Classical Greeks (Knoblach, Schmied, & Schnettler, 2001; Schroter-Kunhardt, 1993). Humanity's oldest texts, including the Egyptian Book of the Dead and the Old Testament, have NDE accounts embedded within them (Holden, Greyson, & James, 2009). Teachings of some of the world's major religions, including Judaism, Hinduism, Buddhism, Islam, and Christianity, have similarities to many NDE features (Masumian, 2009). Yet, systematic research into NDEs has only occurred within the past 40 years, and largely in Western, Anglo-European countries such as the United States, United Kingdom, the Netherlands, Germany, and Australia (Knoblach et al., 2001; Parnia et al., 2014; Sartori, 2008; van Lommel et al., 2001). Therefore, most of what is currently known about NDEs comes from published case reports and large-scale empirical research from within these Western countries, while only a minority of NDE literature has addressed NDEs in non-Western cultures, including Thailand, India, South America, Tibet, Iran, China, and Japan (e.g., Bailey, 2001; Ghasemiannejad, Long, Nouri, & Farahnakian, 2014; Gomez-Jeria, 1993; McClenon, 1991; Murphy, 2001; Pasricha, 1993). To date, only one large-scale study has investigated NDEs in Aotearoa New Zealand (Tassell-Matamua & Murray, 2014).

Despite the lack of NDE literature from non-US and non-Western European countries, recent research using the NDES to categorise the experiences, indicates NDE features are remarkably similar across cultures, although available cultural reference points impact the interpretation of such features. For example, NDEs from India indicate people often report seeing religious figures of Hinduism, such as Yamraj the god of death, who often sends messengers, 'yamdoots' to collect the dying person (Sartori, 2014). The theme of being collected from this life to be taken to the next life by a religious or spiritual figure is common

across NDE accounts, however, the interpretation of ‘who’ the figure is, is often reflected by cultural background. For example, many Western NDE accounts often report meeting a being, who they perceive or describe as Jesus or God; which could be attributable to the Judeo-Christian traditions underlying many Western cultures.

This has led many NDE researchers to indicate that while the interpretation of the feature may be affected by the cultural and linguistic reference points a person has available to them, consistent patterns and features of NDEs are still evident across cultures (Murphy, 2001). This is reflected in the results of NDE studies from around the globe. For example, findings of the large-scale study conducted in New Zealand revealed the features of NDEs in the sample were synonymous with those reported in previous overseas literature (Tassell-Matamua & Murray, 2014). A recent study indicates Shi’ite Muslim NDEs do not differ in the features to NDEs reported by other cultural groups (Ghasemiannejad et al., 2014).

The next sub-section will address the features or content of NDEs more fully - first by describing the content of pleasant NDEs, before moving onto describe the content of unpleasant NDEs.

## **1.2 Content of Pleasant Near-Death Experiences**

Most of what is known about NDEs indicates such experiences are largely reported in pleasant terms, and that the content of the NDE is also correspondingly pleasant. Raymond Moody (1975) was the first to identify and publish 15 specific features of an NDE. These features are still widely recognised as being characteristic of NDEs, and helped pioneer modern qualitative and quantitative measurements of NDEs, in order to standardize empirical investigations of the experiences. One example is Ring’s (1980) Weighted Core Experience Index (WCEI), which identifies five features that make up a ‘core experience’. Another example is Greyson’s (1983) Near-Death Experience Scale (NDES), which is currently the most widely used scale for classifying NDEs. The NDES was devised from interviews with 74 participants, of whom Greyson collected the 16 most commonly reported features to create the scale. These items are also closely correlated with Ring’s WCEI (Greyson, 1983), and are categorised into four groups: cognitive, affective, paranormal, and transcendental. Specific NDE elements identified by these three authors are provided in Table 1.1, with each of the features categorised according to Greyson’s four typologies.

Table 1.1

*Features of NDEs Identified by Moody (1975), Ring (1980), and Greyson (1983)*

Author	NDE Features			
	Cognitive	Affective	Paranormal	Transcendental
Moody (1975)	<input type="checkbox"/> hearing the news <input type="checkbox"/> the noise <input type="checkbox"/> the review	<input type="checkbox"/> ineffability <input type="checkbox"/> feelings of peace and quiet	<input type="checkbox"/> out of the body <input type="checkbox"/> the dark tunnel	<input type="checkbox"/> meeting others <input type="checkbox"/> the being of light <input type="checkbox"/> the border of limit and coming back
Ring (1980)		<input type="checkbox"/> feelings of peace <input type="checkbox"/> experiencing a bright light	<input type="checkbox"/> an Out-of-Body Experience (OBE) <input type="checkbox"/> entering a tunnel/dark area	<input type="checkbox"/> entering the light and/or meeting persons/ figures
Greyson (1983)	<input type="checkbox"/> time speeding up <input type="checkbox"/> rapid thoughts <input type="checkbox"/> review of present or past life <input type="checkbox"/> understanding of self/others/universe	<input type="checkbox"/> relief, peace, pleasantness <input type="checkbox"/> joy or happiness <input type="checkbox"/> sense of harmony or unity with the universe <input type="checkbox"/> seeing or being surrounded by a bright light	<input type="checkbox"/> vivid senses <input type="checkbox"/> extrasensory perception <input type="checkbox"/> seeing scenes from the future <input type="checkbox"/> separation from own physical body	<input type="checkbox"/> entering a mystical or unearthly world <input type="checkbox"/> encountering a mystical being or presence <input type="checkbox"/> seeing dead people <input type="checkbox"/> coming to a barrier or point of no return

These NDE features are described more fully below. The features are grouped into Greyson’s (1983) typologies including cognitive, paranormal, affective, and transcendental groups. Within each of these groups are Moody’s (1975) features that were described in *Life After Life*, combined with Ring’s (1980) core experience features. This layout provides an overview of what a predominantly ‘cognitive’ experience may include and so forth with regard to the transcendental, affective, and paranormal groups. Examples and contributions of other research are also included to provide a well-rounded picture of NDE manifestation.

### 1.2.1 Cognitive Features.

***Hearing the news.*** Hearing the news means to hear of one’s own medical situation, despite being disembodied, and appearing unconscious or dead to external observers. This often occurs while doctors and nurses are in the room with the patient (where the NDE occurred in a medical setting), perhaps moving around the room talking about the patient and their critical condition (Moody, 1975). This is often confusing to the NDEr as they may hear doctors pronounce them dead, yet they feel very alive and may try communicating this to the



people around them. They may try to physically move their body or speak, but are unable to communicate that they still have conscious perception (Moody, 1975). For example, Parnia et al. (2014) found that out of 330 patients who were successfully resuscitated during cardiac arrest, 2% of patients reported explicitly hearing or seeing actual events during their resuscitation. During the time where one is aware they are pronounced dead may also be accompanied by ‘the noise’ (described below) (van Lommel, 2010).

***The noise.*** Moody (1975) describes cases where individuals have reported strange auditory sensations at or near death. These sensations may include: a loud buzzing noise, ringing, banging, or even whistling sounds (van Lommel, 2010). Some individuals do report hearing pleasant noises, such as bells chiming gently or soft music. Individuals may hear such noises or have such sensations as they feel they are leaving the physical body as part of an OBE (Sartori, 2014).

***The review.*** The review features in both Moody (1975) and Greyson (1983) and is typically described as an overview of the person’s life in their entirety, or segments of it. The prevalence of the review in NDE populations ranges largely between 13% and 30% (Greyson, 1983; van Lommel, 2010). The review may be facilitated by the being of light, to provoke reflection. It may occur in a temporal order, where one image from earlier in life swiftly follows a previous image. Others report no order amongst images, with all being presented in a panoramic view. Events shown may be significant or insignificant, at which time the individual may feel the full force of the consequences of their actions, not only from their perspective, but others they interact with. The presence of the being may be felt in a non-judgemental way, to lend comfort and strength during this process (Sartori, 2014). The process of reviewing one’s life is typically rapid and the experiencer feels as though their whole life has been played before them in a matter of seconds (although time is difficult to gauge). No matter how the review was presented, individuals feel as though they remembered everything shown to them, even how their actions affected others in previous events (Moody, 1975).

***Time speeding up and rapid thoughts.*** Time often appears to have no meaning or individuals feel as though hours have passed, when objective measures of time (i.e., clock or medical records) indicate they were unconsciousness or the loss of vital signs only lasted for seconds or minutes. It is as if time does not exist and therefore many cognitions and thoughts can occur in what would be a unit of time (Noyes & Kletti, 1976). Greyson (1983) noted that



64% of participants felt that time had stopped or had no relevance, and 19% of participants felt their thoughts were unusually fast during their NDE. It is quite remarkable how much some people can remember or how extensive they feel the subjective experience was, when they may have been unconscious or clinically dead for only a short period of time (Sartori, 2014).

***Understanding of others and the universe.*** Greyson (1983) reported that 30% of participants experienced a sudden understanding during their NDE. The understanding may be of themselves, other people, or of the universe. For example, NDErs have reported having an extensive understanding of the workings of the universe post-NDE; with many claiming they were ‘given’ this information during the NDE itself. This understanding may also include a better grasp of one’s mission or purpose in life, or that they feel life has greater meaning. For example, in their seminal study, van Lommel and colleagues (2001) revealed 52% of NDErs felt a sense of inner meaning to life two years after their NDE, and that this had increased to 57% of the NDEr sample at an 8-year follow-up.

### **1.2.2 Affective Features.**

***Ineffability.*** Moody (1975) describes this term simply as the inability to express or communicate meaning. This is a common issue for near-death experiencers (NDErs) as they often feel there are no words to describe what they experienced, as they have no experiential and linguistic reference points that capture what they felt. The inability to express through language provides many difficulties both for the experiencer and the interpreter. For example, experiencing an NDE can be largely overwhelming, and the inability to express what has happened is likely to cause some distress to the individual (Morris & Knafel, 2003). It may take some time for NDErs to articulate their experience fully, and even then the enormity of the experience may not be captured (Griffith, 2009).

***Positive affect.*** This feature is present among all three studies mentioned (i.e., Greyson, 1983; Moody, 1975; Ring, 1980) and is the most prominent feature of many NDEs (Charland-Verville, 2014; Sartori, 2014). Both Moody and Ring report people having extreme feelings of peace and quiet in the early stages of their NDE. During this phase, people feel, along with peace, an immense joy and often tranquillity. All pain they felt before has now disappeared during their NDE (Sartori, 2014). A sense of harmony and/or unity with the universe is also a common affective experience of the NDE.

***Experiencing a bright light.*** Reports of being surrounded by a bright light are very common. In an early study, Greyson (1983) reported 43% of his participants indicated they had felt surrounded by a bright light during their NDE. A similar frequency was found by Pacciolla (1995) a decade later. However, more recent studies by Greyson (2003) and Schwaninger, Eisenberg, Schechtman, and Weiss (2002), reveal reports of experiencing a bright light were as high as 70% and 63% of participants, respectively.

### **1.2.3 Paranormal Features.**

***The dark tunnel.*** The tunnel feature is common and appears in all three publications (Greyson, 1983; Moody, 1975; Ring, 1980). This feature is often described as a sensation of being pulled very rapidly through a dark tunnel or space. At this point, during the tunnel feature, individuals may be shown their 'life review' (Ring, 1980). Usually, following the sensation of the tunnel is the experience of drawing closer to a bright light (Sartori, 2014). The tunnel feature appears to be more common in Christian and Buddhist cultures, but is rare amongst native populations in North America, Australia, and the Pacific Islands (Kellehear, 1993). However, contrary to this idea that the tunnel feature may be culture bound, is Blackmore's (1993) theory that the 'tunnel' may in fact be interpreted simply as 'darkness' or a 'cave' by other cultures. Ring (1980) found 23% of participants reported a 'darkness' and fewer reported seeing a specific tunnel. Greyson and Stevenson (1980) found 33% of participants experienced a tunnel-like feature. However, the definition of tunnel or darkness and the extent of similarity between descriptions is undecided (Kellehear, Stevenson, Pasricha & Cook, 1994).

***Out of the body.*** This feature is again present in all three studies (Moody, 1975; Greyson, 1983; Ring, 1980). The out of body experience (OBE) feature can occur alone, without any other features present. The OBE typically begins with an individual feeling as though they are being drawn up and out of their body (may be accompanied by the noise), feeling as though their conscious perceptions exists in a location removed from their physical body (typically near the ceiling) (Sartori, 2014). They may experience a sensation of weightlessness and no longer affiliate with their physical body. Moody (1975) mentions that individuals often do not realize for some time that they are in fact separate from their body. They may also take some time to realize the body they are looking at in a hospital bed for example, is their own body. OBEs have also been reported by congenitally blind people (Ring & Cooper, 1997), promoting interesting questions around the relationship between

consciousness, the brain and the body. The prevalence of OBE's in an NDE varies greatly; for example, 24% (van Lommel et al.,2001), 37% (Ring, 1980), and up to a striking 77% (Greyson & Stevenson, 1980), and even 99% (Sabom, 1982). However, the degree to which an OBE is defined within a NDE varies. These percentages also include features ranging from 'feelings of detachment or disembodiment' up to 'witnessing current events' (Blank & Dieguez, 2009).

*Vivid senses, ESP, and scenes from the future.* During and sometimes after the NDE, individuals may experience vivid or heightened senses. Senses such as sight and hearing appear to be heightened along with a greater awareness of consciousness. This feeling of heightened senses is often described as 'more real than real' (Sartori, 2014). A comparison of studies investigating these features reveals vivid senses occur most frequently, being reported by between 15-54% of NDErs. ESP has been reported to occur in approximately 11-23% of NDEs, while the frequency of visions of the future is reported as occurring in between 7-16% of NDEs (Zingrone & Alvarado, 2009).

#### **1.2.4 Transcendental Features.**

*Meeting others.* Meeting others such as deceased loved ones, spiritual beings or religious figures are identified by both Moody (1975) and Greyson (1983). These beings predominantly ease the individual into death, or collect or guide them through the NDE. They may also 'send back' the individual by imparting to them it is not their time and they must return to their physical body (Greyson, 1983; Moody, 1975; Sartori, 2014). Most individuals who experienced meeting with a deceased loved one during their NDE (around 13%) were convinced they were in the presence of their beloved, suggesting their consciousness had apparently survived physical death in some form. The deceased person was also highly likely to be known to the NDEr and in particular, a relative from a previous generation (Kelly, 2001). An interesting finding also by Kelly (2001) was the association between closeness of death and seeing a deceased loved one. Those who were close to death were more likely to encounter a deceased loved one (22%), compared with those who were not close to death and encountered a deceased loved one (8%).

*The being of light.* At the end of the tunnel feature, a small but bright light may be noted. It eventually becomes larger and brighter, until the individual is engulfed in this light, which may be described as having the presence of a 'being'. This light is so bright, yet it does not hurt the experiencers' eyes to look directly into it. The being may not be known to the

individual, but they are sure of its warmth and embracing love (Greyson, 1983; Moody, 1975; Ring, 1980). According to Ring (1980), encounters with beings occur in the last stage of the 'core experience' once an individual has entered into the bright, warm, embracing light. In fact, 18% of individuals who report seeing a deceased person during their NDE associate the person as a religious figure. Many report seeing a being of light they associate with God (Kelly, 2001). This interpretation however is closely linked with cultural background and influenced by an individual's prior beliefs (van Lommel, 2010). Where the being of light is interpreted literally as a light, the light usually appears white or yellow in colour and extremely bright, yet not painful to look into (Blanke & Dieguez, 2009). When the light is interpreted this way, previous studies found reports from NDErs of 'seeing the light' which ranged from 23% to 30% (Ring, 1980; Sabom, 1982; van Lommel et al., 2001).

***An otherworldly realm.*** One the experiencer enters into the bright light, they may find themselves in another realm. This realm may consist of beautiful gardens, breath-taking landscapes with an abundance of flowers and possibly a stream or river running through the landscape (Sartori, 2014). Sabom (1982) indicated 54% of his participants reported a transcendental environment during their NDE. Participants in Grey's (1985) study reported otherworldly realms as "illuminated environments" (21%) and "beautiful landscapes and building" (18%). More recent studies have reported more incidence rates of visiting otherworldly realms by NDErs during their NDE as 54% (Schwaninger et al., 2002) and 63% (Greyson, 2003).

***The border or limit.*** During an NDE, an individual may feel as though they have reached some sort of border or point of no return. The border represents a point beyond which if one passes, there is no returning to life on earth. This border may appear as a river, wall, gate, mist, or simply a line. Typically this border appears at the end of the NDE as the individual can go no further than this (Greyson, 1983; Moody, 1975). Encountering the border or point of no return appears to be somewhat common. Greyson (1990) reported that of those who approached a border of some kind (69%), 30% made a conscious decision to return to their body, and 39% reported they reached a limit or were 'sent back' involuntarily.

***Coming back.*** People may feel as though they gently float back into their body, while others feel a jolting sensation, or a feeling of being squashed back into their physical body (Sartori, 2014). The return to the body may be voluntary or the individual may have been sent back by the being or by loved ones, against their will. Being sent back against one's will,

often occurs as the NDE is so pleasant, it is hard to comprehend returning to an earthly existence of potential pain, especially if physical recovery from injury or illness is likely to be prolonged (Greyson, 1983; Moody, 1975). If an individual wakes upon returning from such a pleasant place, they can often be distressed and disappointed by this and keep their experience hidden from others for many years (van Lommel, 2010).

### **1.3 Content of Unpleasant Near-Death Experiences**

Of those who experience an NDE, only a rare 1-2% report the experience as unpleasant or frightening (Greyson & Bush, 1992). However, it is possible the actual incidence of unpleasant NDEs is much higher, as individuals may be reluctant to disclose the unpleasant NDE, due to feelings of shame and guilt about what it may suggest about them (Greyson & Bush, 1992; van Lommel, 2010). Three specific categories of unpleasant NDEs have been described by Greyson and Bush (1992):

1. Those with phenomenology similar to peaceful NDEs but interpreted as unpleasant,
2. Those invoking a sense of nonexistence or eternal void, and
3. Those with graphic hellish landscapes and entities.

Some common NDE features are believed to characterise each category (Grey, 1987, as cited in Sartori, 2014), including: fear and a feeling of panic, out-of-body experience (OBE), entering a black void, sensing an evil force, and entering a hell-like environment. These are described in more detail below.

**Phenomenology similar to peaceful near-death experiences but interpreted as unpleasant.** This type of distressing NDE often features many of the same features from a pleasant NDE, such as: a bright light, a tunnel, a sense of being out of the body, and a life review. However, these features are interpreted as frightening or distressing, rather than comforting (Greyson & Bush, 1992). A common theme present in these types of NDE appears to be the perception that one has lost control (Bush, 2009). Therefore, it is not so much the content of the experience that is frightening, but the individual's subjective reaction to the content of the experience (Bush, 2012).

**A sense of nonexistence or eternal void.** This type of NDE entails a feeling of nonexistence or as if one has been condemned to an eternal void. This experience may include a sense of despair that life no longer exists and never did exist, and that it was a

delusion. These experiences may contain fewer features than the first type described above, and tend not to convert to a pleasant experience over time (Greyson & Bush, 1992).

**Graphic hellish landscapes and entities.** An even smaller number of individuals experience this type of distressing NDE. Features include that of seeing demons, or falling into a dark pit that is often interpreted as ‘hell-like’ (Greyson & Bush, 1992). This type of experience is particularly traumatic for the experiencer as it stirs feelings of guilt and shame, and likely contributes to non-disclosure of the NDE, and the subsequent uncertainty regarding the incidence of unpleasant NDEs (van Lommel, 2010).

