

Death Anxiety and Experiences of Transcendence: Peak Experiences of Skydivers

by

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Abstract

Terror Management Theory (TMT) suggests that human beings battle to protect ourselves from the potential terror resulting from the juxtaposition of our need for self-preservation and our unique human ability to realize that we cannot avoid death. Over 150 studies have shown that when people are primed with the awareness of mortality they grasp onto their cultural world view more tenaciously than when they are primed with another unpleasant stimulus (i.e., show “cultural world view defense”). Applying the principles of TMT, the first purpose of the present research was to examine whether the amount of peak experiences reduce the tendency to show cultural world view defense (an indicator of unconscious death fear) after a death prime. The second purpose was to examine a new model of implicit spirituality, by testing proposed relationships between implicit spirituality, peak experiences and intrinsic religiosity, and by testing whether peak experiences and/or intrinsic religiosity mediate the relationship between implicit spirituality and conscious and/or unconscious death fears.

Skydivers were chosen as the primary participants for this research because of their unique characteristics in the context of TMT research. Previous research suggests that veteran skydivers have peak experiences as they skydive, and I assumed that their peak experiences would not be influenced by intrinsic religious beliefs. Novice skydivers may have their implicit spirituality brought forth because of their proximity to possible death. The willingness of both groups to place themselves close to death allowed their reactions to unconscious and conscious death fears to be assessed in a real setting. Novice skydivers’ proximity to death made them an ideal group to study to see whether intrinsic

religiosity mediated the relationship between their implicit spirituality and conscious and/or unconscious death fears.

One hundred and twenty-five people participated in this research: 38 veteran and 46 novice skydivers, as well as 41 people who accompanied them to the drop zone. Of these, 23 veterans, 19 novices, and 22 friends returned a follow-up packet of questionnaires three weeks later. As expected, the veterans' unconscious death fear scores remained stable from pre-jump to post-jump (after the death prime), and three weeks later, whereas the novices' scores increased, but only marginally.

As predicted, the novice skydivers' implicit spirituality was significantly higher than the veterans' and was negatively correlated with their conscious death fear, which was not mediated by their intrinsic religiosity. Only the novices' follow-up (trait) implicit spirituality correlated negatively with their pre-jump unconscious death fear.

Among both groups of skydivers, there were significant relationships between implicit spirituality and peak experiences, and although the novices were significantly higher on peak experiences after the jump, peak experiences did not mediate the relationship between implicit spirituality and unconscious death fear for either group. In both groups follow-up intrinsic religiosity correlated with implicit spirituality. Peak experiences and intrinsic religiosity were not related with one another, suggesting that these are different ways of accessing an implicit spirituality. Results imply that implicit spirituality was brought forth (in the case of novice skydivers who were consciously close to death) and can be accessed through both peak experiences and intrinsic religiosity.

While novice skydivers scored significantly higher than veterans on post-jump peak experiences, female skydivers scored significantly higher than male skydivers on both measures of implicit spirituality, both measures of peak experiences, and marginally higher on intrinsic religiosity.

These findings contribute to research suggesting that people have an implicit spirituality which can be accessed through various pathways. This research also brings TMT research into a real life -- or in this case -- a real death setting, increasing its ecological validity.

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Glossary

Implicit Spirituality	an innate, personal, transcendent dimension within human experience, that does not require belief in a deity, nor an institutional basis
Peak/ Mystical Experiences	sudden, unexpected, transient, ineffable episodes of intense joy that may be experienced by anyone, emanating from many sources, resulting in a positive life transformation, (i.e., increased freedom, empathy or altruism)
Religiosity	a particular cultural framework defining what is held to be sacred, that includes a belief structure, a moral code, an authority structure, and a form of worship
Intrinsic Religiosity	reflects a sincere living of one's religion with intentionality; it is private and incorporates the emotional aspects of religiosity, people with this orientation shape their lives around this
Transcendence	an experience beyond the ordinary limits of physical human experience, in a phenomenological sense, an ineffable felt experience without the usual constraints of time and space

Death Anxiety and Experiences of Transcendence: Peak Experiences of Skydivers

We must live in the free fall of infinity. Standing on the edge, the heart opens.

Thomas Moore

Introduction

Terror Management Theory (TMT) suggests that human beings battle to protect ourselves from the potential terror resulting from the juxtaposition of our need for self-preservation and our unique human ability to realize that we cannot avoid death (Arndt, Greenberg, Simon, Pyszczynski, & Solomon, 1998). Over 150 TMT studies have shown that when people are primed with death (e.g., writing about what happens at death and the emotions surrounding their death) they use defense systems to fight this terror. They grasp onto their cultural world view more tenaciously or bolster their self-esteem, more than when they are primed with another unpleasant stimulus, such as dental pain or writing an exam.