#### **1.4 Aftereffects of Pleasurable Near-Death Experiences**

The publication of Moody’s (1975) book *Life After Life*, provided the first literary information about NDE aftereffects. He noted the most common aftereffect of many NDEs was the loss of the fear of death. Beyond this, the majority of other transformations were considered life-changing and almost exclusively positive. The first systematic study of aftereffects was conducted by Noyes (1980). Of the 205 participants who had been in a lifethreatening situation, Noyes noted nearly two-thirds of the sample reported life changes including loss of the fear of death, strengthened belief in an afterlife, and a sense of importance or purpose. Empirical studies accumulated over the past 40 years into NDE aftereffects have verified Moody’s initial observations and Noyes findings, in addition to providing consistent evidence of a pattern of frequently occurring aftereffects, irrespective of participant demographics. The most common aftereffects of both pleasant and unpleasant NDEs identified in the literature to date are presented in Table 1.2, and described in detail below. The systematic measurement of these aftereffects will be described in the section: Empirically Measuring NDE Aftereffects.

Table 1.2

*Common Aftereffects of Pleasant and Unpleasant NDEs*

Experience type	Positive	Aftereffects Negative	Positive or Negative
Pleasant	<input type="checkbox"/> Loss of fear of death <input type="checkbox"/> An increase in tolerance, love, and compassion <input type="checkbox"/> Appreciation for life	<input type="checkbox"/> Integrating the experience	<input type="checkbox"/> Spiritual/ religious value change <input type="checkbox"/> Belief in the afterlife <input type="checkbox"/> Increase in paranormal perception
Unpleasant	<input type="checkbox"/> The turnaround	<input type="checkbox"/> Reductionism <input type="checkbox"/> Long term distress (long haul)	

**Loss of fear of death.** Moody (1975) reported the most common aftereffect of a pleasant NDE was the loss of fear of death. Other researchers have since documented this common finding (e.g., Groth-Marnat & Summers, 1998; Noyes, Fenwick, Holden, & Christian, 2009; Sartori, 2014; Sutherland, 1990; van Lommel et al., 2001). A study published by Greyson (1992) showed death threat in those who had a near fatal accident and experienced an NDE was significantly lower than those who had a fatal accident and did not experience an NDE. van Lommel et al. (2001) found loss of death fear was maintained over time, with participants showing decreased death fear at 2 and 8 year follow-ups after the NDE. Sartori (2014) also noticed individuals who did not give great meaning to their experience still had a degree of uncertainty toward death, compared to those who attached great meaning to their experience and had a subsequent loss of fear of death. Individuals who reported a NDE were assessed on their level of fear of death by numerous studies (Grey, 1985; Opdebeek, 2001 as cited in van Lommel, 2010; Sutherland, 1992). These studies were compared and identified that those who believed in life after death before their NDE, were certain of life after death after their NDE (respectively, ranged from 22% who believed in life after death before their NDE, to 100% who believed in life after death after their NDE). The same studies also identified a dramatic reduction in fear of death before and after the NDE (respectively, ranged from 16% who did not fear death before their NDE, to 100% who did not fear death after their NDE) (van Lommel, 2010).



**An increase in tolerance, love and compassion.** Many people feel they are more tolerant as a result of their NDE (Sartori, 2014). They report feeling a flood of overwhelming love during the experience, which they continue to express throughout their lives. After the NDE, these changes in compassion, love, and tolerance are often immediately noticeable (Groth-Marnat & Summers, 1998; van Lommel, 2010), with individuals exhibiting less criticism of others, more emotionality, and more forgiveness. As a result of this renewed or increased compassion, family relationships often change, as the experiencer may spend more time enjoying and appreciating their family.

However, these changes may also lead to relationship problems. People often struggle to communicate, due to the lack of vocabulary available to describe their feelings. Other difficulties may arise from the experiencers' desire to redirect this new compassion to help others. This may result in a career change to professions such as nursing, terminal patient care, or volunteer work for the elderly/low income families. NDErs are also more likely to donate to charities or volunteer their services to a particular cause (van Lommel, 2010). These drastic changes in interests and values can be difficult for a spouse or family to adjust to, and may lead to divorce (Sutherland, 1990).

**Appreciation for life.** NDErs often return feeling a renewed sense of purpose for this life, implying they now know what their path is and that they have a mission to fulfil in life (van Lommel, 2010). This appreciation is also evident as experiencers take more time to savour the moment, and really appreciate the small things in life (Sartori, 2014; van Lommel, 2010). A new found appreciation for life can also be seen in some individuals who experience a distressing NDE. This appreciation comes from a jolt back into reality, similar to that described in 'the turnaround' below (Sartori, 2014).

**Change in spiritual / religious beliefs.** It is common for people to change their spiritual beliefs after their NDE. Some people may become more religious, or on the other hand, some may feel affiliation with a particular religion is no longer beneficial (Sartori, 2014). It is also common that people may become less religious, but identify as more spiritual (Sutherland, 1990). For example, in a Dutch study by van Lommel (2010), religious beliefs (irrespective of NDEs) were found to exist independent of church affiliation. This was shown as church attendance decreased from 2% who did not attend church in 1900, through to 63% who do not attend church in 1999. This decrease in church attendance was coupled with an increase in religiosity (perhaps in spiritual form or closely related to spirituality) from 46%



before the NDE to 84% after the NDE. A NDE is shown to also lead to better spiritual well-being overall compared to those who do not have an NDE, and the depth of spiritual well-being is positively correlated with the depth of the NDE (Khanna & Greyson, 2013). This correlation was also found between religious belief and depth of NDE (McLaughlin & Malony, 1984). It is evident that NDErs go through some form of spiritual or religious transformation, and they feel an ongoing connection with God or a Higher Power that does not necessarily need mediation by means of a church or organised group (Sutherland, 1990).

**Belief in the afterlife.** A study by Groth-Marnat and Summers (1998) showed many people have a strengthened belief in the afterlife after their NDE. In fact, another study by Sutherland (1990) revealed 100% of participants believed in life after death since their NDE. Very few studies actually address the question of whether NDEs are indicative of a life after death and even fewer make any attempt to interpret people's beliefs on the subject (Greyson, 2007). Since Moody (1975) popularized the topic of NDEs, researchers have been avoiding the 'life after death' question (Greyson, 2007).

**Increase in paranormal perception.** The paranormal instances that may follow an NDE are typically less common and less well-known (Sartori, 2014). An example of this is an increase in sensitivity to electricity and the inability to wear wrist-watches, due to the time stopping or becoming inaccurate. Sartori (2014) identified this aftereffect as quite common among participants, yet they were not aware or did not attribute this inability to wear a watch directly to their NDE until it was mentioned. Some NDErs also report changes in electromagnetic fields, more so than individuals who have not experienced an NDE. These individuals may experience interference with items such as clocks, and even small appliances such as kettles. Sartori (2014) even suggests that the depth of the NDE may have an effect on the magnitude that the individual is sensitive to electricity.

Along with sensitivity to electricity, some may be sensitive to enhanced intuition, premonition, or other psychic tendencies. This may include such things as reading other peoples thoughts, predicting deaths, or foreseeing peoples upcoming misfortunes. This can be quite distressing to the experiencer and many become isolated and reclusive because of this (Sartori, 2014).

**Integrating the experience into existing relationships and telling others.** It can be very difficult for an individual to share their NDE with others, for fear of being ridiculed or judged (Moody, 1975). This is especially the case if an individual has tried to tell of their

experience and had negative or unfavourable reactions. They therefore, may refrain from sharing their experience any further and experience some distress. Unfortunately, this is common when disclosing the NDE to medical professionals upon waking in recovery (Morris & Knafl, 2003). Moody (1975) writes of experiences where people have tried to tell their doctors or nurses and other staff about what happened, and they have been told not to talk about their experience, or that it was due to lack of oxygen, or hallucination. Often NDErs also experience relationship upset following their experience as they have new found beliefs and attitudes. This often results in an increase in divorce rates amongst NDErs (Insinger, 1991). Integrating the experience with others is difficult, but integrating the NDE with the individual can also be challenging as they adjust to this world with their new found insights. However, experiencing an NDE or knowing someone who has, may also act as a healing agent when facing death (Horacek, 1997). This is because individuals find their experience comforting and feel better equipped to deal with grief because they 'know' death does not have to be a bad or frightening experience, and may be quite the opposite (Horacek, 1997).

### **1.5 Aftereffects of Unpleasant Near-Death Experiences**

Not much empirical attention has been paid to unpleasant NDEs, but it is important to acknowledge they do occur and are often extremely traumatic for the experiencer (Sartori, 2014). It is understandable why little data has been collected as some NDErs themselves think because they had a brief encounter with 'hell', then 'hell' will indeed be their final destination. Or, they may feel as though they were dealt this frightening experience on purpose as some form of punishment for being a 'bad person' (Bache, 1994, as cited in Bush, 2002). It was even claimed by Rommer (2002) that unpleasant NDEs (54% of the study's participants) were as a result of suicide attempts. It is important to note there is no empirical evidence linking personal characteristics (such as moral behaviours) to the kind of NDE (i.e., pleasant or unpleasant) an individual will have (Sartori, 2014).

**The turnaround.** The turnaround is often seen as a renewed energy to turn one's life around for the better and seek a new direction. These people often view their NDE as a warning and that they have been given a chance to redeem themselves. Although in general NDErs do not become more religious, this type of redemption after a frightening experience can be sought through religion as a means to turn their life around and be eligible to enter into 'heaven' when it is their time (Bush, 2002). Individuals often feel as

though they have become less judgemental and have an increased love of life as well as a heightened morality (Sartori, 2014).

**Reductionism.** This response is often one of denial. An individual may seek reasons to diminish the existence of their NDE and ‘explain it away’. They may seek explanation of their experience through means of chemical, or physical and ‘scientific explanations’. The experience for the individual does not fit into a ‘safe category’, and therefore must be rejected (Bush, 2002). For example, people may wish to believe they were simply hallucinating, or that the experience was due to a lack of oxygen to the brain, or a number of other reactions (Griffith, 2009).

**The long haul.** Some people struggle to come to terms with their experience and have an ongoing battle years later. They may experience an intense increased fear of death that leads to other disorders such as depression and anxiety. Individuals in for the long haul often seek an intellectual and emotionally grounding explication, and work very hard to make sense of their NDE (Bush, 2002). Individuals who experience this as an aftereffect of their experience are the most likely to seek some form of therapy (Griffith, 2009).

## 1.6 Empirically Measuring NDE Aftereffects

A large amount of literature over the past four decades has accumulated, attesting to the frequency of the NDE aftereffects described in the previous section, particularly the positive aftereffects. While the catalyst for researching aftereffects was initially provided by Moody in his book, subsequent studies were often informed by anecdotal and retrospective claims of those who had NDEs (Noyes et al., 2009), suggesting the NDE had a profoundly transformative effect on their lives, which included many of the aftereffects described above.

Although Noyes (1980) was the first to undertake a systematic investigation of NDE aftereffects by soliciting written accounts from NDErs, the first real attempt to empirically quantify these changes was developed by Kenneth Ring (Flynn, 1982). He initially created a scale termed the Life Changes Questionnaire (LCQ), which was eventually renamed the Life Changes Inventory (LCI). The original scale, first published in a 1990 article (Ring & Rosing, 1980), included 50 items that assessed nine personal value domains, including: appreciation for life, self-acceptance, concern for others, concern for impressing others, materialism, quest for meaning, spirituality, religiousness, and concern with social/planetary

issues. This scale was subsequently used to assess life changes in NDErs, as well as life changes resulting from spiritual and transpersonal experiences, in non-NDEr samples (e.g., Palmer & Braud, 2002).

While the original LCI appeared an appropriate measure of NDE aftereffects, qualitative studies continued to reveal a variety of other important aftereffects precipitated by NDEs. Consequently, Greyson and Ring (2004) initiated a revision of the original LCI; which included developing more defined and relevant response categories, as well as grouping the individual items of the LCI into value clusters that more accurately reflected the commonly identified aftereffects reported by NDErs. The result of this revision was the Life Changes Inventory-Revised (LCI-R; Greyson & Ring, 2004), which comprises 50 items, categorised into the value clusters of: appreciation for life, self-acceptance, concern for others, concern with worldly achievement, concern with social/planetary values, quest for meaning/sense of purpose, spirituality, religiousness, and appreciation for death. To date, the LCI-R has been used widely to assess NDE aftereffects, yet documentation of the measure's psychometric properties is lacking (Noyes et al., 2009). However, a recent study of NDEs in military personnel (e.g., Goza, Holden, & Kinsey, 2014) revealed adequate Cronbach's alphas, suggesting the measure has good internal consistency. Noyes et al. (2009) have stated the LCI-R should continue to be used as a means for standardizing research into NDE aftereffects, and where possible should be supplemented by other measures of change or transformation.

### **1.7 Relationships between content and aftereffects of Near-Death Experiences**

While there is a vast amount of research dedicated to the aftereffects of NDEs and a systematic means for measuring such aftereffects exists (i.e., LCI-R), less is known about the specific process by which these aftereffects occur or why they occur. What is it about NDEs that is so meaningful and deep that it can completely change a person's life in a matter of minutes? Noyes and colleagues (2009) have suggested a variety of factors may influence aftereffects, including those occurring prior to, during, and after the NDE. Pre-NDE factors include individual-level variables, such as culture, religious orientation, and personality. Because of difficulty in predicting who will have an NDE and when, and given recollection of the NDE is typically retrospective, assessing pre-NDE factors in an objective manner is challenging. Post-NDE factors include interpretation of the NDE and support of others to disclosure. However, because NDEs are believed to be under-reported (Zingrone & Alvarado,

2009), and when they are reported it is not always to significant others who have a continued presence in the NDErs life (Insinger, 1991), assessing post-NDE factors is also challenging. NDE-related factors include depth of the NDE (as measured by the NDES), circumstance of the NDE, and features of the NDE.

Some theoretical propositions have been proposed and empirical research conducted, attempting to link specific NDE-related factors to certain aftereffects. Among the theoretical propositions, the most notable has been NDE researchers' attributing the loss of the fear of death and a new or strengthened belief in the afterlife, to experiencing disembodiment or an OBE during an NDE. Both Moody (1975) and Ring (1984) suggest disembodiment or the perception one can exist without a physical body, facilitate NDErs to construct a new model of death that involves transition into another state of being, rather than annihilation. This notion of transition then reduces the fear of death, and strengthens afterlife beliefs. Tassell-Matamua and Lindsay (in press) recently extended these propositions, hypothesising it is a combination of NDE features (including seeing the light, meeting deceased others, positive affect, and disembodiment) that facilitate the loss of the fear of death. Circumstance of the NDE, and in particular what facilitated the NDE (i.e., unexpected accident versus anticipated illness) or whether the person believed they were close to death or not during their NDE, have also been proposed as influencing aftereffects (Greyson, 1993). This has been partially supported by Greyson and Stevenson (1980) who found increased changes among NDErs who believed they were dying during their NDE, than those who did not believe they were dying.

Empirical research has supported NDE depth as a potential facilitator of change in NDErs. A study by Groth-Marnat and Summers (1998) looked into the content of a person's NDE to find out what spurred them to change. Using the LCQ, they compared the aftereffects of patients who had come close to death without having an NDE, to those who came close to death and reported an NDE as categorised by the Greyson's NDES. Results revealed a significant positive correlation between the LCQ and NDES of .43, suggesting participants who reported an NDE had greater and more intense changes, than those who did not experience an NDE. The authors suggested this correlation signifies it is the actual NDE itself, rather than simply coming close to death, which is fundamental in facilitating life changes. This has since been supported by numerous studies showing the frequency and extent of change is greater in NDErs than non-NDErs (e.g., van Lommel et al., 2001; Groth-Marnat & Summers, 1998). Supporting the link between NDE depth and specific aftereffects,

McLaughlin and Malony (1984) found a similarly moderate positive correlation (.46) between NDE depth and changes to the value given to religion.

Beyond these studies and theoretical propositions, few attempts have been made to link specific aspects of the NDE (including features, depth, and circumstance) to certain aftereffects (Noyes et al., 2009). Indeed, Tassell-Matamua (2013) recently echoed this sentiment, noting researchers have failed to identify the actual content of the NDE leading to the commonly described changes. While a large literature attests to the profound aftereffects of NDEs, less is known about how and why they occur, and what aspects of the NDE itself facilitate or contribute to this. Given well-established and validated measures are available to assess NDEs (i.e., the NDES) and NDE aftereffects (i.e., LCI-R), investigating the influence of NDE-specific factors on aftereffects, is achievable. However, Tassell-Matamua (2013) states any investigation of the aftereffects may also need to move beyond quantitative assessment and employ qualitative methods that allow deeper explication of the relationship between NDEs and aftereffects.

## **1.8 Research Aims**

The current study will contribute to the current literature on NDEs and provide detail of what aspects of the NDE are associated with aftereffects. As mentioned earlier, simply having a brush with death does promote change, but to a lesser degree than those who experience an NDE. Perhaps it is in the content, circumstance or depth of their NDE that has such a long lasting impression on NDErs. Therefore, the overall aim of the present study is to:

1. Investigate the relationship between NDE-related factors and NDE aftereffects

This aim will be addressed by investigating:

2. The relationship between NDE depth and NDE aftereffects.
3. The relationship between NDE circumstance and NDE aftereffects.
4. The relationship between NDE features and NDE aftereffects.

## CHAPTER 2:

### Quantitative Method

A mixed-methodology, of a quantitative questionnaire and qualitative semi-structured interviews, was employed to collect data for the present study. This chapter firstly outlines the quantitative methodology, followed by the qualitative methodology in chapter 3; both of which include participants, procedures, and measures used.

#### 2.1 Participants

A total of 135 participants completed the online questionnaire. Of this, 85 specified sex, which included 53 (62%) women and 32 (38%) men. Participants ranged in age from 31-97 years ( $M = 58$ ,  $SD=12.5$ ). The majority were born in New Zealand (87%), with minorities born in the United Kingdom (6%), Australia (3%), Asia (3%), and Europe (1%). Most participants (73%) identified as New Zealand European/Pākehā, followed by European (14%), New Zealand Māori (7%), and Pacific Island (1%). All participants were resident in Aotearoa New Zealand at the time of completing the questionnaire. The majority of NDEs experienced occurred in hospital (37.9%), while close to death/dying (61.4%), and in the evening (58.3%).

At the time of questionnaire completion a tertiary certificate or diploma was the most common education level (38%) specified by participants, followed by high school qualification (16%), postgraduate qualification (15%), less than or did not complete high school (11%), Bachelor's degree (9%), Other (7%), and Doctoral degree (3%). Of the sample, the most common occupations described were retirement (22%), various forms of research (6%), and unemployed due mostly to full time parenting/grand parenting (5%).

#### 2.2 Procedure

The study was granted ethical approval by the Massey University Human Ethics Committee (14/33). Individuals who were over the age of 21 years and self-identified as having a NDE at some stage in their life were eligible to take part in the study. Participant recruitment occurred via self-selection. Advertisements placed in the Manawatu Standard, The Dominion Post, and The Press were used to invite participants to contact the researcher by email. Once participants had responded via email or phone to the advertisement, they were sent an online link to the survey or mailed a hardcopy if they requested it. Participants were



presented with an information sheet (see Appendix A), which outlined what an NDE is, the conditions of their participation, and their rights as participants. For example, participants reserved the right to answer as many or as few questions as they wished and could withdraw from completion of the questionnaire at any time. Participants also had the right to remain anonymous and to have their identity protected if they chose to make direct contact with the researcher. In the online version, participants had to indicate their consent to participate under these conditions, before proceeding to the research questionnaire (see Appendix B). Participants completing hard-copy versions of the questionnaire completed a consent form prior to questionnaire completion.

### **2.3 Measures**

The materials used in the study are described below. They assessed the depth of the NDE, in addition to life changes that may be an aftereffect of an NDE. Where requested, hard copies of the questionnaire were also available. Out of six questionnaires sent out, one participant returned the questionnaire completed. The hard copy questionnaires were identical to the online version of the questionnaire.

**The Near-Death Experience Scale (NDES).** NDEs were assessed using the Greyson NDE scale (NDES) (Greyson, 1983). This scale is a standardized 16 point questionnaire used to assess the four core components of the NDE; cognitive, affective, transcendental, and paranormal (Greyson, 1983). An example item assessing the cognitive component of NDEs is “Did time seem to speed up?”. Response options of this specific question included: (2) everything seemed to be happening all at once, (1) time seemed to go faster than usual or (0) neither. Response options to the other items are worded to reflect the question being asked, but identically scored from 0-2. Responses to all items are summed to give a total score. Scores of 7 or higher are indicative of an NDE, and higher scores indicate greater “depth” of the experience; which refers to a greater number of features being present in the NDE. According to Greyson (1983), the scale has high internal consistency, split-half reliability, and test-retest reliability. Recent data indicate Cronbach’s alphas of .75, .86, .66, and .76 for the cognitive, affective, paranormal, and transcendental subscales, respectively (e.g., Christian & Holden, 2012), and .82 for the entire scale (e.g., Tassell-Matamua & Murray, 2014).

**Life Changes Inventory-Revised (LCI-R).** The Life Changes Inventory-Revised (Greyson & Ring, 2004) consists of 50 items regarding whether and to what degree



participants felt their lives had changed after their NDE. Example items include: “Since my NDE, my desire to help others has ...”; and “Since my NDE, my feelings of self-worth have...”. Response options for these (and all other items) include a 5-point Likert-type scale of: “strongly increased”, “increased somewhat”, “not changed”, “decreased somewhat”, or “strongly decreased”. Participants were asked to indicate next to each statement the degree to which they felt they had changed since their NDE, by placing a number 1-5 next to each statement, where 1 represented their lives had “strongly increased”, and 5 represented their lives had “strongly decreased” for that particular item.

The scoring of the LCI-R can be somewhat complex as many levels and separate domains can be quantified. For example, an absolute change score can be calculated to reflect the global effect of the NDE. The absolute change score is the mean of the absolute values of the 50 items. Scores for nine value clusters can also be measured. These nine values represent common domains of transformation following an NDE. They are: Appreciation for life (4 items), self-acceptance (3 items), concern for others (10 items), concern with worldly achievement (7 items), concern with social/planetary values (5 items), quest for meaning/ sense of purpose (4 items), spirituality (5 items), religiousness (4 items), appreciation of death (3 items). A further 5 items, not included in these clusters, were included as they appeared to be common effects of NDEs. For example, one of the items included was: “Since my NDE, my interest in psychic phenomena has...”.

The most recent Cronbachs alpha reported for the total scale was 0.96, which shows high interrelatedness of the item responses (e.g., Goza, Holden, & Kinsey, 2014). Cronbachs alpha scores were also computed for the nine clusters mentioned above. They were: appreciation for Life (0.75), self-acceptance (0.78), Concern for Others (0.91), Worldly Achievement (0.72), Quest for Meaning (0.81), Spirituality (0.91), and Religiousness (0.94). Two value clusters yielded alphas below the acceptable level: Social Planetary Values (0.50) and Appreciation of Death (0.02). The study by Goza et al. (2014) found that an acceptable Cronbach alpha for social planetary values was achieved by removing items 33 and 35; this gave a Cronbach’s alpha of 0.80 for social planetary values. However, no method to achieve an acceptable Cronbachs alpha for appreciation of death was identified. Thus, the authors suggested that future researchers simply calculate the overall global change score as a consistent and reliable measure. The current study therefore calculated the global change scores by averaging the total score across all 50 items. Lower scores were indicative of greater life change since an individual’s NDE.

**The Positive and Negative Affect Schedule (PANAS).** The PANAS is brief and easy to administer with only two 10-item scales to measure positive and negative affect. Participants were asked to rate to which extent they had felt each given emotion either at the moment or over the past week. For example, one of the positive emotions listed was “interested” and a negative emotion was “irritable”. Participants placed a number from a 5-point Likert scale next to the emotion to indicate the degree they felt that way from 1 (very slightly or not at all) through to 5 (extremely). The positive emotions and negative emotions scores were added separately. A higher score on either the positive or negative affect scales was indicative of the individual’s higher positive or negative affect at the time of questionnaire completion.

A number of mood scales have been developed to measure both positive and negative affect. However, these have often showed low reliability and poor validity. The Positive and Negative Affect Schedule (PANAS) was designed to fill this gap as the scales are shown to be highly internally consistent, largely uncorrelated, and stable at appropriate levels over a 2-month time period at measuring general distress and depression (Watson, Clark, & Tellegen, 1988). For example, Watson, Clark, and Tellegen (1988) found for the Positive Affect Scale, the Cronbach alpha coefficient was 0.86 to 0.90; for the Negative Affect Scale, 0.84 to 0.87. Over an 8-week time period, the test-retest correlations were 0.47-0.68 for the PA and 0.39-0.71 for the NA. The PANAS has strong reported validity with such measures as general distress and dysfunction, depression, and state anxiety (Watson, Clark & Tellegen, 1988).

**Meaning in Life Questionnaire (MLQ).** This 10-item questionnaire is designed to measure two dimensions of meaning in life: the first is presence of meaning (how much respondents feel their lives have meaning; as measured by items 1,4,5,6, and 9. Item 9 is reverse coded), and the second is search for meaning (how much respondents strive to find meaning and understanding in their lives; as measured by items 2,3,7, 8, and 10). Participants were asked to rate each item on a 7-point Likert scale, ranging from 1 to 7, according to how much they agreed with the statement. For example “I understand my life’s meaning” represents presence of meaning, and “I am looking for something that makes my life feel meaningful” represents the search for meaning. The items were summed to give an overall total or totals for each subscale (item 9 was reverse coded). A higher score on either scale represented the degree of importance the presence of or search for meaning in life was to that person at the time of questionnaire completion. Previous research indicates good internal

consistency for both the presence (.86) and search (.87) subscales (e.g., Steger, Frazier, Oishi & Kaler, 2006).

**The Short Schwartz Value Survey (SSVS).** The Short Schwartz Value Survey (SSVS) measured the importance of 10 basic values to participants, including: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, conformity, tradition, and security. A brief description of each value was provided, such as Power (social power, authority, wealth), and Achievement (success, capability, ambition, influence on people and events). Participants were asked to rate each of these values on a 9-point Likert scale from 0 (opposed to my principals) through to 8 (of supreme importance) by placing the corresponding number next to each value. These values assessed two fundamental human problems; conservation versus openness to change; and self-transcendence versus self-enhancement. Conservation versus openness to change refers to the motivation to preserve the status quo and the certainty that conformity to norms provides (high conservation), versus the motivation to follow one's own emotional and intellectual interests (low conservation, or seen as high on openness to change). The other problem refers to the conflict between concern for the welfare of other people (high self-transcendence), and concern for individual outcomes and personal interests (low self-transcendence or seen as high on self-enhancement) (Lindeman & Verkasalo, 2005).

The values conformity, tradition and security were averaged to give an overall score for conservation. A total score for openness to change was measured by averaging scores from stimulation and self-direction. An average of scores from universalism and benevolence created a total score for self-transcendence. Lastly, a score for self enhancement was created by averaging scores from power, achievement and hedonism. These total scores revealed which human problem was most important to the participant and could therefore be compared against the other participants for noticeable differences and similarities. Good reliability coefficients have been found for the Openness to Change dimension and the Self-Enhancement dimension with .78 and .72 respectively, and .75 and .69 for Conservation and Self-transcendence respectively using the General Reliability Coefficient (GRC) (e.g., Lindeman & Verkasalo, 2005).

**Satisfaction With Life Scale (SWLS).** The Satisfaction With Life Scale (SWLS) is a short 5-item scale that measures the cognitive judgments of satisfaction with one's life as a whole, rather than specific areas of an individual's life. Participants rated on a 7 -point Likert

scale, the degree they agreed or disagreed with each statement. For example, the item “In most ways my life is close to ideal” had the possible response options of 1 (strongly disagree) through to a 7 (strongly agree). Scores for each item were summed to create a total score, where higher scores corresponded to greater life satisfaction (Diener, Emmons, Larsen & Griffin, 1985). The SWLS is a very common measure of general life satisfaction and has been repeatedly validated, with reported alphas of .83, .85, and .87 (e.g., Diener et al., 1985; Pavot, Diener, Colvin, & Sandvik, 1991).

**Spiritual Index of Well Being (SIWB).** The Spiritual Index of Well Being (SIWB) defines spirituality as a sense of meaning or purpose from a transcendent source. It is a 12-item instrument that measures an individual’s perceptions of their spiritual quality of life. The scale is divided into two subscales: (1) self-efficacy subscale and (2) life-scheme subscale. Participants were asked to rate on a 5-point Likert scale the degree to which they agreed or disagreed with a statement. For example, to measure self-efficacy participants were asked the degree to which they agreed or disagreed with the following statement: “There is not much I can do to help myself”. Response options were either 1 (strongly agree) through to 5 (strongly disagree). Using the same scale, life-scheme was measured using statements such as “I haven’t found my life’s purpose yet”. Scores were summed and kept on a continuous basis to create an overall spiritual wellbeing score. Higher scores were indicative of greater spiritual well being. However, differences between subscales were also assessed between summed scores of items 1-6 (self-efficacy) and items 7-12 (life scheme). The SIWB showed good reliability results for the self-efficacy subscale and for the life scheme subscale with alphas of .86 and .89 respectively. The entire scale also showed good reliability with an alpha of .91 (e.g., Daaleman & Frey, 2004).

**Additional questions.** Additional items were also included to clarify circumstantial information at the time of the participants NDE. For example “Where were you when your NDE occurred (e.g., home, hospital, workplace)?” Another example item is “What was the approximate date/time of your NDE?” Responses to the time their NDE occurred varied greatly, which required responses to be split into AM (occurred between 12 midnight and 11:59 a.m.) and PM (occurred between 12 noon and 11:59 p.m.) before conducting analyses. With reference to the date their NDE occurred, these were recoded into specific time periods based on how long ago the experience occurred (e.g., 1-10 years ago, 11-20 years ago, and so forth).

Seven of these additional questions were derived from Tassell-Matamua and Murray's (2014) study of NDEs, and focused on potential predisposing factors that could have contributed or affected the individuals NDE. For example, participants were asked "At the time of your NDE, had you ever been diagnosed with a mental illness?" Other questions were phrased similarly but referred to history of childhood trauma, sleep disorder, memory difficulties, drug addiction, brain trauma, and religious affiliation. Participants responded with either *yes* or *no* to each question. Finally, once the additional questions section was complete, participants were given the option to write any additional information and/or feedback in a text box provided.

## CHAPTER 3:

### Qualitative Method

#### 3.1 Participants

Initially, 30 individuals expressed their interest to take part in an interview. When contacted, 15 responded with their continued interest, however only six were able to travel to Massey University in Palmerston North for an interview. Of the six able to travel, four were able to travel within the specified time frame (Monday 1<sup>st</sup> - Friday 5<sup>th</sup> September, 2014), which then made up the four interview participants for this study. Participants ranged in age from 47-70 years old. The gender of participants was evenly split with 50% female (2) and 50% male (2). At the time of interview, the occupation of participants included: work in politics, part time work in customer service, retired, and engaged in research. Two participants were limited in quantity of work, and/or received financial assistance due to mild brain injuries sustained during their accidents.

An additional 28 participants also submitted written accounts directly to the researcher via email or mail, as a means of sharing their experience. Those who submitted information this way were later contacted for permission to analyse their written accounts for publication. Those who participated in the face-to-face interview and/or submitted a written account may have also completed the online questionnaire.

#### 3.2 Procedure

The interviews took place in a private interview room in the Psychology building, at the Manawatū campus of Massey University. Interviews were conducted between 9am and 3pm, as was mutually convenient over the course of a week between Monday 1<sup>st</sup> September and Friday 5<sup>th</sup> September, 2014. The interviews were approximately one hour long. Before the interview commenced, participants were explained their rights as a participant and given an information sheet to read (see Appendix C). Upon agreement to the terms in the information sheet, participants signed a consent form (see Appendix D) and transcript release form (see Appendix E). They were reminded the interview would be sound recorded, and asked if they would like to receive a written transcription of the recorded interview once complete. At the conclusion of the interview, participants were asked if they had any questions. They were reminded their participation was greatly appreciated, and received a \$20 fuel voucher as compensation for their time and/or travel.

The interviews were later transcribed for further qualitative analyses. Thematic analysis (TA) was used to identify and analyse common themes throughout the interviews and written accounts (Braun & Clarke, 2006). The aim was to first identify if there were any common themes amongst the content of the NDE and then the aftereffects. After this, patterns between the content and aftereffects were identified to see whether the research question of whether NDE content influenced the reported aftereffects could be answered. Specifically, a *theoretical* thematic analysis was used in which the aim was to identify themes in the data relevant to answering the research question. Therefore, themes that would aid in identifying what life changes occurred after an NDE and whether there was any specific relationship to the content of the NDE were further analysed.

A *semantic* thematic analysis was also employed to organize the interview data into these appropriate themes to show commonalities or differences amongst the data. This analysis provided a description of the data and showed patterns in certain aspects of the data. No attempt to interpret ideas or make assumptions from the data was made (Braun & Clarke, 2006).

Using the phases suggested by Braun and Clarke (2006), analysis began with the creation of initial codes and their relevance to data extracts. These initial codes were drawn from the research question, and the data extracts were filed under the appropriate code. The organization of these extracts created ‘theme-piles’ for further analysis. Each theme pile was analyzed again to merge or link any related or similar themes. Initially, six themes were created which were: circumstance around the NDE, content of the NDE, feelings during NDE, aftereffects of NDE, reactions of others to the NDE, and finally, identified relationship between NDE content and aftereffects. There were many sub-themes within each of these themes, which were later described in detail in the results chapter.

A thematic map was created to identify links and relationships between the six themes to assess whether they could be further combined and to assess their relation to the research question. As a result of this, three main themes were identified, along with several sub themes:

1. Content of NDE
  - a. Paranormal subtheme
  - b. Affective subtheme

- c. Transcendental subtheme
  - d. Cognitive subtheme
2. Aftereffects of NDE
- a. Loss of fear of death
  - b. Belief in the afterlife
  - c. Changes in religious perspectives and spirituality
  - d. Changes in attitudes and values
  - e. Others reactions to disclosure
  - f. Psychic abilities

### **3.3 Materials**

The interviewees were asked a series of questions designed by the researcher about their NDE in general, and also to draw specific attention to the participant's content of their NDE and the aftereffects. For example, to assess the content of the NDE, participants were asked: "Can you tell me about your experience?" They were then asked to "Tell me about the content of your experience in detail". To assess the aftereffects of the NDE, participants were asked: "Has your experience had a significant impact on your life? If so, how?" Also out of interest, participants were asked about their perceived relationship between their NDE and life changes. For example, "Do you feel as though any particular part of your NDE contributed to your changes?" A full copy of the interview schedule can be found in Appendix F.



## CHAPTER 4:

### Quantitative Results

This chapter presents quantitative results of the research. The Statistical Package for the Social Sciences (SPSS) was used to analyse the data. An overview of the developed measures, including means, standard deviations, and alphas, and correlations between the measures is provided first. Because this research was interested in examining the relationship between NDEs and typical aftereffects, it was important to determine whether any demographic variables were related to NDE aftereffects. Therefore, an overview of participant demographics is presented, along with significant findings between NDE aftereffects and demographics. To enable the research to be placed in context to other NDE studies, an overview of NDE characteristics is provided, including frequency data related to NDE depth, and date, time, place and circumstance of the NDE. The main findings relating to the research aim concerning associations between NDEs and aftereffects, are then presented. Throughout this chapter, the main focus is on describing results that are significant, rather than describing each individual result. In some cases however, non-significant results are mentioned or provided in tables, where deemed important to better explicate the overall aim of the research.

#### 4.1 Overview of Developed Measures

Table 4.1 provides an overview of the means, standard deviations and alpha reliabilities across all developed measures. As shown, the mean score on the Near-Death Experience Scale (NDES) reflects an average of a ‘subtle’ NDE across the sample ( $M=12.74$ ,  $SD=6.35$ ). Higher scores on the NDES were recorded for the Affective subscale ( $M=4.07$ ,  $SD=2.46$ ), while lowest scores were recorded on the Cognitive subscale ( $M=2.64$ ,  $SD=2.03$ ). The total mean score on the Life Changes Inventory ( $M=2.41$ ,  $SD=0.39$ ) indicated participants had ‘somewhat increased’ changes across the clusters since their NDE (an  $M=1$  would indicate ‘strongly increased’, while an  $M=5$  would indicate ‘strongly decreased’). Highest scores were evident for the LCI-Worldly Achievement ( $M=19.74$ ,  $SD=3.90$ ) and LCI-Concern for Others ( $M=16.08$ ,  $SD=5.17$ ) subscales. Participants also showed higher Positive Affect ( $M=31.47$ ,  $SD=9.97$ , compared with Negative Affect ( $M=14.28$ ,  $SD=6.25$ ), as

Table 4.1

*Means (M), Standard Deviations (SD), and Alpha for All Developed Measures*

Developed Measure	Total and/or subscale	N	M	SD	$\alpha$
Near-Death Experience Scale (NDES)	Total	96	12.73	6.34	.80
	Cognitive	99	2.63	2.03	.56
	Affective	97	4.07	2.46	.75
	Paranormal	100	2.79	1.81	.54
Life Change Inventory (LCI)	Transcendence	99	3.34	2.45	.67
	Total	83	2.41	0.39	.91
	Appreciation for life	97	6.20	2.06	.73
	Concern for others	93	16.08	5.16	.92 (item 1 missing)
Positive and Negative Affect Scale (PANAS)	Self- Acceptance	97	4.94	1.70	.76
	Concern for worldly achievement	94	19.73	3.90	.84
	Concern with social/ planetary values	98	11.04	2.32	.65
	Quest for meaning/ sense of purpose	97	6.08	2.37	.79
	Spirituality	96	8.50	3.21	.84
	Religiousness	98	9.66	2.90	.86
	Appreciation of death	99	4.35	1.52	.45
	Positive affect	96	31.46	9.97	.93
	Negative affect	93	14.27	6.24	.92
	Total	99	23.39	7.39	.90
Satisfaction With Life Scale (SWLS)	Total	96	49.76	8.57	.92
	Self-efficacy	97	25.19	4.04	.85
	Life scheme	97	24.54	5.23	.89
Spiritual Index of Well-Being (SIWB)	Total	88	36.85	7.36	.64
	Presence of meaning	89	21.20	5.12	.92 (item 9 missing)
	Search for meaning	91	15.60	7.16	.92 (item 10 missing)
Meaning in Life Questionnaire (MLQ)	Total	96	5.17	1.75	.83
	Conservation	97	5.38	1.65	.79
	Openness to change	97	6.59	1.46	.69
	Self-transcendence	97	3.19	1.62	.85
Short Schwartz Value Survey (SSVS)	Self-enhancement	97			.75

measured on the PANAS. Life satisfaction across the sample was also high ( $M=23.39$ ,  $SD=7.40$ ) according to the SWLS, as was spiritual well-being ( $M=49.76$ ,  $SD=8.57$ ) according to the SIWB. Overall scores on the Presence of Meaning subscale were higher ( $M=21.20$ ,  $SD=5.13$ ) than the Search for Meaning subscale ( $M=15.60$ ,  $SD=7.16$ ) on the MLQ. With regard to values measured on the SSVS, participants scored highest on the Self-Transcendence ( $M=6.59$ ,  $SD=1.47$ ), Openness to Change ( $M=5.39$ ,  $SD=1.65$ ), and Conservation ( $M=5.18$ ,  $SD=1.76$ ) subscales. Lowest scores were recorded on the Self-Enhancement subscale ( $M=3.20$ ,  $SD=1.63$ ).