Otto Rank (1936, 1941), who is credited as a major TMT source, had suggested that mystical or creative states of consciousness may transcend or remove existential fears. By studying Rank's original ideas, I generated alternative predictions, suggesting that people who have frequent mystical states of consciousness, or who experience these states as a result of situational pressures, may not respond to reminders of death in the purely defensive way outlined by TMT.

Applying the principles of TMT, the first purpose of the present research was to examine whether the amount of peak experiences reduce the tendency to show cultural world view defense (an indicator of unconscious death fear) after a death prime. The

second purpose was to examine a new model of implicit spirituality, by testing proposed relationships between implicit spirituality and peak experiences and intrinsic religiosity, and by testing whether peak experiences and/or intrinsic religiosity mediate the relationship between implicit spirituality and conscious and/or unconscious death fears.

To pursue these goals I needed a sample that has frequent peak experiences independent of religious belief systems. Skydivers seemed to be an ideal group for many reasons: (a) previous qualitative research suggests that veteran skydivers have peak experiences as they skydive, (b) novice skydivers may have their implicit spirituality brought forth because of their proximity to possible death, and (c) peak experiences of veteran skydivers may not be influenced by intrinsic religious beliefs.

Maslow (1967) described peak experiences as “moments of great awe, intense happiness, even rapture, ecstasy or bliss – moments . . . of pure, positive happiness when all doubts, all fears, all inhibitions, all weaknesses were left behind” (p. 9). Lipscombe (1999) matched Maslow’s definition of peak experiences to the descriptions given by veteran skydivers and found qualitative similarities. This overlap suggests that peak experiences of veteran skydivers are similar to the states of consciousness that Rank theorized might overcome or transcend fears of death.

Skydiving is ranked as the most dangerous risk-taking behaviour in the world (Griffith & Hart, 2005), with a high probability of, awareness of, and direct encounter with death. As novice skydivers willingly place themselves close to death, their reaction to unconscious and conscious death fears could be assessed in a field setting. When death is an imminent possibility people may grasp onto their implicit spirituality. All people seem

to have a tacit spirituality in varying degrees (Bartocci & Dein, 2005; Grof, 1993; Hood, 1975). Recent research by Norenzayan and Hansen (2006) adds to the possibility of a core spirituality that can be accessed, especially in times of close encounters with death. They found that when people were primed with death they were more likely to endorse any spiritual belief system, even that of a different culture. It follows then, that novice skydivers should score higher on implicit spirituality, and that this should be negatively correlated with conscious, and perhaps unconscious death fear. I believed that novice skydivers would grasp onto intrinsic religious beliefs because of the possibility of death, and that intrinsic religiosity may mediate the relationship between implicit spirituality and conscious and/or unconscious death fears.

A further aspect of this research was to examine the relationship between peak experiences, intrinsic religiosity, and implicit spirituality among skydivers. Some people have an awareness of their own implicit spirituality, others become aware of this through peak or near death experiences, and others may access it through intrinsic religious beliefs. Saucier and Skrzypińska (2006) found that mystical experiences and religiosity were not correlated with each other. I believe that implicit spirituality can be accessed through peak experiences or through intrinsic beliefs, while these latter should be relatively independent of one another. I expected that peak experiences would mediate the relationship between implicit spirituality and unconscious death fear mostly for veteran skydivers.

Terror Management Theory

Solomon, Greenberg, and Pyszczynski (2000) developed Terror Management Theory (TMT) in 1985, based on the ideas of Ernest Becker (1964/1973) and his interpretation of Otto Rank (1936/1941), who drew ideas from his teacher Sigmund Freud and philosophers such as Nietzsche. TMT brought the ideas of these psychoanalytic and existential thinkers together into a testable social-psychological model (Baldwin & Wesley, 1996). TMT suggests that human beings are in a battle to protect themselves from the potential terror resulting from the biological need for self-preservation juxtaposed with the unique human ability to self-reflect, think causally, and project into the future, making us aware of our inevitable death (Arndt, Greenberg, Simon, Pyszczynski, & Solomon, 1998). Becker described this terror, “to have emerged from nothing to have a name, consciousness of self, deep inner feelings, an excruciating inner yearning for life and self-expression—and with all this yet to die” (1973, p. 87). Solomon, Greenberg, and Pyszczynski (1998) suggest that when human beings fully realize the inevitability of death, they become “twitching blobs of biological protoplasm completely perfused with anxiety and unable to effectively respond to the demands of their immediate surroundings” (p. 11).