## 4.2 Participant Demographics

As indicated in Chapter 2: Methodology, the sample comprised a total of 135 participants. Of this, 85 specified sex, which included 53 (62%) women and 32 (38%) men. Participants ranged in age from 31-97 years ( $M= 58$ ,  $SD=12.5$ ).

Demographic factors may be implicated in the typical aftereffects of an NDE, so *t*-tests were conducted to determine whether there were any significant differences across the established measures according to gender. Shapiro-Wilk revealed a violation of the normality assumption on several measures. However, because *t*-tests are considered robust against small to moderate violations when a sample is reasonably large ( $N>40$ ), *t*-tests were considered appropriate (Tabachnick & Fidell, 2007a). Results revealed significantly higher LCI-Total scores for males ( $M=2.56$ ,  $SD=.38$ ) compared to females ( $M=2.34$ ,  $SD=.41$ ),  $t(68)=2.21$ ,  $p<.05$ , two tailed,  $d=0.54$ . On the LCI-Concern with Social/Planetary Values subscale, females ( $M=10.56$ ,  $SD=2.45$ ) scored lower than males ( $M=11.81$ ,  $SD=1.56$ ),  $t(81)=2.57$ ,  $p<.05$ ,  $d=0.57$ . On the LCI-Appreciation for Death subscale, changes were greater for males ( $M=4.82$ ,  $SD=1.71$ ) than females ( $M=4.13$ ,  $SD=1.46$ ),  $t(81)= 1.96$ ,  $p<.05$ ,  $d=0.43$ .

To determine whether there were any significant differences across the developed measures according to ethnicity, education level, occupation, and age, one-way between groups ANOVAs were considered most appropriate. There were no significant differences according to education level or occupation. However, there were significant differences according to ethnicity on the LCI-Concern for Worldly Achievement,  $F(3, 81)=3.11$ ,  $p<.05$ ; LCI-Religiousness,  $F(3, 85)=2.62$ ,  $p<.05$ ; and SSVS-Self-Enhancement,  $F(3, 87)=3.03$ ,  $p<.05$ . Tukey's Post-Hoc tests revealed participants who identified as New Zealand European/Pākehā scored significantly higher on LCI-Concern for Worldly Achievement than those identifying as 'other'. New Zealand Māori participants scored significantly higher on

LCI-Religiousness compared to those identifying as ‘other’. On the SSVS-Self-Enhancement, participants who identified as ‘other’ scored significantly higher than those who identified as New Zealand European/Pākehā.

Shapiro-Wilks statistics revealed a violation of normality assumptions for age, so Kruskal Wallis one-way ANOVAs for non-parametric data were performed. Significant differences between groups were found between groups for Negative Affect,  $H(\text{corrected for ties})=15.62$ ,  $df=4$ ,  $N=88$ ,  $p<.01$ ; SIWB-Total,  $H(\text{corrected for ties})=10.63$ ,  $df=4$ ,  $N=88$ ,  $p<.05$ ; and SIWB-Life Scheme subscale,  $H(\text{corrected for ties})=11.20$ ,  $df=4$ ,  $N=88$ ,  $p<.05$ ). A series of Mann-Whitney U tests were performed to see where the differences lay on each variable, and are provided in Table 4.2. Significant differences were found on the PANAS-Negative Affect scale between several combinations of age groups, with younger participants evidencing comparatively higher mean rank scores. Older participants evidenced comparatively significantly higher mean scores on SIWB-Total. On the SIWB-Life Scheme subscale, those aged between 60-69 years had significantly higher mean rank scores compared to those aged between 40-49 years, and above 70 years.

Table 4.2

*Mann-Whitney U Results Showing Significant Differences According to Age on PANASNegative, SIWB-Total, and SIWB-Life Scheme*

Variable	Age Groups	N	Mean Rank	U	z	p
Negative Affect	30-39 years	4	21.00	18.00	-2.15	.05
	60-69 years	23	12.78			
	30-39 years	4	14.00	10.00	-1.94	.05
	70+ years	1	8.21			
	40-49 years	19	28.42	87.00	-4.32	.001
	60-69 years	23	15.78			
	40-49 years	19	21.03	56.50	-2.81	.01
	70+ years	14	11.54			
50-59 years	25	28.20	195.00	-2.04	.05	
60-69 years	23	20.48				
SIWB-Total	40-49 years	19	17.00	133.00	-2.33	.05
	60-69 years	24	25.96			
	50-59 years	25	19.80	170.00	-2.61	.01
	60-69 years	24	30.42			
SIWB-Life Scheme	40-49 years	20	17.05	131.00	-2.60	.01
	60-69 years	24	27.04			
	60-69 years	24	23.19	103.50	-2.24	.05
	70+ years	15	14.90			

### 4.3 Characteristics of Participant NDEs

Participants were divided into groups according to whether they had an NDE or not, and if they had an NDE, they were categorised into groups according to ‘depth’ of the experience, using the criteria stipulated by Khanna and Greyson (2013). Table 4.3 provides a summary of NDE group allocations based on participant’s scores on the NDES. Participants who gained a score below seven, were allocated to the non-NDE group. Participants who scored between seven and 14 were allocated to the subtle NDE group. Scores between 15 and 23 on the NDES were indicative of a deep NDE, and NDEs considered profound were those who scored 24 and over on the NDES. Most participants fell into the subtle NDE group (54%), followed by the Non-NDE group (22.5%), then the Deep NDE group (20%), and the least amount of participants experienced a Profound NDE (3.5%).

Table 4.3

*Depth of Participants NDE Based on NDES Score*

<b>NDE Depth (score range)</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Non-NDE (0-6)	11	8	19
Subtle NDE (7-14)	15	31	46
Deep NDE (15-23)	5	12	17
Profound NDE (24+)	1	2	3
<b>Total (N = 85)</b>	<b>32</b>	<b>53</b>	<b>85</b>

Frequency statistics were calculated for date of NDE, time of NDE, place of NDE and NDE circumstance are shown in Table 4.4. Most participants NDE occurred within the last 10 years (27.9%), followed by 11-20 years ago (18.3%), 21-30 years ago (18.3%), and more than 40 years ago (18.3%). The least amount of participant NDEs occurred between 31-40 years ago (17.3%). Most NDEs occurred in the afternoon or evening (PM) (58.3%), while 41.7% occurred during the morning. Most NDEs took place while the participant was in hospital (37.9%), followed by ‘other’ (35.9%), at home (24.3%), and only two participants recorded experiencing their NDE at work (1.9%). Examples of locations where participants selected ‘other’ included: the beach, rivers, (and other areas near water), in an ambulance or other vehicle (during an accident). Most participants believed their NDE occurred while they were close to death and/or dying (36.9%), followed by ‘other’ (12.5%), and dead (17.8%).

Examples of where participants selected ‘other’ included: while feeling unwell, during pregnancy, during a perceived threat of death or exposure to death of a loved one.

Table 4.4

*Frequency Statistics for Time Since, Time of, Location, and Circumstance, of NDE*

Variable	Indicator	Frequency	Percentage
Years since NDE	1-10 years	29	27.9
	11-20 years	19	18.3
	21-30 years	19	18.3
	31-40 years	18	17.3
	41+ years	19	18.3
Time of NDE	AM	43	41.7
	PM	60	58.3
Location of NDE	Home	25	24.3
	Hospital	39	37.9
	Work	2	1.9
	Other	37	35.9
Circumstance of NDE	Close to death / Dying	62	61.4
	Dead	18	17.8
	Other (Please specify)	21	20.8

#### 4.4 Relationship between NDEs and Aftereffects

The aim of the research is to determine the relationship between NDEs and their aftereffects. Specifically, the research objective is to ascertain whether there are any specific aspects of the NDE that could be reliably linked to specific aftereffects. Therefore, a variety of statistical analyses were performed with a variety of combinations of variables, to assess this relationship. These are described below.

**Correlations between NDES and developed measures.** Pearson’s correlations between the NDES and each developed measure were considered appropriate. However, Shapiro-Wilk tests showed a violation of normality assumptions across the measures, so a Kendals tau-b was conducted.

As Table 4.5 shows, NDES Total scores had significantly negative associations with all the subscales of the LCI, except Religiousness, and the Concern for Worldly Achievement subscales (which had a significant positive association). These same significant negative associations were evident for most of the LCI subscales across each NDES subscale,

although there were slight differences in strength. The strongest associations were evident on the LCI-Appreciation for Death subscale, across all the NDES subscales.

Table 4.5

*Kendal's tau-B Correlation Matrix of Developed Measures Assessing Aftereffects against NDES-Total and All NDES-Subscales*

Developed Measure	NDES Total	NDES Cognitive	NDES Affective	NDES Paranormal	NDES Transcendence
<b>Life Changes Inventory (LCI-R)</b>					
<i>Total</i>	-.35**	-.31**	-.16	-.28**	-.25**
<i>Appreciation for Life</i>	-.31**	-.26**	-.18*	-.26**	-.23**
<i>Self Acceptance</i>	-.24**	-.18*	-.18*	-.13	-.25**
<i>Concern for Others</i>	-.33**	-.26**	-.15	-.29**	-.29**
<i>Concern for Worldly Achievement</i>	.16*	.07	.19*	.15*	.09
<i>Concern with Social/ Planetary Values</i>	-.22**	-.19*	-.01	-.26**	-.18*
<i>Quest for Meaning/Sense of Purpose</i>	-.32**	-.36**	-.19**	-.23**	-.21**
<i>Spirituality</i>	-.29**	-.25**	-.25**	-.17*	-.21**
<i>Religiousness</i>	-.04	-.01	-.07	-.01	-.07
<i>Appreciation of Death</i>	-.46**	-.36**	-.36**	-.32**	-.31**
<b>Positive and Negative Affect (PANAS)</b>					
<i>Positive Affect</i>	.27**	.21**	.09	.23**	.29**
<i>Negative Affect</i>	-.09	-.02	-.16*	-.02	-.04
<b>Satisfaction with Life (SWLS)</b>					
	.11	.05	.19*	-.06	.10
<b>Spiritual Well-Being (SIWB)</b>					
<i>Total</i>	.17*	.11	.10	.17*	.11
<i>Self-Efficacy</i>	.12	.04	.04	.14	.09
<i>Life Scheme</i>	.17*	.12	.15	.16*	.09
<b>Meaning in Life (MLQ)</b>					
<i>Total</i>	.14	.13	-.04	.14	.14
<i>Presence of Meaning</i>	.22**	.19*	.19*	.10	.13
<i>Search for Meaning</i>	.02	.06	-.13	.08	.06
<b>Schwartz Short Value Survey (SSVS)</b>					
<i>Conservation</i>	.09	.08	-.03	.05	.13
<i>Openness to Change</i>	.18*	.24**	.02	.17*	.11
<i>Self-Transcendence</i>	.33**	.28**	.12	.30**	.25**
<i>Self-Enhancement</i>	-.02	.08	-.05	-.04	.01

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed).

The PANAS-Positive Affect had a significantly positive association with the NDES-Total and the NDES-Cognitive, Paranormal, and Transcendental subscales, but not the Affective subscale. The only significant association for the PANAS-Negative Affect was with the NDES Affective subscale, and this was negative. The SWLS had a significant but weak association with the NDES-Affective subscale. The SIWB-Total and SIWB-Life Schemes subscale had significantly positive weak associations with the NDES-Total and NDES-Paranormal subscales. The MLQ-Total was not significantly associated with the NDES-Total or any of the NDES subscales. But the MLQ-Presence subscale had significantly positive, albeit weak, associations with NDES-Total, Cognitive, and Affective subscales. The NDES-Affective subscale was not associated with any of the SSVS subscales. However, significant positive associations were evidenced on the SSVS-Openness to Change and Self-Transcendence subscales, with the NDES-Total, Cognitive, Paranormal, and Transcendental subscales.

**ANOVAs between NDE characteristics and aftereffects.** A series of one-way ANOVAs were considered appropriate to test whether there were any significant differences on the developed measures according to location during NDE, date of NDE, circumstance of NDE, and the category of NDE (depth). For all variables, normality assumptions were slightly violated, so Kruskal Wallis one-way ANOVAs were performed for this non-parametric data.

For NDE location, significant differences were found on the MLQ-Total,  $H(\text{corrected for ties})=9.35$ ,  $df=3$ ,  $N=88$ ,  $p<.05$ . Mann-Whitney U tests revealed those who had their NDE in hospital ( $Mean Rank=27.54$ ,  $N=35$ ) scored significantly lower than those who had their NDE in “other” locations ( $Mean Rank=40.23$ ,  $N=31$ ).

For date of NDE, there were significant differences on the LCI-Total score,  $H(\text{corrected for ties})=11.88$ ,  $df=4$ ,  $N=38$ ,  $p<.05$ ; and the LCI-Appreciation for Death subscale,  $H(\text{corrected for ties})=9.76$ ,  $df=4$ ,  $N=37$ ,  $p<.05$ ). A series of Mann-Whitney U tests were performed in order to see where the differences lay on each variable, and these are presented in Table 4.6. As shown, significant differences occurred on the LCI-Total between NDEs that occurred 1-10 years ago and 21-30 years ago; 1-10 years ago and 41+ years ago - with those whose NDE occurred more recently showing higher mean scores. Differences also occurred between those whose NDE occurred 21-30 years ago and 31-40 years ago; and 31-40 years ago and 41+ years ago - with those who NDE occurred 31-40 years ago evidencing



higher mean scores. Significant differences for the LCI-Appreciation for Death subscale occurred for NDEs occurring 1-10 years ago and 11-20 years ago; 1-10 years ago and 21-30 years ago; and 1-10 years ago and 41+ years ago - with higher mean scores being evident for those whose NDE occurred within the past decade.

Table 4.6

*Mann-Whitney U Results Showing Significant Differences According to Date of NDE on LCITotal and LCI-Appreciation for Death*

Variable	Years Ago	N	Mean Rank	U	z	p
LCI-Total	1-10 years	22	22.00	77.00	-2.50	.01
	21-30 years	14	13.00			
	1-10 years	22	22.43	89.50	-2.34	.05
	41+ years	15	13.97			
	21-30 years	14	10.96	48.50	-2.64	.01
	31-40 years	16	19.47			
	31-40 years	16	19.38	66.00	-2.14	.05
	41+ years	15	12.40			
LCI-Appreciation for Death	1-10 years	26	26.19	164.00	-1.91	.05
	11-20 years	19	18.63			
	1-10 years	26	25.06	141.50	-1.98	.05
	21-30 years	17	17.32			
	1-10 years	26	27.12	114.00	-2.89	.05
	41+ years	18	15.83			

For NDE circumstance, significant differences were evident on the LCI-Appreciation for Death subscale,  $H(\text{corrected for ties})=6.99$ ,  $df=2$ ,  $N=97$ ,  $p<.05$ ; the SWLS-Total,  $H(\text{corrected for ties})=6.78$ ,  $df=2$ ,  $N=97$ ,  $p<.05$ ; the MLQ-Total,  $H(\text{corrected for ties})=8.16$ ,  $df=2$ ,  $N=87$ ,  $p<.05$ ; and the MLQ-Search for Meaning subscale,  $H(\text{corrected for ties})=6.26$ ,  $df=2$ ,  $N=89$ ,  $p<.05$ . A series of Mann-Whitney U tests were performed to see where the differences lay on each variable, and these are presented in Table 4.7. For the LCI-Appreciation for Death subscale, those who were close to death/dying had significantly higher means scores than those who were dead (lower scores are indicative of greater change). On the SWLS-Total participants who were close to death scored significantly lower than those who were either dead or indicated some 'other' circumstance. On the MLQ-Total, participants who were dead had significantly higher mean rank scores compared to those who indicated 'other'. Lastly, significantly lower mean scores were found on the MLQ-Search for

Meaning subscale for participants who indicated ‘other’, compared to those who were close to death/dying and dead.

Table 4.7

*Mann-Whitney U Results Showing Significant Differences According to Circumstance of NDE on LCI-Appreciation for Death, SWLS-Total, MLQ-Total, and MLQ-Search for Meaning*

Variable	Circumstance	N	Mean Rank	U	z	p
LCI-Appreciation for Death	Close to Death	60	42.42	305.00	-2.53	.01
	Dead	17	26.94			
SWLS	Close to Death	60	36.08	335.00	-2.15	.05
	Dead	17	49.29			
	Close to Death	60	37.60	426.00	-1.94	.05
	Other	20	49.20			
MLQ-Total	Dead	16	22.75	76.00	-2.53	.01
	Other	19	14.00			
MLQ-Search for Meaning	Close to Death	54	40.32	333.50	-2.26	.05
	Other	19	27.55			
	Dead	16	21.78	91.50	-2.01	.05
	Other	19	14.82			

For NDE depth, significant differences were found on the LCI-Total,  $H(\text{corrected for ties})=17.28$ ,  $df=3$ ,  $N=81$ ,  $p<.01$ ; LCI-Appreciation for Life,  $H(\text{corrected for ties})=9.75$ ,  $df=3$ ,  $N=93$ ,  $p<.05$ ; LCI-Concern for Others,  $H(\text{corrected for ties})=10.51$ ,  $df=3$ ,  $N=90$ ,  $p<.05$ ; LCI-Spirituality,  $H(\text{corrected for ties})=10.09$ ,  $df=3$ ,  $N=92$ ,  $p<.05$ ; and LCI-Appreciation for Death,  $H(\text{corrected for ties})=29.35$ ,  $df=3$ ,  $N=94$ ,  $p<.01$ ). Significant differences were also found on other scales, including the PANAS-Positive Affect,  $H(\text{corrected for ties})=14.48$ ,  $df=3$ ,  $N=91$ ,  $p<.01$ ; MLQ-Presence of Meaning,  $H(\text{corrected for ties})=13.01$ ,  $df=3$ ,  $N=85$ ,  $p<.01$ ; and SSVS-Transcendence,  $H(\text{corrected for ties})=12.22$ ,  $df=3$ ,  $N=93$ ,  $p<.01$ ). The results of the Mann Whitney U tests to determine where the significant differences were, are presented in Table 4.8. Across the LCI-Total and all LCI subscales, participants categorised with deeper NDEs (i.e., Deep and Profound) had significantly lower mean scores, than participants with subtle NDEs or without NDE (lower LCI scores indicate *greater* life changes). Participants categorised with deeper NDEs had significantly higher means scores on the PANAS-Positive Affect, MLQ-Presence of Meaning, and SSVS-Transcendence subscale, in comparison to participants with subtle or no NDEs.