Greenberg, Martens, Jonas, Eisenstadt, Pyszczynski, and Solomon (2003) suggest that the knowledge of our impending death is an omnipresent potential for anxiety, unconsciously managed by adherence to cultural world views and heightened self-esteem. Culture is seen here as a constructed set of beliefs about reality, shared by individuals in a

group (Arndt & Solomon, 2003) that gives life meaning, order, and permanence, and the possibility of either a literal or symbolic immortality (Greenberg, et al., 1990).

Any culture that is to survive requires a way of handling this terror (Greenberg et al., 1990). Thus every culture created its own view of the world. Cultural world views lend meaning through accounts of the origin of the universe, rules of behaviour, and explanations of what happens after death. Cultural world views answer such questions as, Who am I? Why am I here? What will happen to me when I die? (Solomon et al., 1998). Tolle (2004, p. 58) suggests that these ideologies can include communism, nationalism or any rigid religious belief system that operates under the inherent assumption that all that is worthwhile will occur in the future, thus the end justifies the means. These world views induce us to believe that we are making meaningful and lasting contributions to a reality rather than “mere animals inhabiting a pointless universe and fated only to die” (Jonas, Fritzsche, & Greenberg, 2005, p. 130). In religious belief systems, eligibility for immortality is generally restricted to those who perform correctly, making socially defined self-esteem a second major component of defense (Solomon et al., 1998). Safety and transcendence of death are promised to those who meet the prescribed standards of value. The anxiety-buffer is maintained through cultural rituals as long as one has faith in their validity and believes that one is meeting these standards (Greenberg et al., 1990).

TM research has shown that people unconsciously bolster their explicit world views when threatened by thoughts of their own death (Solomon, Greenberg, & Pyszczynski, 2004). This affects a myriad of activities, such as pro-social behaviour, prejudice, aggression, nationalism, risk taking, sexual attitudes, and close relationships.

Because cultural world views ameliorate the anxiety associated with the awareness of death, the presence of others with different beliefs creates a challenge to the claim of absolute truth to one's cultural world view, lessening the anxiety-buffering capacity of the world view, and activating defensive responses to restore psychological calm. To restore equanimity one either adopts the new cultural world view, or more likely enhances allegiance to the original world view (Greenberg et al., 1990). TMT research has shown that most people cling more strongly to their own views, and derogate those who do not.

TMT also suggests that people boost their self-esteem when threatened by those with differing world views. Self-esteem is at least partially based on the belief that one is living up to those standards of value and the sense that one is an object of primary value in a meaningful universe. TMT researchers found that neuroticism is inversely related to self-esteem, and that people with higher levels of neuroticism and depression do not feel connected to a cultural world view and respond more strongly to unconscious death anxiety (Arndt & Solomon, 2003; Simon, Greenberg, Harmon-Jones, Solomon, & Pyszczynski, 1996).

Typical Terror Management Experiments

To make mortality salient, typical TMT experiments involve having participants write down what they think will happen to them as they physically die, and/or what emotions the thought of their own death arouses in them. The comparison group is asked about another anxiety-provoking situation, such as dental pain, public speaking, or taking an exam. Well over 150 studies have shown that after being primed with thoughts of their own death participants favour that which validates their own cultural world view, increase

liking or rewards for those who share similar world views, denigrate those with differing political or religious views, and judge those who violated cultural norms more harshly (Greenberg et al., 2003; Solomon et al., 2004). These effects occur only in response to mortality salience and not to other anxiety-provoking stimuli.

Even more interesting is the finding that these effects are most apparent when the stimulation or death prime is subliminal or outside of awareness. Following Rank, Solomon, Greenberg, and Pyszczynski (2004) surmise that, “The desire for immortality represented by this repressed fear [of death] is transformed and represented in consciousness as the cultural worldview” (p. 34). When unconscious thoughts of death approach consciousness many people fortify their belief in their cultural world view to maintain their psychological equanimity (Solomon et al., 2004). These effects are not evident when people are focally aware of what they are defending against. Accordingly, TMT works best after a few minutes delay following a death prime (Solomon et al., 1998) and when thoughts of death have been buffered by distractor tasks. For instance, Greenberg, Pyszczynski, Solomon, Simon, and Breus (1994) found that death-theme effects are low immediately after mortality salience, but increased after a delay and distraction.

Theoretical Origins of TMT

Ernest Becker (1924-1974). TM theorists cite Ernest Becker, chiefly influenced by Otto Rank and, to a lesser extent Sören Kierkegaard, for suggesting that human beings have an underlying fear of death and use several defenses against this fear. In *The Denial of Death*, Becker (1973) states that, “Man is literally split in two: he has an awareness of

his own splendid uniqueness in that he sticks out of nature with a towering majesty, and yet he goes back into the ground a few feet in order blindly and dumbly to rot and disappear forever.” (p. 26).