Table 4.8

*Mann-Whitney U Results Showing Significant Differences According to NDE Depth Across Relevant Measures*

Variable	NDE Depth	N	Mean Rank	U	z	p	
LCI-Total	Non	12	21.42	61.00	-2.29	.05	
	Deep	20	13.55				
	Subtle	Deep	45	38.62	197.00	-3.59	.001
		Deep	20	20.35			
	Subtle	Deep	45	26.50	22.50	-2.47	.01
		Profound	4	8.13			
LCI-Appreciation for Life	Non	14	24.96	105.50	-2.05	.05	
	Deep	25	17.22				
	Non	Profound	14	10.89	8.50	-2.08	.05
		Profound	4	4.63			
	Subtle	Deep	50	42.40	405.00	-2.48	.01
		Deep	25	29.20			
LCI-Concern for Others	Non	13	24.00	78.00	-2.36	.01	
	Deep	23	15.39				
	Non	Profound	13	10.50	6.50	-2.21	.05
		Profound	4	4.13			
	Subtle	Deep	50	41.46	352.00	-2.65	.01
		Deep	23	27.30			
LCI-Quest for Meaning	Non	14	28.29	59.00	-3.42	.001	
	Deep	25	15.36				
	Non	Profound	14	10.82	9.50	-1.97	.05
		Profound	4	4.88			
	Subtle	Deep	51	44.15	349.50	-3.21	.001
		Deep	25	26.98			
LCI-Spirituality	Non	14	25.39	85.50	-2.52	.01	
	Deep	24	16.06				
	Subtle	Deep	50	41.93	378.50	-2.57	.01
		Deep	24	28.27			
LCI-Appreciation for Death	Non	14	46.82	177.50	-2.94	.01	
	Subtle	52	29.91				
	Non	Deep	14	30.07	20.00	-4.51	.001
		Deep	24	13.33			
	Non	Profound	14	11.50	.001	-2.98	.001
		Profound	4	2.50			
	Subtle	Deep	52	44.28	323.50	-3.38	.001
		Deep	24	25.98			
	Subtle	Deep	52	29.98	27.00	-2.47	.01
		Profound	4	9.25			
PANAS-Positive Affect	Subtle	50	26.02	26.00	-2.45	.01	
	Profound	4	46.00				
	Subtle	Deep	50	32.16	333.00	-3.09	.01
		Deep	24	48.63			

Table 4.8 continued						
Variable	NDE Depth	N	Mean Rank	<i>U</i>	<i>z</i>	<i>p</i>
MLQ-Presence of Meaning	Subtle	47	24.38	18.00	-2.16	.05
	Profound	3	43.00			
	Subtle	47	30.34	298.00	-3.05	.01
	Deep	23	46.04			
SSVS-Transcendence	Non	12	12.54	72.50	-2.58	.01
	Deep	25	22.10			
	Non	12	6.63	1.50	-2.77	.01
	Profound	4	14.13			
	Subtle	52	27.22	37.50	-2.15	.05
	Profound	4	45.13			
	Subtle	52	35.19	542.00	-2.21	.05
	Deep	25	46.92			

### Multiple Regression to determine what aspects of NDEs predict aftereffects.

Multiple regressions were performed to see which characteristics of an NDE may predict various ‘aftereffects’. Results of the above analyses were used to determine which variables to include in the regression. Because there were a variety of significant relationships, it was decided to include only those variables showing consistent significance across the analyses undertaken. Therefore, only the LCI and the MLQ appeared to show consistently meaningful relationships with the variables in the previous section. Consequently, two regressions were undertaken - one to predict what aspects of the NDE predict Life Changes and the other to predict what aspects of the NDE predict Meaning in Life.

The Life Changes predictor variables were date of NDE, NDE circumstance, and NDE category. As indicated in Table 4.9, the model was significant with the combination of variables accounting for 49% variance in Life Changes,  $R^2=.49$ ,  $F(13, 67)= 4.88$ ,  $p<.01$ . Not having an NDE accounted for 3% of unique variance in Life Changes scores; NDE-cognitive subscales scores accounted for 7% of unique variance in Life Changes; NDE transcendence subscales scores accounted for 3.5% of unique variance in Life Changes; having an NDE 1-10 years ago accounted for 3% of unique variance in Life Changes scores; and NDEs that occurred 31-40 years ago accounted for 8% of unique variance in Life Change scores.

Table 4.9

*Standard Multiple Regression Coefficients for Depth of NDE, Circumstance of NDE, and Date of NDE on the Life Changes*

Life Changes Inventory		b	$\beta$	sr <sup>2</sup>
Depth of NDE	Non-NDE	-.88	-.79	0.03
	Subtle NDE	-.41	-.51	0.01
	Deep NDE	-.34	-.37	0.02
Circumstance of NDE	Close to death/dying	.01	.01	0.01
	Dead	-.09	-.09	0.01
NDES subscales	NDE - Cognitive Subscale score	-.08	-.45	0.07
	NDE - Affective Subscale score	-.03	-.20	0.01
	NDE - Paranormal Subscale score	-.05	-.23	0.02
	NDE - Transcendence Subscale score	-.05	-.31	0.04
Date of NDE	1-10 years	.23	.26	0.03
	11-20 years	.29	.28	0.04
	21-30 years	.06	.06	0.01
	31-40 years	.38	.39	0.08

The Meaning in Life predictor variables were Location of NDE, Circumstance of NDE, and Depth of NDE (category). Mahalanobis Distance indicated two cases exceeded the critical  $X^2$  of 27.88, so these cases were excluded from the data set, and a further regression run. The model is shown in Table 4.10, and was significant with the combination of variables accounting for 17% of the variance in Meaning in Life scores,  $R^2=.17$ ,  $F(7, 78)=2.34$ ,  $p<.05$ . Being close to death/dying at the time of NDE accounted for 4% of unique variance in Meaning in Life scores; being dead at the time of NDE accounted for 6% of unique variance in Meaning in Life scores; being located in hospital when NDE occurred accounted for 7% of unique variance in Meaning in Life scores.

Table 4.10

*Standard Multiple Regression Coefficients for Depth of NDE, Circumstance of NDE, and Location of NDE on the Meaning in Life Questionnaire*

Meaning in Life Questionnaire		b	$\beta$	sr <sup>2</sup>
Depth of NDE	Non-NDE	-.69	-.03	0.01
	Subtle NDE	-.78	-.05	0.01
	Deep NDE	.94	.06	0.10
Circumstance of NDE	close to death/ dying	3.92	.26	0.05
	dead	6.14	.32	0.07
Location of NDE	Home	-1.55	-.09	0.01
	Hospital	-4.39	-.29	0.06
	Work	6.69	.14	0.02

## CHAPTER 5:

### Qualitative Results

The aim of the research is to investigate the association between specific NDE features and aftereffects. The original purpose of the qualitative interviews was to better explicate these relationships. However, as the interviews progressed, it became apparent many participants could not explicitly identify the link between their NDE and specific aftereffects. Some participants mentioned they did not make the link between the NDE and any changes they had experienced, until various periods of time after the NDE. Because participants were not able to identify specific features of their NDE as facilitative of the changes they experienced, but instead more generally linked the NDE to changes they had made in their life, the focus of the qualitative analysis turned to identifying the main NDE features and aftereffects, rather than interpreting the links between the two. The two main themes evident across the transcripts and identified through Thematic Analysis (TA) were:

1. Content of NDE
2. Aftereffects of NDE

Within these two main themes, several sub-themes were identified. Within the *Content of NDEs* theme, sub-themes gravitated around the features of NDEs typically described in the literature, although not all were apparent. Within some of the subthemes themselves, specific components (e.g., children as important to return to physical body) were particularly evident across the transcripts, so have been highlighted. In regard to the *Aftereffects of NDEs* theme, the subthemes also gravitated around those typically described in the literature, although not all were apparent. Again, specific components within the aftereffects subthemes were apparent, and are described below. Interview participants are represented as Participant A, B, C, or D. While those who submitted written accounts are represented as Participant 1, 2, 3... and so forth.

## 5.1 Content of NDE

Across the transcripts, the Content of NDEs was a prevalent theme. Participants were invited to describe their NDEs, and in doing so typically described many of the features of an NDE reported in the literature. For ease of analysis, these features or subthemes, are described here according to the four typologies provided by Greyson (1983): paranormal, affective, transcendental, and cognitive.

**Paranormal subtheme.** The paranormal subtheme was characterised by reports of disembodiment. Many participants described the sensation of leaving their physical body at the beginning of their experience. Leaving the physical body was accompanied largely by the ability to see their physical body as they floated in an upward direction:

I was floating up. People say they float up and look down, but I didn't have to look down because I knew I was on my back going up and I could see 360. I could see what was going on up here and what was going on down here. (Participant A)

I was in a place above that I didn't want to leave. I was going somewhere and I was leaving everything behind. I knew I was leaving everything behind and I was really happy to leave everything... (Participant B)

I did leave... ah I can't say I left my body, because I am just consciousness. My consciousness left. My body has experiences too. I am not my body, I have a body. (Participant C)

I was floating into another part of the hospital ward I had never seen before, but was later able to describe the painting on the wall (children's ward). (Participant 12)

I was "floating" up at my ceiling level. I was looking down at my dead body. (Participant 15)

...I was floating above the dressing table in my bedroom. I then looked down and saw myself in the bed. (Participant 18)

...I was floating, maybe 30-40 metres above the car that I was in. No concern at all but some wonderment as to the whole scene, going on below me. (Participant 23)

A further feature commonly described throughout many transcripts, and belonging within the paranormal subtheme was that of travel through a tunnel. Participants often described this travel as occurring at great speed:

I was being pulled through a tunnel at the most incredible high speed. (Participant 3)

I found myself drifting up a tunnel. This was not a hard tunnel like a rail tunnel, it was more like a long tube of light. (Participant 5)

This bright light (tunnel in form) either drew me to it or somehow enveloped me. (Participant 7)

The next thing I knew, my head seemed to be floating off upwards at great speed. Everything was black but I knew my head was zooming upwards through a tunnel. (Participant 28)

I was then in a tunnel with cylindrical bands on the wall - mostly grey and white - there was a bright light at the end. I had no emotion and time was not a factor, although I was travelling at incredible speed through the tunnel. (Participant 13)

I felt as if I was in a tunnel with many people I had known on each side of the tunnel. There was a light at the end of the tunnel (Participant 21)

Suddenly my body picked up pace and began moving quickly through the tunnel. Then it felt like I had no control and I was being sucked through at enormous unreal speed. (Participant 24)

**Affective subtheme.** The affective subtheme was most typically characterised by descriptions of positive affect during the NDE. Common terms used by participants to explain these positive emotions included “love”, “joy”, “warmth”, and/or “peace”:

The second I decided that (to come back to the physical body), I felt like ok, I felt peace and that was alright. (Participant B)

I had this overwhelming love, it was so satisfying, like a longing that hadn't been met through my entire life. (Participant C)

It was light and a sense of peace. (Participant D)



...and an overwhelming feeling of wellbeing and I think I would describe a feeling of joy or freedom.  
(Participant 1)

I had an experience like no other...the peace and calm I felt was wonderful and I wanted it to go on forever. (Participant 4)

It was peaceful. (Participant 5)

...it was total peace, total calmness, warm, and the most peaceful experience ever. (Participant 6)

...then felt a great sense of peace, there was also an incredible feeling of warmth and love and a separation of what was going on around me. (Participant 14)

Participants often indicated they felt drawn to a bright light during their NDE. Entering the bright light was often described in conjunction with the feelings of peace and love:

...there came a very pleasant feeling of peace and quiet and felt as though I was slipping away into a white/light blue realm that I was comfortable with and was happy to slide into. (Participant 9)

It felt as if you were being drawn to it you know you weren't just milling around. All of a sudden it came, you know, surely and slowly. The light came toward me and then you felt yourself going there. And then you feel yourself really into the light you now really in it. (Participant A)

I had this sensation of absolute bright intense light like I have never ever known before or since -from within my body, a glowing warmth (Participant 1)

As I took in this new experience in, my attention was drawn to a bright light that appeared above me. A pure white light that was in essence the brightest light I had ever seen, yet it didn't hurt to look into it. (Participant 7)

**Transcendental subtheme.** The transcendental subtheme was most apparent through participant descriptions of being greeted by 'other beings' and being in an 'otherworldly place' when they entered the light or ventured through a tunnel. Beings often were recognised as

deceased loved ones, and some participants described encounters with what they identified as a religious figure, a spiritual being, or a being of light:

But what was spooky you know is you have people come to you, you know even my parents and they were around the age of 30 or 40 and I recognized them. And I had some friends that came who were dead and they looked so different. (Participant A)

I mean I say about god but it wasn't an audible voice. I knew it was good and I knew it was great...I knew it was god and I knew it was god in front of me, it was like yellowy if you describe a colour. (Participant B)

I had the experience of meeting a group of people. (Participant C)

This process ended in me being situated in a pure light area (room) and in the company of five souls. I somehow intuitively knew (and was known to) who those souls were and felt at ease in their company. Like me they were physically of white flowing gowns in body-form with human facial features. (Participant 7)

I am unsure about the time of the NDE but I became aware of both my parents telling me to take just one more step and encouraging me to keep going... When I reached that light my parents and other relatives and friends from my childhood were there - they were having a picnic. (Participant 10)

Otherworldly places were usually described in positive terms, and involved scenes of beauty and tranquility:

I floated up to see a beautiful field with trees and flowers. It was peaceful. (Participant 5)

I arrived in a beautiful grassy field. There was a small brook with a humpback bridge in front of me. On the other side there were lots of people that felt familiar to me. (Participant 18)

A final aspect of the transcendental subtheme that was especially prominent was the feeling of coming to a border or point beyond which participants could not pass. Usually at this

point, participants were given a choice to return or were 'sent back' to their physical bodies, either by deceased family members, the light or spiritual being, or imposed by some other force. Those who were 'sent back', were typically communicated a message of it "not being their time" or that they "still had work to do":

All of a sudden I walked in and I felt as if I have been harpooned and pulled back. I had no say in it. Boof!  
(Participant A)

The consideration of me returning to the physical was something I argued strongly, yet failed in my execution. I was told in no uncertain terms that "there was much more that I had yet to do and I must go back"...The next sensation I had would equate to one of the most uncomfortable processes ever experienced as I was being forced back to and into my physical body (crushed down like a sardine into a too smaller can). I was arguing all the way. (Participant 7)

I started to cross the bridge but was told that I had to stay and go back and that I had work to do.  
(Participant 18)

I saw my Nana...and I really wanted to go with her. I tried to hold her hands but she wouldn't and just said it wasn't time yet - and then I had to go. (Participant 25)

Yeah it wasn't like I had to... it was like a "that's ok" thing. And so I think God released me back. I think I was going (dying) and God just released me back. (Participant B)

There was one other person there and I was delighted and surprised to see him (or her). But my Father asked if I was staying and I said no I had to go back and he said "off you go then", and at that time I became aware of being in recovery (intensive care) and a Nurse telling me I had come through the surgery but there was a long road ahead for getting better. (Participant 10)

A particularly intriguing and recurrent aspect of coming to the border or point of no return was the consideration given to children. Many participants indicated their children played a role in their decision to return to their physical bodies, or that they were made aware of the need to look after their children by deceased others or beings encountered during their NDE:

But I have two children and at that stage they were... It's not something that you forget. I just kept thinking A\*\* and J\*\*, all the way through... (Participant D)

The stark realisation hit me that there would be no one to take care of my children. "Ahhh what will I do?" I realised I had to leave this *amazingness* and a cold, painful journey 'back' ensued. (Participant 4)

I thought/said that I'm dying but I'm not ready because in the next room I have a 15 month old daughter that I need to see grow up first. This was not an emotional decision, just me saying, 'not yet'. I woke up after I'd made that decision. (Participant 13)

I looked down and saw a baby in a crib. I did not seem to know that I had not long given birth and that the baby was my daughter. I saw a grey swollen person and realised I was looking at myself. And then it gave me a push and I knew that I had to go back. Going back was very painful. (Participant 17)

Then I had a choice, and I thought "oh but what about my baby" and god said "well, it's your choice". It wasn't that I would be offending god that I wouldn't go, but I made a choice then and I said "I really want this baby"... (Participant B)

I asked "Who is to look after my children?" They looked at each other and nodded before turning to me with the reply: "You are." (Participant 26)

**Cognitive subtheme.** The cognitive subtheme was characterised solely by descriptions of life reviews. Participants described being shown aspects of their life, and that this was accompanied by a sense of their life being assessed in some way:

This was a meeting made of assessment and one soul who was definitely in charge produced a full 'start to end' visual replay of my worldly life. It flashed within a millisecond and that also raised my awareness of the timelessness of where I now found myself. My life's re-run was assessed and a conversation was entered into regarding the efficacy of my return. (Participant 7)

My life flashed before me in the form of picture frames. I think they flashed from right to left then flicked back from the left with one last larger frame remaining. (Participant 9)

I was aware of a beautiful light all around me, and had a sense of being shown my life, but not in a judgmental way. Rather, with a great feeling of compassion. (Participant 15)

## 5.2 Aftereffects of NDE

Across the transcripts, the Aftereffects of NDEs was also a prevalent theme. Participants were asked whether they had noticed any changes since their NDE, and were invited to describe those changes. The aftereffects of NDEs can vary greatly, and are widely documented throughout the NDE literature. Many of the aftereffects described here are similar to those described in previous literature, and are not presented in any particular order.

**Loss of the fear of death.** The most commonly reported aftereffect by the participants was the loss of fear of death, which is presented as the first sub-theme:

No I'm not afraid of dying. It would be interesting to see when you die, if there is something there. I'm not afraid, but it will be interesting to be able to verify if what I saw is death. (Participant A)

No, I had a fear of death before I was a Christian; I used to be really fearful about it. I thought it was so final, because of the way we were brought up. So I didn't realise until it was gone how great it was not to have that. So no I don't fear it at all. (Participant B)

What I felt afterwards, was having the knowledge of never fearing death in the future! (Participant 1)

...all I got was a glimpse, as it were, of a very beautiful place; and a very real sense that we do not need to fear the passing into the next life. (Participant 5)

Fear of death was (and to some extent still is) absent. (Participant 8)

I have had an overwhelming sense of peace and calm and certainty about life in a different (parallel Universe?) ever since and not afraid of Death. (Participant 10)

My near death experience has never left me...I had no idea what was happening but remember it very clearly. What it did do was relieve me of my fear of death. (Participant 13)

I for one am not afraid of death and am only excited about what next once I have left my physical body behind. (Participant 21)

This subtheme was further defined by some participants indicating they were concerned about the process of dying or how they will die, but not what happens after the death of the physical body:

Death didn't worry me - just the actual getting there might take some courage. (Participant 11)

Firstly, I now have absolutely no fear of dying again (how I die and when is another story), but death itself I can only describe as the most peaceful, beautiful experience I have ever had. (Participant 6)

...and I now feel no doubts or fear of death. My fears would be more about the manner of death rather than death itself. (Participant 14)

**Beliefs in an afterlife.** In line with changes in attitudes to death, participants expressed their beliefs about the afterlife had also been transformed. Many indicated a “not knowing” before their NDE, but confirmed their NDE had now placed them on a position of “knowing” there was an afterlife. This afterlife was not always expressed as a specific place, but often in the form of a transition to another life or a continuation of consciousness:

Before I was like “I wonder if”, whereas now I am inclined to believe there is. If you had asked me before I would have said maybe, whereas now I am more leaning toward yes there is an afterlife. (Participant A)

Yeah, I expect an eternal life when I die. My spirit and soul to go on. I expect that it will just be the communication but at a deeper level... I think the body disintegrates. But I think the breath of life. I think when your breath goes, you leave your body, the core or essence or spirit is alive... (Participant B)

The irony is that it's not a death at all, just a spontaneous transition as easy and natural as breathing in... My NDE can confirm one fact known to me. This so called 'heaven' (place of the life-there-after) is not in an upwards direction. It's all around us. The NDE revealed that the transformation from the physical world to that other one is like changing channels, or lifting a veil. (Participant 8)

Up until the time of actual experience I was open-minded about a lot of things, but very much a person who had my feet in the world of logic and science, with some open-mindedness toward the unexplained. Post NDE, I feel as if I have one foot in both worlds, and the two worlds are surprisingly compatible. (Participant 16)

**Changes in religious perspectives and spirituality.** Changes in religious perspectives and spirituality were an especially prominent subtheme. Some participants indicated their NDE served to strengthen previously held religious beliefs and affiliations, or propelled them towards a particular religious path:

I think after it has just strengthened my faith and strengthened my... it has just been one of the things... several things have happened to me. It is just another thing that has laid a foundation. (Participant B)

I already had been strong in my Christian faith and believed in life after death, but this experience only strengthened that... (Participant 14)

I answered Gods knocking and became a Christian in 1987. I learned how to find my inner peace and I learned to trust in Jesus. If he told me to do something, I did it! (Participant 4)

I have always had my faith, I don't go to Church as I don't believe in it, but I have always believed in God. I keep this to myself and inside me. I know more than ever now that God exists, I also believe in Guardian Angels, I know they saved me. (Participant 6)

Others however indicated their NDE provided them with a different perspective on religion - one that sees religion as a "manmade" construct, with negative connotations that participants no longer required:

I also had been well drilled in religion; I found the whole thing repugnant. So I was wrestling with the duality of religion on one side and spirituality to one side. I could not integrate... I have come to the point where I see clearly what religion is about. I see a sort of negative consciousness that has been posing its view on us. (Participant C)

The outcome was the realisation that religion is a manmade construct that crudely attempts to make sense of life and what may lie beyond that. Often these driven by fear and coercion in which each religion thinks it is the exclusively correct one and all other believers contrary to their own must confront some vague catastrophic doom for being different. (Participant 8)

I was brought up in a very religious household but no longer need that "prop" and firmly believe I will be reunited with those who have gone when my time comes. (Participant 10)

...it was "explained" that "God", spirits, religion are just perception filters used when contact was made with "them"... (Participant 16)

Some participants indicated their NDE resulted in a personal journey of exploration and discovery, which resulted in the enhancement of a sense of spirituality:

My personal journey of seeking the closest explanation for what my NDE meant resulted in the study of several mainstream and eastern religions. I'm still not religious, never was and definitely never will be. There is a 'god', some higher energy on the scale of things (that I know). (Participant 8)

Well I think as far as that... I think it has reassured me spiritually. (Participant B)

As a result I had a massive spiritual experience which was somewhat disconcerting to this self-professed atheist, but it made me rethink my stance about God and the meaning of life and especially my place in the Universe. (Participant 4)

**Changes in attitudes and values.** Many participants noted they had had changes in their attitudes and values since their NDE. These were often reflected by personal changes to character, which enabled them to be more "calm" and "peaceful" in their life:

My demeanor is now very calm, I am no longer an angry person...my persona is very calm in nature. (Participant 2)



My life since my NDE has changed considerably. I have become a better person, more understanding, compassionate, caring, relaxed, and less opinionated. (Participant 6)

Nevertheless my NDE do bring me a rock solid unshakeable calm when helping others with loss, crisis and trauma. Maybe somehow, in some way that inner peace translates to the people I'm helping without having to name it. (Participant 8)

I am at Peace with the world. (Participant 10)

Changes to personal characteristics often resulted in changes in interpersonal relationships and interactions, with some participants indicating greater tolerance for difference within interactions, while others noted a strong sense of knowing connections with others are “the most important thing in life”:

You know you had your ideals and you'd be discussing them with people and if they didn't agree, you would try and explain to them how you felt. Now it's different, and hey people have their views and I wouldn't consider trying to change it. You have a discussion and I respect their views and my views. And so be it. (Participant A)

I don't waste time with people who are negative or vindictive or cynical, am more assured about my own opinions and don't need the approval of others to make it through life. This world is truly a beautiful place, something I had not noticed before this crisis. (Participant 10)

It made me value life, it made me quite cautious...It really made me take account of my life. My health and my family, I had support of my family, the school, and also my extended family and the police, ambulance, hospital. (Participant D)

I found that a purpose in this life has more to do with connecting with people and enhancing their wellbeing. Relationships matter and it's what you do for people is what counts more than what you do for yourself. Ask anyone on their death-bed regards what really mattered to them in their life journey, and nearly always it results in their answer involving 'people' not how much money they made or how many empires they built. (Participant 8)

A related subtheme involved some participants indicating others also had noted changes in their beliefs, attitudes, and demeanor. While some described positive reactions by others, a few participants indicated significant others had difficulty comprehending the changes that occurred:

Some of them now think I am a bit more laid back. I have always tried to help people, I volunteer. I still do that. I suppose if anything people think I am a bit more laid back; it is just that I just take it as it goes. (Participant A)

I believe those around me can see I have changed for the better, many have said so. My sister is always saying that she likes the new me better. I am more content now and not so driven. I still want and desire a good life, but I want and desire happiness and contentment more. (Participant 6)

My husband couldn't comprehend my reasons for change. I have found it impossible to share it with any family at all which has rather alienated aspects of family life. I found a loving friend who helped me cope with the impact of the NDE (and was a witness) for sixteen years (Participant 22)

I do not think any of my family was too impressed with my new life and generally did not share my opinions, so I learned to keep my beliefs to myself... My friends were not too keen to see me and my family was absent by their absence, except my Dad. He was intrigued and wanted to know all the gory details of my near death experience. His words, definitely not mine! He later took me to a movie all about other peoples' experiences and he would be really buzzing when talking of such things. (Participant 4)

**Others reactions to disclosure.** Despite the positive changes in attitude and behaviour towards others expressed by many participants and noted by significant others, a related subtheme is worth mentioning. Although not specifically an aftereffect, this subtheme was represented by participants discussing the actual or perceived reactions of others to disclosure of the NDE. Descriptions were mixed, with some indicating others were supportive or understanding of the NDE, while others were not:

I talked to a few and they said it was interesting. I didn't push it and they didn't ask so it didn't go any further. You see it often, a lot of doctors don't even believe in natural medicine. (Participant A)

I have told my GP about this and he was most sympathetic and made me feel believed. (Participant 3)

I told my mum about it, who didn't believe me. When we went for the check-up she asked the doctor if this could have been possible. They got me to tell the surgeon what I had heard and he just looked at me shocked and walked away. (Participant 19)

Further to this, some participants indicated they had not disclosed their NDE to anyone, as they did not understand it, and were fearful of being ridiculed or labeled "silly" or "crazy":

I have been telling no one about it because people will call me silly. Even I have not told my children about it to date. I am sharing it with you guys for the first time. (Participant 26)

I never found it easy to talk about this experience as believed people would think I'm crazy. (Participant A)

I felt weird and confused for ages after it and told no one, not even the ambulance people who attended me. (Participant 27)

**Psychic abilities.** A final aftereffect noted by some participants was an increase in psychic abilities, which they directly related to their NDE, although, could not identify specific features of their NDE that could be attributed to this new ability. Another spoke of an increased ability to manifest physical things into existence:

I must admit I have become more psychic. I couldn't tell you what you are going to do this weekend because I'm not interested in that. But sometimes some things might come to you and it just spurts out, it's true you know...You know you're talking to someone and they say something and it will happen. I have known things to actually picture something in my head and you find out later that it happened. (Participant A)

Many strange events occurred after the accident and it became the norm to know who was on the end of the phone before I answered it - even if it was 6 months since I had last heard from the person. It

was sometimes very disconcerting but also quite exciting to be *me*....I had become weird and even I knew it! (Participant 4)

For example I learnt how to manifest things using intention. One example is, I used to love riding my motorcycle with a silk shirt. Anyway I walked into this one shop and I visualised seeing a silk shirt, a silk shirt on the rack and I recreated all the experience of doing that and the experience of picking it off the rack and going to the counter and buying it. So the next time I went into the place I went in and I bought the silk shirt and there were actually two of them. (Participant C)

I always knew when I was nursing before this happened, when someone might die but now it's even more acute and I often see people and know that they don't have long even when I know nothing about them. I have dreams where I'm told about future happenings including one where my father who was dead told me that my sister was going to have a baby boy on his birthday. I rang her but she dismissed me as she said she was unable to conceive and wasn't pregnant. Three weeks later she found she was and he was born on the exact day that I was told. (Participant 17)

## CHAPTER 6:

### Discussion

The discussion chapter begins with the hypothesis statement and the specific aims of the research. A summary of the main findings is provided, and the implications of the findings are discussed in terms of contribution to current literature and defining NDEs for the people of New Zealand. The findings are compared and contrasted with previous findings and limitations of the current study discussed. Recommendations for future research of NDEs within Aotearoa New Zealand will be described, along with a concluding summary of the discussion chapter.

Thy hypothesis of the current study was to investigate the relationship between NDE-related factors and NDE aftereffects. Overall, findings revealed that the aftereffects described in the qualitative interviews and those measured quantitatively were synonymous with those found in Tassell-Matamua and Murray's (2014) study of NDEs in the Aotearoa New Zealand population, as well as those evidenced in the extensive NDE literature that has accumulated over the past four decades (e.g., Noyes et al., 2009). Addressing the specific relationship between NDE-related factors and aftereffects was done via three means. Firstly, the relationship between NDE depth and NDE aftereffects was investigated, followed by an analysis of the relationship between NDE circumstance and NDE aftereffects, and lastly by investigating the relationship between NDE features and NDE aftereffects. Findings are discussed in relation to these three aspects below.

#### 6.1 Relationship Between NDE Depth and NDE Aftereffects

Across the sample, NDES scores indicated more than half the participants had NDEs that could be categorised as 'subtle', while only 20% had 'deep' NDEs, and even fewer had 'profound' NDEs. This is in contrast to Khanna and Greyson (2013), who, using the same method of categorising participants, reported the large majority of their sample had 'deep' (41%) or 'subtle' (37%) NDEs, while a smaller portion had 'profound' NDEs. Differences between the samples may be related to the demographics of each sample. For example, Khanna and Greyson's participants had previously contacted the authors about their NDEs so were purposively recruited. In contrast, the present study used advertisements to recruit participants

who self-selected into the study. It is possible the purposive recruitment method used by Greyson and Khanna, inadvertently selected participants who were more likely to reflect on their NDEs and thus provide more detailed information about the experience, which resulted in ‘deeper’ NDEs being reported. It is equally possible the researchers inadvertently ‘selected’ those participants whose NDEs ‘sounded more interesting’ to participate in the study, thus creating a bias in their sampling.

The depth of the NDE was positively related to beneficial change in participants; with those participants who had experienced either a deep or profound NDE being more likely to experience greater life changes post-NDE, compared to NDErs who had subtle NDEs, and those categorised as non-NDErs (despite feeling as though they had an NDE). One of the greatest degrees of change was found for deep and profound NDEs on increased concern with other people, which included having greater compassion, tolerance, and understanding of others (Greyson & Ring, 2004). This was supported by the qualitative data, whereby participants spoke of their increased compassion, tolerance, and acceptance of others, and the capacity to understand that other people may have different perspectives to their own. Aligning with this increase in concern for others, participants also showed a decrease in self-enhancement. Combined, these findings revealed that post-NDE, participants were less concerned with advancing self-focussed values, beliefs, and behaviours, and more concerned for the welfare of other people (Lindeman & Verkasalo, 2005). A further affirmation of these findings was a significant decrease in the interest for worldly achievement. This means that individuals experienced a decrease in their interest in material success, material items, and experienced a reduction in competitive tendencies.

Depth of NDE also corresponded with an increase in appreciation for life, which included a greater ability to appreciate the ordinary things of life, a greater appreciation of nature, and a sense of the sacred aspect of life, suggesting that life should not be taken for granted (Greyson & Ring, 2004). Participants also experienced greater positive affect than negative affect, and greater life satisfaction. These quantitative findings were again supported by participant interviews, which revealed in addition to the changes identified by participants, significant others had also noticed positive changes in the NDEr, such as being “more content and not so driven”. It is possible, even likely, the positive affect resulted from a greater appreciation for life, and that

this greater appreciation for life was facilitated by the above mentioned changes, including reduced materialism and greater concern for others. Indeed, the links between materialism and reduced life satisfaction (e.g., Tsang, Carpenter, Roberts, Frisch, & Carlisle, 2014), and gratitude and intentional positive activities towards others (e.g., Lyubomirsky, & Layous, 2013), are well-established. But, the role of NDE depth in these relationships is less clear, and difficult to determine with certainty in the present study. Perhaps deeper NDEs facilitate some changes, such as less materiality and greater concern for others, and these changes in turn facilitate greater positive affect and appreciation for life. Further empirical studies into these proposed associations would better explicate the relationships between these variables.

Participants with deeper NDEs also experienced greater increases in spiritual well-being, compared to those with ‘shallower’ NDEs (i.e., subtle) or non-NDEs. Participants also felt that they knew their life’s meaning, as opposed to feeling as though they were searching for meaning in life. This means that they felt as if they knew their life’s purpose and that they understand what it is they need to achieve in life in order to make their life meaningful, as opposed to questioning what their purpose in life is or how to make their life feel significant to them. This was complemented with a significant increase in the importance of self-transcendence, and openness to change. Qualitative data supported these quantitative findings, but through different mechanisms. For example, some interview participants indicated their NDE had strengthened their existing beliefs in a specific orthodox religion, while others indicated their NDE had facilitated a rejection of orthodox religion in favour of a more ‘spiritual path’. From the data, it is not known whether NDE depth may have facilitated one or other of these mechanisms (e.g., deeper NDEs lead to a rejection of orthodox religion). But either way, participants’ spiritual well-being was enhanced as a consequence of their NDE. These findings support those of Khanna and Greyson (2013), who found a significant relationship between NDE depth and spiritual well-being, such that ‘deeper’ NDEs resulted in more pronounced changes in spiritual well-being. They also support the findings of McLaughlin and Malony (1984), who found NDE depth increased the value given to religion. Qualitative interviews from the present study also revealed NDEs facilitated “journeys of spiritual exploration” for participants, resulting in a strengthened sense of spirituality. This is in-line with findings by Greyson and Khanna (2014) which revealed NDEs reported greater spiritual growth compared to non-NDEs and a

significantly positive relationship between NDE depth and spiritual growth. These changes in spiritual wellbeing likely facilitated the enhanced sense of meaning in life.

A commonly reported finding in NDE literature is the loss of the fear of death amongst NDErs (Moody, 1975, Sartori, 2014), and this finding was evident in this study in several ways; including NDE depth being related to an increased appreciation for death as measured by the LCI-R. Appreciation for death included a reduction in fear of death, a greater conviction that there is life after death, and a greater interest in issues related to death and dying (Greyson & Ring, 2004). An appreciation for death was also evident in the qualitative data, with many participants stating they no longer feared dying, although did indicate some concern with *how* they will die. In addition to this, participants stated a strengthened conviction in a life after death, suggesting what they saw during their NDE will in fact be what they see when they do die. The qualitative data did not provide any themes associated with a greater interest in death and dying issues. Again, it is difficult to determine which specific aspects of the NDE facilitate this increased appreciation for death. However, the categorisation of an NDE as deep or profound is indicative of an experience containing a greater quantity and intensity of NDE features. Given the findings indicate NDE depth facilitates a greater appreciation for death, it seems Tassell-Matamua and Lindsay's (in press) proposition that the loss of the fear of death results from a combination of NDE features (including seeing the light, meeting deceased others, positive affect, and disembodiment), is partially supported by the present research's findings.

In summary, it is difficult to determine the exact mechanism responsible for these changes from the data. However, what is clear is that depth of NDE is significantly related to such changes. The more features experienced during an NDE and the more intensely, the deeper an experience is categorised. Therefore, the findings clearly suggest the greater quantity and intensity of features experienced during an NDE facilitate a greater amount of beneficial change post-NDE.

## **6.2 Relationship Between NDE Circumstantial Factors and NDE Aftereffects**

NDE circumstantial factors investigated in the present study included date, location, and circumstance (i.e., close to death versus dead) of the NDE. Overall, findings indicated the location of the NDE had an influence on NDE life meaning, such that participants who had their



NDE in hospital reported less meaning in life, compared to those who had their NDE in “other” locations. Previous studies suggest NDE depth could be influenced by location (e.g., Tassell-Matamua & Murray, 2014; van Lommel et al., 2001). The reasons why this may be so remain unclear, although tentative explanations are possible. For example, in the present sample the lower meaning in life post-NDE for those who had their NDE in hospital might be due to their receiving more immediate treatment to stabilize their physiological condition, which meant they were not as physiologically impaired or close to death as they may have been had their NDE not occurred in hospital. This may have prevented them having as ‘deep’ an NDE as they would have if they were closer to death. Previous studies suggest physiological condition influences the depth of the NDE, such that those who believed they were dead when they had their NDE report deeper experiences (e.g., Owens, Cook, & Stevenson, 1990; Tassell-Matamua & Murray, 2014). Findings from this study showed NDE depth is positively related to meaning in life. Therefore, the finding that those who had their NDEs in hospital felt less meaning in life could be explained through the mediational role of closeness to death and the influence this has on NDE features, which resulted in shallower NDEs being experienced, and thus less meaning in life.

However, meaning in life was positively impacted by the circumstance of the NDE. In particular, participants who reported they were dead when their NDE occurred also reported a stronger tendency to search for meaning in their lives, and also revealed they were more satisfied with their lives, than those whose NDE occurred while they were close to death/dying. However, significantly lower mean scores were found on search for meaning for participants who indicated their circumstance was ‘other’, compared to those who were close to death/dying and dead. To fully interpret the later finding, a greater understanding of ‘other’ would be required. Perhaps these participants were unable to identify exactly what their circumstance was when their NDE occurred? Regardless, this finding raises questions as lower scores on the search for meaning subscale suggests these individuals are not actively seeking meaning in their lives as much as those who were close to death/ dying or dead during their experience. Maybe participants who were closer to death actively seek to make sense of their experience and find their purpose in life, which influences appreciation for and greater satisfaction with life. Those in the “other” category may not have been as close to death, so did not feel as compelled to make sense of their experience? While the search for meaning by those who were close to death may be explained in this way, the finding is slightly contradictory to previous research, which typically indicates

participants obtain an awareness of the meaning and purpose of their life during the NDE (e.g., Noyes et al., 2009), rather than feeling a need to search for such meaning after the NDE, and that this sense of meaning increases with the passage of time since the NDE (van Lommel et al., 2001).

Significant differences were found between NDE circumstance and participants' appreciation for death. Individuals who reported they were dead when their NDE occurred compared with those who were close to death/dying, reported a greater appreciation for death. This suggests the closer an individual was to death, the greater the influence on reducing the fear of death, increasing belief in the afterlife, and increasing an interest in death related issues. Previous research indicates a reduction in the fear of death and increase in afterlife beliefs occur in those who have a close brush with death and experience an NDE, as well as those who have a close brush with death but do not experience an NDE (e.g., van Lommel et al., 2001). However, the changes are more pronounced in those who have an NDE, suggesting it cannot simply be the close brush with death that facilitates the greater appreciation for death (Tassell-Matamua & Lindsay, in press). Depth of NDE has been related to closeness to death (e.g., Owens et al., 1990; Tassell-Matamua & Murray, 2014) as well as being positively associated with appreciation for death (as indicated in this study), which implies there is something about the NDE itself that leads to the greater appreciation for death. After an NDE, individuals often describe their experience as 'more real than reality' (74%), and at least 'as real as reality' (Stout, Jacuin, and Atwater, 2006). In this sense, many say that "seeing is believing", and for the NDEr who has come close to death and experienced something equally if not more real than seeing one's own hand, then the loss of the fear of death becomes a little more expected.

Time since the NDE occurred also impacted NDErs appreciation for death. Findings revealed participants whose NDE occurred within the past decade evidenced a greater appreciation for death than participants whose NDE had occurred more than 10 years ago. This is interesting, as previous literature suggests the aftereffects of an NDE do not fade with time (van Lommel et al., 2001). The results do not necessarily suggest the appreciation for death did fade over for the present sample, as date of NDE was identified as a predictor of later life changes. But given van Lommel et al.'s previous findings, an appreciation for death would have been expected, irrespective of time elapsed since NDE. However, this unexpected result could instead

be explained by the immediacy of the event. Research into PTSD and trauma responses indicate the probability of adverse reactions to trauma, such as PTSD, tend to be more intense within the first year after the antecedent event, but then evidence a tapering pattern after this time, where only a small minority of trauma survivors are at risk of adverse reactions to the initial event (Bonanno & Mancini, 2012). A similar sort of mechanism may be responsible for the appreciation for death in the present sample of NDErs, with the same tapering pattern occurring over a period of time.

In summary, again it is difficult to determine exactly how NDE location, time, and circumstance are related to specific aftereffects. However, what is clear is there is some relationship occurring, and this needs to be better explicated by future studies. Specifically, the findings here strongly suggest extent of physiological impairment may be an important NDE circumstantial factor impacting certain NDE aftereffects.

### **6.3 Relationship Between NDE Features and NDE Aftereffects**

NDE features were measured primarily by investigating the NDE subscales, which align with Greyson's (1983) four typologies: cognitive, affective, paranormal, and transcendental. The most common type of NDE features reported by the sample were affective, which consisted of feelings of peace, being surrounded with light, feelings of joy, and feelings of cosmic unity/oneness. Affective features were also widely described in the qualitative interviews, with participants reporting positive affect and experiencing a bright light. The present study findings are similar to those of Greyson (1983), who also found affective features were reported more frequently by his sample of NDErs, than cognitive, paranormal, and transcendental features.

All the NDES subscales showed similar strength and significant relationships with the majority of subscales of the LCI-R, including appreciation for life, appreciation for death, spirituality, and quest for meaning. With the exception of quest for meaning, the qualitative findings largely described such aftereffects, although any perceived relationships between the aftereffects and NDE features could not be ascertained from the interviews. Quantitatively, there were no significant associations between NDE features and religiousness, which is partially supported by the qualitative interviews which indicated some participants tended to reject orthodox religion post-NDE.

Because of the many significant relationships between the NDE features and aftereffects as evident in the present study by correlations between the NDES subscales and developed measures (such as LCI-R, SWLS), it is useful to look at any anomalies to these patterns to determine whether NDE features are related to specific aftereffects. One anomaly was concern for others, which was not significantly related to affective features, although it was to paranormal, transcendental, and cognitive features. Because affective components of an NDE elicit feelings of well-being and joy and promote a sense of worldly unity during the NDE (Greyson, 2008b), an interpretation of these findings is that positive emotions are so pervasive during the NDE they mitigate any feelings of concern or anxiety one may feel about others, and this has a ‘flow on’ effect post-NDE. An increase in affective features also increased satisfaction with life and presence of meaning, while decreasing negative affect, post-NDE. These findings could be interpreted as providing additional support for the ‘flow-on’ effect of affective NDE features.

Increased paranormal features of the NDE were related to increased self-transcendence (as measured on the SSVS) and increased spiritual well-being. Among the most prominent of the paranormal features is the OBE, and it is this specific feature that may best account for these observed relationships in the present study. For example, the sense of disembodiment epitomising the OBE facilitates a sense of transcendence, by providing one with the belief they have contravened conventional norms of reality, by existing or having conscious perception outside of their physical body. The combination of the OBE and the new sense of transcendence then provide a catalyst for an increased sense of spirituality and spiritual well-being.

Neither paranormal nor transcendental features were significantly related to presence of meaning, yet both cognitive and affective features were. It is possible the overwhelmingly positive emotions characterising affective NDE features contribute to the presence of meaning for NDErs after their experience. However, one of the core cognitive features of an NDE is the life review, whereby individuals experience a review of some or all of their life, often in the form of a panoramic ‘replay’ of events, accompanied by the simultaneous awareness of the impact of one’s actions upon others (Moody, 1975; Sartori, 2014; van Lommel, 2010). Qualitative interviews revealed some participants experienced a life review during their NDE. The relationship between presence of meaning and cognitive features found in the present study

could be best explained through the impact of the life review. Being able to recollect the events of one's life and be cognisant of the impact of those events on others, could facilitate the feeling that one's life has purpose and meaning.

In summary, findings indicate the typology of NDEs may have some influence on certain aftereffects. While a causal relationship could not be determined, the correlational nature of the data suggest specific components of the NDE, may be more definitive in determining the aftereffects an individual is likely to experience, in comparison to other components of the NDE.

#### **6.4 Limitations of the Current Study**

Although a variety of significant findings were evident in the present research, they must be interpreted with some degree of caution, due to a variety of limitations inherent to the research methodology. The first notable limitation of the current study was the technical issues when administering the online survey, which resulted in the loss of some scale items. The loss of items may have compromised the reliability and validity of the scale and limit its interpretation. Fortunately, this was avoided in the current study as appropriate alpha levels were maintained. However, future studies employing online technology as a source of data collection may take account of this limitation, by completing more robust pilot 'tests' of the questionnaire response loop, prior to the questionnaire going 'live' and being accessible by potential participants.

Another limitation was the limited cultural and ethnic diversity of the participants. The large majority were Pākehā, but because New Zealand has a very culturally diverse background, the population was not adequately represented. This limitation also limits the current study to a 'Western' interpretation of the results and may not represent the true population. Māori people for example, have very different views on many aspects such as spirituality, religion, family, and health, which could benefit from being further understood in terms of how individuals interpret their NDE. For example, spirituality is an important part of Māori culture which may mean Māori face fewer or different issues when 'communicating their NDE' to others, and thus NDE depth may be greater for Māori than non-Māori (Tassell-Matamua & Murray, 2014), and thus facilitate a greater quantity of aftereffects, or even facilitate them in a different way. Future studies in Aotearoa New Zealand would benefit from investigating the cultural diversity of

NDEs and NDE aftereffects in this country, and take account of the present study's limitation by actively recruiting a larger sample of Māori participants.

A study by Sartori (2014) mentioned the difficulty many individuals face when sharing their experience with others. The ineffability that comes with communicating an NDE may in itself be a limitation, as NDE is largely based on self-report, and poses the question of how reliable the self-report is in this context. Similarly, the nature of the NDE makes it difficult to obtain prospective data on the experiences and their aftereffects, meaning the majority of NDE research relies on a retrospective account of the NDE and its possible aftereffects. While a number of prospective studies of NDEs have recently been conducted (e.g., Parnia et al., 2014), investigation of the aftereffects of NDEs from such studies has not yet occurred. Future prospective studies may contribute to the NDE aftereffects literature by taking objective assessments of NDE aftereffects immediately after the NDE, and at for example 2 and 8 year follow-up, similar to the van Lommel et al. (2001) design.

## **6.5 Implications of the Present Study's Findings**

Literature on the aftereffects of NDEs is robust and substantial, having accumulated over a 40 year period. Evidence suggests there are a variety of aftereffects commonly reported after NDEs, and that these aftereffects are typically maintained over time. Yet, less is known about exactly what it is about the NDE that facilitates and maintains such aftereffects. The purpose of this study was to investigate this very issue, by exploring the relationship between NDE-related factors such as NDE circumstance, time, location, depth, and features, and a host of common aftereffects. While a *causal* relationship between NDE features and NDE aftereffects was not established in the present research, a variety of significant relationships were evident, and point to several tentative conclusions and implications.

First among these is that NDE depth (or the quantity and intensity of NDE features), NDE circumstantial factors, and NDE typologies, all play a role in determining certain aftereffects. In that sense, the present findings make a substantial contribution to the NDE literature by progressing current knowledge of NDE aftereffects from a position of knowing that NDEs have typical aftereffects, to one of proposing *how* the NDE facilitates such aftereffects.

Second among these is that the present study findings advance NDE research in Aotearoa New Zealand. Only one large-scale study of NDEs has been conducted in this country (e.g., Tassell-Matamua & Murray, 2014), which provided a rich analysis of NDE circumstances and. The present study has built upon that foundational research, by not only supporting its findings, but also extending it by examining NDE aftereffects - something that was not done in that research. The study also contributes to cross-cultural understandings of NDEs by contributing to the small but growing pool of NDE research being conducted outside of the US and Western European countries.

Finally, the present research has provided evidence suggesting certain NDE aftereffects are prevalent in NDErs, irrespective of the NDE-related factor that may facilitate them. Specifically, appreciation for life, increased meaning, increased spirituality, and a loss of the fear of death were commonly reported. Understanding how prevalent these aftereffects are and why will advance understandings of the needs of NDErs post-NDE, but may also have implications for others. For example, the loss of fear of death can also have a follow on effect with friends and loved ones of the experiencer. As was evident in this study, the positive transformations many experiencers go through are noticeable by others and can have a positive effect on them. NDErs may share their experience with others who are facing death themselves or who are grieving for a lost loved one, which can provide comfort to them (Horacek, 1997; Parnia & Fenwick, 2001). This positive flow on effect could be beneficial to many people in a variety of situations. Perhaps these views of the experiencer and family can be wider spread to all patients, family and friends going through a similar process, to help them through a difficult time of adjusting to and facing death.

## **6.6 Future Research and Conclusion**

Currently, there are only two large scale studies in New Zealand that investigate NDEs within a New Zealand sample. Further studies relating to the content and aftereffects of NDEs would be beneficial, as the current study has only touched on what seems like a large gap in the literature. Continued research with samples in Aotearoa New Zealand is recommended in order to build a foundation comparable to other Western countries. However, cultural diversity must be further addressed as Aotearoa New Zealand is a very culturally diverse nation. Identifying cultural differences and similarities within Aotearoa New Zealand would be beneficial to



advance understandings of the cultural differences in NDE manifestation, interpretation, and aftereffects, as these may vary greatly between the cultures and ethnicities of New Zealand.

The current study investigated the relationship between NDE-related factors and NDE aftereffects. The hypothesis was tested by addressing the three methods mentioned throughout the discussion. Firstly, support was found for the relationship between NDE depth and NDE aftereffects, as NDE depth was an adequate predictor of greater life changes. This was followed by identifying circumstantial factors, such as location of NDE and closeness to death, as predictor factors for NDE aftereffects. Lastly, support for the hypothesis was shown by simply identifying that there are significant relationships between NDE features and aftereffects. Although the type of relationships (e.g. an Affective NDE had an association with greater negative affect) was unexpected, none the less a relationship does exist. Further research to establish a consistent database to identify if these relationships are consistent among NDErs, would be useful.

Therefore, this study has successfully contributed to a very limited body of literature describing NDEs among people of Aotearoa New Zealand. A contribution has also been made by identifying limited research on the relationship between NDE features and aftereffects and exploring this under-researched aspect of NDEs.



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## Appendix A

### **Aspects of Near-Death Experiences that Bring About Life Change**

#### INFORMATION SHEET

##### **Who is doing this research?**

My name is Kate Steadman and I am conducting this research as part of a Master of Arts thesis requirement through the School of Psychology, at Massey University, Palmerston North, New Zealand. I am being supervised by Dr Natasha Tassell-Matamua, who is a lecturer in the School of Psychology. Both of our contact details can be found at the end of this information sheet. This will be a research project investigating what aspects of NearDeath experiences bring about life changes.

##### **What is this research about?**

I am interested in exploring Near-Death Experiences (NDEs) and the aspects of their experience that lead to the aftereffects they have on people's lives. Many researchers have documented the specific aftereffects that NDErs have, however little has been done around what particular aspects of their experience lead to these changes, in particular there has been little research in New Zealand. By doing this research, I hope to extend understandings of NDE's in New Zealand and identify specific features of NDE's that lead to life changes that so many NDEr's face.

##### **Who can take part in this research?**

If you are aged 21 years or older, and believe you have had a NDE at some stage, then I would invite you to participate in this study. An NDE may be defined as a situation where you were dead, dying or close to death, but still felt as though something unusual yet significant happened to you during this time, such as: leaving your physical body; passing through a tunnel; seeing an unusual light; reviewing your life; seeing deceased relatives or religious figures; an altered perception of time; feeling like you went to another place such as heaven, paradise, or even a place such as hell; overwhelming feelings of love; happiness joy,

or perhaps fear and sadness; or any combination of the above. This experience may have resulted in significant and fundamental life changes, and a loss of the fear of death. If you believe you have had such an experience, then I would be very interested in having you participate in our research.

### **What will I be asked to do?**

You will be asked to fill out the attached questionnaire relating to your experience, which should take about 15-20 minutes. You will not be asked to include your name in the questionnaire and so your identity with respect to the questionnaire can remain private.

If you wish, you also have the opportunity to be interviewed about your experience. I will interview you and transcribe your recorded interview. I will ask you if I can archive de-identified (not linked to your identity) data from your interview. Your wishes will be respected. The interview may take 1-2 hours to complete. Depending on where you live you will either be invited to participate in an interview at Massey University or be interviewed over the phone from Massey University. If you choose to travel to Massey University for your interview, you will be reimbursed for your travel costs.

If you wish, I can also post or email a copy of the reports or summaries to you. Any information that you have contributed will not be personally identifiable in the short reports or summaries.

### **What are my rights as a participant?**

As a participant in this research, you have the right to answer as many or as little questions as you choose. You may also withdraw from the interview process and/or ask questions about the research, at any time. The interview will be digitally recorded and later transcribed. The transcribed interview will be returned to you for editing if you wish, prior to me using the information in my research.

All information you provide to me will be held securely and your privacy will be respected. That means, no one will have access to the information you provide, and any information I use in my research will not be able to identify you. Once the research is completed, I will send you a summary of the research findings. I will also be happy to provide further information regarding NDEs if requested.



While people are often pleased to be provided with the opportunity to share their NDE, speaking about it can at times raise emotions and other concerns. If participating in the research causes any distress or other emotions, you will be welcome to contact my supervisor or me to discuss these. We will also be able to provide you with details of other support or resources you could access to assist with any concerns.

**Who can I contact about the research?**

I am available to answer any questions about the research and can be contacted on the details below. My supervisor is also available for contact.

<b>Kate Steadman</b>  <a href="mailto:kate.steadman.1@uni.massey.ac.nz">kate.steadman.1@uni.massey.ac.nz</a>  +6427256542	<b>Dr Natasha Tassell-Matamua</b>  <a href="mailto:N.A.Tassell-Matamua@massey.ac.nz">N.A.Tassell-Matamua@massey.ac.nz</a>  +64 6 3569099 x2056
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*This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application....*

*If you have any concerns about the conduct of the research, please contact Prof. John O'Neil, Chair, Massey University Human Ethics Committee: Southern B, telephone 64 6 356 9099 x 84384, email [humanethicsouthb@massey.ac.nz](mailto:humanethicsouthb@massey.ac.nz).*

## Appendix B

# Aspects of Near-Death Experiences that Bring About Life Change

## Questionnaire

If you believe you have had an NDE at some stage in your life, we would like to learn more about your experience. Below are questions relating specifically to what happened during your experience, after your experience, things that happen in your daily life, and information about you. Please choose the answer you think best applies to each question. There is no right or wrong answers, and some of the questions may not be relevant to you. What we are most interested in is identifying how your NDE was significant to you.

### Your Experience...

When answering these questions, please respond to them in relation to the time of and how you felt during your near-death experience

1. What was the approximate date of your NDE? \_\_\_\_\_
  
2. What was the approximate time of your NDE? \_\_\_\_\_
  
3. Where were you when your NDE occurred [e.g., home, hospital, workplace]?
  
  
4. In what country were you located when your NDE occurred? \_\_\_\_\_
  
  
5. At the time your NDE occurred, which of the following best describes the circumstance you believe you were in:
  - i. Dying/ Close to death
  - ii. Dead
  - iii. Other (please specify)

Please can you describe your circumstance in a little more detail [e.g., cause of death such as: heart attack, suicide attempt, car accident, drowning, sudden illness, etc]:

6.

## About Your Experience...

Please Circle the option that applies to you and your Near-Death Experience

### 1. Did time seem to speed up or slow down?

0 = No

1 = Time seemed to go faster or slower than usual

2 = Everything seemed to be happening at once; or time stopped or lost all meaning

### 2. Were your thoughts speeded up?

0 = No

1 = Faster than usual

2 = Incredibly fast

### 3. Did scenes from your past come back to you?

0 = No

1 = I remembered many past events

2 = My past flashed before me, out of my control

### 4. Did you suddenly seem to understand everything?

0 = No

1 = Everything about myself or others

2 = Everything about the universe

### 5. Did you have a feeling of peace or pleasantness?

0 = No

1 = Relief or calmness

2 = Incredible peace or pleasantness

### 6. Did you have a feeling of joy?

0 = No

1 = Happiness

2 = Incredible joy

### 7. Did you feel a sense of harmony or unity with the universe?

0 = No

1 = I felt no longer in conflict with nature

2 = I felt united or one with the world

**8. Did you see, or feel surrounded by, a brilliant light?**

0 = No

1 = An unusually bright light

2 = A light clearly of mystical or other-worldly origin

**9. Were your senses more vivid than usual?**

0 = No

1 = More vivid than usual

2 = Incredibly more vivid

**10. Did you seem to be aware of things going on elsewhere, as if by extrasensory perception (ESP)?**

0 = No

1 = Yes, but the facts have not been checked out

2 = Yes, and the facts have been checked out

**11. Did scenes from the future come to you?**

0 = No

1 = Scenes from my personal future

2 = Scenes from the world's future

**12. Did you feel separated from your body?**

0 = No

1 = I lost awareness of my body

2 = I clearly left my body and existed outside it

**13. Did you seem to enter some other, unearthly world?**

0 = No

1 = Some unfamiliar and strange place

2 = A clearly mystical or unearthly realm

**14. Did you seem to encounter a mystical being or presence, or hear an unidentifiable voice?**

0 = No

1 = I heard a voice I could not identify

2 = I encountered a definite being, or a voice clearly of mystical or unearthly origin

**15. Did you see deceased or religious spirits?**

0 = No

1 = I sensed their presence

2 = I actually saw them

**16. Did you come to a border or point of no return?**

0 = No

1 = I came to a definite conscious decision to "return" to life

2 = I came to a barrier that I was not permitted to cross; or was "sent back" against my will.

## Since Your Experience...

A near-death incident may or may not bring about certain changes in an individual's life. I would like to know in what ways, if any, your near-death incident affected your life. In responding to the following items, please circle the appropriate alternative according to the instructions given below.

Each statement should be understood as beginning with the phrase, "since my near-death incident."

For example, consider the following statement:

(Since my near-death incident), my interest in the field of medicine has . . . If you felt your interest had strongly increased, you would circle SI in the row following this statement. If you felt your interest had increased somewhat, you would circle I next to the statement. If your interest had not changed, you would circle NC. If your interest had decreased somewhat, you would circle D. Finally, if your interest had strongly decreased, you would circle SD.

To summarize:

Strongly increased = SI

Increased somewhat = I

Not changed = NC

Decreased somewhat = D

Strongly decreased = SD

Since my near-death incident...



	Strongly increased	Increased	Not changed	Decreased	Strongly decreased
1. My desire to help others has	SI	I	NC	D	SD
2. My compassion for others has	SI	I	NC	D	SD
3. My appreciation for the "ordinary things of life" has	SI	I	NC	D	SD
4. My ability to listen patiently to others has	SI	I	NC	D	SD
5. My feelings of self-worth have	SI	I	NC	D	SD
6. My interest in psychic phenomena has	SI	I	NC	D	SD
7. My interest in organised religion has	SI	I	NC	D	SD
8. My reverence for all forms of life has	SI	I	NC	D	SD
9. My concern with the material things of life has	SI	I	NC	D	SD
10. My tolerance for other has	SI	I	NC	D	SD
11. My sensitivity to the suffering of others has	SI	I	NC	D	SD
12. My interest in creating a "good impression" has	SI	I	NC	D	SD
13. My concern with spiritual matters has	SI	I	NC	D	SD
14. My desire to achieve a higher consciousness has	SI	I	NC	D	SD
15. My ability to express love for others openly has	SI	I	NC	D	SD
16. My insight into the problems of others has	SI	I	NC	D	SD
17. My appreciation of nature has	SI	I	NC	D	SD
18. My competitive tendencies have	SI	I	NC	D	SD
19. My religious feelings have	SI	I	NC	D	SD
20. My spiritual feelings have	SI	I	NC	D	SD
21. My concern with the welfare of the planet has	SI	I	NC	D	SD
22. My understanding of "what life is all about" has	SI	I	NC	D	SD
23. My personal sense of purpose in life has	SI	I	NC	D	SD
24. My belief in a higher power has	SI	I	NC	D	SD
25. My understanding of	SI	I	NC	D	SD

others has					
26. My sense of the sacred aspect of life has	SI	I	NC	D	SD
27. My ambition to achieve a higher standard of living has	SI	I	NC	D	SD
28. My self-acceptance has	SI	I	NC	D	SD
29. My desire for solitude has	SI	I	NC	D	SD
30. My sense that there is some inner meaning to my life has	SI	I	NC	D	SD
31. My involvement in family life has	SI	I	NC	D	SD
32. My fear of death has	SI	I	NC	D	SD
33. My concern with the threat of nuclear weapons has	SI	I	NC	D	SD
34. My desire to become a well-known person has	SI	I	NC	D	SD
35. My tendency to pray has	SI	I	NC	D	SD
36. My openness to the idea of reincarnation has	SI	I	NC	D	SD
37. My empathy with others has	SI	I	NC	D	SD
38. My concern with ecological matters has	SI	I	NC	D	SD
39. My involvement with my church/ religious community has	SI	I	NC	D	SD
40. My interest in self-understanding has	SI	I	NC	D	SD
41. My inner sense of God's presence has	SI	I	NC	D	SD
42. My feelings of personal vulnerability have	SI	I	NC	D	SD
43. My conviction that there is life after death has	SI	I	NC	D	SD
44. My interest in what others think of me has	SI	I	NC	D	SD
45. My concern with political affairs has	SI	I	NC	D	SD
46. My interest in achieving material success in life has	SI	I	NC	D	SD
47. My acceptance of others has	SI	I	NC	D	SD
48. My search for personal meaning has	SI	I	NC	D	SD

49. My concern with questions of social justice has	SI	I	NC	D	SD
50. My interest in issues relating to death and dying has since	SI	I	NC	D	SD

## Your current emotions and feelings...

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way right now, that is, at the present moment OR indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure)

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

- |                       |                      |
|-----------------------|----------------------|
| _____ 1. Interested   | _____ 11. Irritable  |
| _____ 2. Distressed   | _____ 12. Alert      |
| _____ 3. Excited      | _____ 13. Ashamed    |
| _____ 4. Upset        | _____ 14. Inspired   |
| _____ 5. Strong       | _____ 15. Nervous    |
| _____ 6. Guilty       | _____ 16. Determined |
| _____ 7. Scared       | _____ 17. Attentive  |
| _____ 8. Hostile      | _____ 18. Jittery    |
| _____ 9. Enthusiastic | _____ 19. Active     |
| _____ 10. Proud       | _____ 20. Afraid     |

## About your Life Satisfaction...

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by circling the appropriate number corresponding with that item. Please be open and honest in your responding.

Statement	Strongly Agree	Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Disagree	Strongly Disagree
In most ways my life is close to ideal	7	6	5	4	3	2	1
The conditions of my life are excellent	7	6	5	4	3	2	1
I am satisfied with my life	7	6	5	4	3	2	1
So far I have gotten the important things I want in life	7	6	5	4	3	2	1
If I could live my life over, I would change almost nothing	7	6	5	4	3	2	1

## About your spiritual well-being...

Instructions: Which response best describes how you feel about each statement?

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
There is not much I can do to help myself	1	2	3	4	5
Often, there is no way I can complete what I have started.	1	2	3	4	5
I can't begin to understand my problems	1	2	3	4	5
I am overwhelmed when I have personal difficulties and problems.	1	2	3	4	5
I don't know how to begin to solve my problems	1	2	3	4	5
There is not much I can do to make a difference in my life.	1	2	3	4	5
I haven't found my life's purpose yet	1	2	3	4	5

I don't know who I am, where I came from, or where I am

1                      2                      3                      4                      5

going.					
I have a lack of purpose in my life	1	2	3	4	5
In this world, I don't know where I fit in.	1	2	3	4	5
I am far from understanding the meaning of life.	1	2	3	4	5
There is a great void in my life at this time.	1	2	3	4	5

## Your Values and principles...

Rate the importance of the following values as a life-guiding principle for you Use the following scale for rating each value using scale: 0 1 2 3 4 5 6 7 8,

In which:

0= opposed to my principles, 1= not important to 4= important to 8= of supreme importance

Value	Opposed to my principles	Not important			Important				Extremely important
<b>POWER</b> (social power, authority, wealth)	0	1	2	3	4	5	6	7	8
<b>ACHIEVEMENT</b> (success, capability, ambition, influence on people and events)	0	1	2	3	4	5	6	7	8
<b>HEDONISM</b> (gratification of desires, enjoyment in life, self-indulgence)	0	1	2	3	4	5	6	7	8
<b>STIMULATION</b> (daring, a varied and challenging life, an exciting life)	0	1	2	3	4	5	6	7	8
<b>SELF-DIRECTION</b> (creativity, freedom, curiosity, independence, choosing one's own goals)	0	1	2	3	4	5	6	7	8
<b>UNIVERSALISM</b> (broad-mindedness, beauty of nature and arts, social justice, a	0	1	2	3	4	5	6	7	8

world at peace, equality, wisdom, unity with nature, environmental protection)									
<b>BENEVOLENCE</b> (helpfulness, honesty, forgiveness, loyalty, responsibility)	0	1	2	3	4	5	6	7	8
<b>TRADITION</b> (respect for tradition, humbleness, accepting one's portion in life, devotion, modesty)	0	1	2	3	4	5	6	7	8
<b>CONFORMITY</b> (obedience, honoring parents and elders, self- discipline, politeness)	0	1	2	3	4	5	6	7	8
<b>SECURITY</b> (national security, family security, social order, cleanliness, reciprocation of favors)	0	1	2	3	4	5	6	7	8



## Your relationships with others...

This questionnaire is designed to assess the way in which you mentally represent important people in your life. You'll be asked to answer questions about your parents, your romantic partners, and your friends. Please indicate the extent to which you agree or disagree with each statement by circling a number for each item.

Please answer the following questions about your **mother or a mother-like figure**

1. It helps to turn to this person in times of need.

strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your **father or a father-like figure**

1. It helps to turn to this person in times of need.

strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your **best friend**

1. It helps to turn to this person in times of need.

strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.

strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your **dating or marital partner**.

\*Note: If you are not currently in a dating or marital relationship with someone, answer these questions with respect to a former partner or a relationship, or leave this section blank.

If you are answering the following with regards to a previous relationship, please circle the word YES here.

1. It helps to turn to this person in times of need.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.

strongly disagree 1 2 3 4 5 6 7 strongly agree

## Relationship satisfaction with your partner...

Please circle the letter for each item which best answers that item for you.

\*Note: as previous section: If you are not currently in a dating or marital relationship with someone, answer these questions with respect to a former partner or a relationship, or leave this section blank.

If you are answering the following with regards to a previous relationship, please circle the word YES here.

How well does your partner meet your needs?

A	B	C	D	E
Poorly		Average		Extremely well

In general, how satisfied are you with your relationship?

A	B	C	D	E
Unsatisfied		Average		Extremely satisfied

How good is your relationship compared to most?

A	B	C	D	E
Poor		Average		Excellent

How often do you wish you hadn't gotten in this relationship?

A	B	C	D	E
Never		Average		Very often

To what extent has your relationship met your original expectations:

A	B	C	D	E
Hardly at all		Average		Completely

How much do you love your partner?

A	B	C	D	E
Not much		Average		Very much

How many problems are there in your relationship?

A                      B                      C                      D                      E  
 Very few                                      Average                                      Very many

## Your Meaning in Life...

Please take a moment to think about what makes your life feel important to you.

Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers.

	Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
I understand my life's meaning.	1	2	3	4	5	6	7
I am looking for something that makes my life feel meaningful.	1	2	3	4	5	6	7
I am always looking to find my life's purpose.	1	2	3	4	5	6	7
My life has a clear sense of purpose.	1	2	3	4	5	6	7
I have a good sense of what makes my	1	2	3	4	5	6	7



life meaningful.							
I have discovered a satisfying life purpose.	1	2	3	4	5	6	7
I am always searching for something that makes my life feel significant.	1	2	3	4	5	6	7
I am seeking a purpose or mission for my life.	1	2	3	4	5	6	7
My life has no clear purpose.	1	2	3	4	5	6	7
I am searching for meaning in my life.	1	2	3	4	5	6	7

## More about you...

I would like to know a little bit about you. Please feel free to respond to the questions below by circling the appropriate option or entering text where necessary.

Sex: Male Female

Ethnicity: Māori New Zealand European/ Pākehā Asian Pacific European Other:

\_\_\_\_\_

Your age: \_\_\_\_\_

Country of birth: \_\_\_\_\_

Current educational level:

- i. Less than or did not complete high school
- ii. High School qualification
- iii. Tertiary certificate or diploma (not a degree)
- iv. Bachelor's degree (eg. BA, BSc)
- v. Postgraduate (eg. Masters or postgraduate diploma)
- vi. Doctoral degree (eg. PhD)
- vii. Other (please specify): \_\_\_\_\_

Current occupation: \_\_\_\_\_

Religious Affiliation:

- i. No religion
- ii. Christian
- iii. Jewish
- iv. Muslim
- v. Hindu
- vi. Buddhist
- vii. Other (*please specify*): \_\_\_\_\_

What was your marital status at the time of your NDE?

- i. Married
- ii. Single
- iii. De facto
- iv. Divorced

v. Widowed

Have you had any children since your NDE?

i. No

ii. Yes, How many? \_\_\_\_\_

What was your occupation at the time of your NDE? \_\_\_\_\_

What was your educational level at the time of your NDE?

viii. Less than or did not complete high school

ix. High School qualification

x. Tertiary certificate or diploma (not a degree)

xi. Bachelor's degree (eg. BA, BSc)

xii. Postgraduate (eg. Masters or postgraduate diploma)

xiii. Doctoral degree (eg. PhD)

Other (please specify): \_\_\_\_\_

At the time of your NDE, were you under the influence of drugs or alcohol?

No

Yes

If yes, was your drug or alcohol use due to an addiction?

No

Yes

At the time of your NDE, had you ever been diagnosed with some type of brain trauma?

No

Yes - please specify: \_\_\_\_\_

At the time of your NDE, did you suffer from some sleep disorder, other than insomnia of less than 1-2 nights?

No

Yes - please specify: \_\_\_\_\_

At the time of your NDE, had you ever been diagnosed with a mental illness?

No

Yes - please specify: \_\_\_\_\_

At the time of your NDE, had you ever suffered from diagnosable memory difficulties [e.g., Amnesia, Dementia]

No

Yes - please specify: \_\_\_\_\_

At the time of your NDE, did you hold or follow a particular religious orientation?

No

Yes - please specify: \_\_\_\_\_

Did you know what an NDE was prior to your experience?

No

Yes

Thank you for your time in completing this questionnaire. I appreciate your time and effort in sharing your experience with me. I hope it has been beneficial for you, and know that your experience makes a valuable contribution to our understanding and knowledge of NDEs in New Zealand.

## Appendix C

### Aspects of Near-Death Experiences that Bring About Life Change

#### INTERVIEW INFORMATION SHEET

##### Who is doing this research?

My name is Kate Steadman and I am conducting this research as part of a Master of Arts thesis requirement through the School of Psychology, at Massey University, Palmerston North, New Zealand. I am being supervised by Dr Natasha Tassell-Matamua, who is a lecturer in the School of Psychology. Both of our contact details can be found at the end of this information sheet. This will be a research project investigating what aspects of Near-Death experiences bring about life changes.

##### What is this research about?

I am interested in exploring Near-Death Experiences (NDEs) and the aspects of the experience that lead to the aftereffects they have on people's lives. Many researchers have documented the specific aftereffects that NDErs have, however little has been done around what particular aspects of their experience lead to these changes, in particular there has been little research in New Zealand. By doing this research, I hope to extend understandings of NDEs in New Zealand and identify specific features of NDEs that lead to life changes that so many NDErs face.

##### Who can take part in this research?

If you are aged 21 years or older, and believe you have had a NDE at some stage, then I would invite you to participate in this study. An NDE may be defined as a situation where you were dead, dying or close to death, but still felt as though something unusual yet significant happened to you during this time, such as: leaving your physical body; passing through a tunnel; seeing an unusual light; reviewing your life; seeing deceased relatives or religious figures; an altered perception of time; feeling like you went to another place such as heaven, paradise, or even a place such as hell; overwhelming feelings of love; happiness joy, or perhaps fear and sadness; or any combination of the above. This experience may have resulted in significant and fundamental life changes, and a loss of the fear of death. If you believe you have had such an experience, then I would be very interested in having you participate in this research.

##### What will I be asked to do?

You will be asked to go to the online website to complete the questionnaire at a time that suits you, or I can provide you with a hard copy at the interview. The questionnaire should take about 15-20 minutes to complete. You will not be asked to include your name in the questionnaire and so your identity with respect to the questionnaire can remain private.

##### What happens in the interview?

Along with the questionnaire which you can fill out online or in paper form at any time, I would like to conduct a face to face interview with you. To participate in the interview, I would ask you to travel to Massey University at the Palmerston North campus, so you must have the ability to attend the interview at this location. Here I will conduct the interview in a private room or office on campus. You will be reimbursed for your travel and time costs with a \$20 petrol or gift voucher. The interview will take approximately 1-2hrs of your time. During the interview I will ask you a series of questions about you, your experience, and the effect your experience has had on you and those around you since. The interview will be recorded and I will transcribe it at a later date. The transcription from the interview will be de-identified and in no way linked to your identity. The transcription will also be securely stored for a period of five years as outlined below in your rights as a participant.

The interview will also be recorded as I will transcribe the interview at a later date. I will ask you if I can archive de-identified (not linked to your identity) data from your interview. Your wishes will be respected.

If you wish, I can post or email a copy of a summary of the results of the research, once it is completed. Any information that you have contributed will not be personally identifiable

### **What are my rights as a participant?**

As a participant in this research, you have the right to answer as many or as little questions as you choose. You may also withdraw from the interview process and/or ask questions about the research, at any time. The interview will be digitally recorded and later transcribed. The transcribed interview will be returned to you for editing if you wish, prior to me using the information in my research.

All information you provide to me will be held securely and your privacy will be respected. It is a requirement that all data is stored for a period of five years from the completion of my research. I will be responsible for secure delivery of the material to my supervisor, Natasha, while secure storage and disposal of material after five years will be Natasha's responsibility. During my research and the five years that the data is stored no one will have access to the information you provide, and any information I use in my research will not be able to identify you. Once the research is completed, I will send you a summary of the research findings. I will also be happy to provide further information regarding NDEs if requested.

While people are often pleased to be provided with the opportunity to share their NDE, speaking about it can at times raise emotions and other concerns. If participating in the research causes any distress or other emotions, you will be welcome to contact my supervisor or me to discuss these. We will also be able to provide you with details of other support or resources you could access to assist with any concerns.

### **I have read all the information and wish to participate in an interview**

If after reading all the information you wish to participate in an interview or require further information before making a decision, please contact myself, Kate, or my supervisor Natasha using the details below to gain more information and/or arrange a convenient time to conduct the interview.



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**Who can I contact about the research?**

I am available to answer any questions about the research and can be contacted on the details below. My supervisor is also available for contact.

<p><b><u>Kate Steadman</u></b></p> <p><a href="mailto:kate.steadman.1@uni.massey.ac.nz">kate.steadman.1@uni.massey.ac.nz</a></p> <p>+64274256542</p>	<p><b><u>Dr Natasha Tassell-Matamua</u></b></p> <p><a href="mailto:N.A.Tassell-Matamua@massey.ac.nz">N.A.Tassell-Matamua@massey.ac.nz</a></p> <p>+64 6 3569099 x85080</p>
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*This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 14/33. 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](mailto:humanethicsouthb@massey.ac.nz).*

Appendix D

**Aspects of Near-Death Experiences that Bring About Life Change**

**PARTICIPANT CONSENT FORM**

I have read the Information Sheet and have had the details of the study explained to me. 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 the interview being sound recorded.

I wish / do not wish to have my transcribed recordings returned to me as a word document.

I agree to have my de-identified data stored securely for a period of five years from the completion of the research.

I agree to participate in this study under the conditions set out in the Information Sheet.

**Signature:**

**Date:**

\_\_\_\_\_

**Full Name:**

\_\_\_\_\_





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Appendix E

**Aspects of Near-Death Experiences that bring about life change**

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature:.....Date:.....

Full Name

Printed:.....

## Appendix F

### Interview Schedule

#### Background

How old were you when you had your NDE?

Do you remember it well?

#### About your NDE

Can you tell me about your experience?

- Tell me about the content of your experience in detail.
- Was it positive or negative? How so?

Do you feel like you have experienced significant changes since your NDE?

- Are these due to the fact that you almost died or is it more than that?

#### Aftereffects

How has your experience affected you since?

- Has your experience had a significant impact on your life?
- How has your experience changed you?
- How has your experience changed your attitudes and values?
- Has your experience impacted those around you? How?

#### Relationship between content and life changes

Do you feel as though any particular part of your NDE contributed to your changes?

- What aspects?
- How did they contribute?
- How do you feel about death and dying now? \*what made your fear of death decrease?