To alleviate this dread, which Rollo May (1958) called “narcotizing the despair” (p. 87), people use a myriad of defenses. Becker (1973) gives these examples of defenses; “a god, a string of sexual conquests, a Big Brother, a flag, the proletariat, and the fetish of money and the size of a bank balance” (p. 56). Tolle (2004) considers these as possessions, and as both personal and collective identifications (p. 200). Becker even suggests that the armour of character is so vital that to shed it subjectively signifies death and madness.

Becker (1973) explains why people use these defense systems: “The irony of man’s condition is that the deepest need is to be free of the anxiety of death and annihilation; but it is life itself which awakens it, and so we must shrink from being fully alive” (p. 66). Becker (1973) further suggested that these “defenses that form a person’s character support a grand illusion, [which lets us] . . . understand the full drivenness of man. He is driven away from himself, from self-knowledge, self-reflection. He is driven toward things that support the lie of his character, his automatic equanimity.” (p. 56). People may be consciously and unconsciously building and protecting their defenses to avoid their death fear and this requires considerable effort.

These character defenses imprison people. When we live in a place of fear and build defenses against this fear of death, we cannot fully experience life. As in the game of chess, we can never win or even contemplate winning when we are only playing

defensively. We need to realize that these defenses are not who *we* are. Tolle (2004) writes that we will come to understand this as death approaches. He explains, “Death is a stripping away of all that is not you. . . . The secret of life is to ‘die before you die’ – and find that there is no death.” (p. 46). It is ironic that we create such elaborate schemes to defend ourselves from this fear, and in so doing miss enjoying and experiencing life. To fully experience life requires the facing and embracing the fear of death, which is something that Rank had discussed years earlier.

Otto Rank (1884–1939). Besides Becker, TM theorists cite their chief founder as Otto Rank, one of Sigmund Freud’s early students who later broke away and created his own version of an existential psychodynamic psychology. Rank had a much broader perspective than Becker noted, or that TMT has utilized.

Rank (1932) discussed two poles of fear: fear of life and fear of death. He suggested that artists and neurotics experience these more intensely than the average person. In the neurotic the fear of life predominates, and so stifles expression via defensive repression. Artists, on the other hand, are driven more by the fear of death to immortalize themselves through art. Rank wrote that the essential factor of the artist’s creative dynamism arises from a personal conflict between the individual death problem and collective immortality.

An increased fear of death may lead to a desire to leave a mark of personal and collective existence. In *Beyond Psychology*, Rank (1941, published posthumously) interpreted the will to immortality as man’s innate sense of connection to life in all aspects of his experience, personal, social, and cosmic (Progoff, 1956). Our will to immortality is

inherent in our nature (Progoff, 1956), fundamentally unconscious and non-rational (Rank, 1936), but not in its essence defensive. This may be non-rational, because it is something that we feel or experience, rather than something that can be explained cognitively.

Rank's analysis of creativity lead him to the view that the direct experience of creativity with its spontaneous ecstatic components could transcend fear of death directly, beyond the mere defense of cultural world view. Rank (1941) wrote that, "Man is born beyond psychology and he dies beyond it but he can live beyond it only through vital experience of his own—in religious terms, through revelation, conversion or rebirth" (p. 16).

Ira Progoff (1956) interpreted Rank's "vital experience" as something which: takes place at a psychic level deeper than rationality, and its result is a sense of connection to life that extends beyond the present moment in all directions of time . . . In this experience the individual finds a "new soul" not quite literally but in essence, because he now perceives his personal existence in a new light. Rank spoke of this in traditional religious terms . . . but he was referring to the general pattern of spiritual transformation, and not to a specific theology . . . and because the new perception of reality changes the nature of life itself, the individual becomes capable of being in actuality a kind of person he could not be before (pp. 250-251).

Rank anticipated later Transpersonal psychology and its focus on the transformative effects of higher states of consciousness. Rank (1932) differentiated two primary

motivation systems, one orientated toward reducing the anxiety engendered by the fear of life and death; and the other toward growth and expansion, as in vital experience akin to direct religious experience. It seems that Becker and consequently TMT researchers ignored the growth and transformative potential that the awareness of death can provoke. Thus the present research will explore whether experiential transformation means that death no longer provokes anxiety, so does not need to be defended against.

Transpersonal/Experiential Alternative to Standard TMT:

TMT misses key points of Nietzsche, Kierkegaard, Rank, and the Transpersonalists

Sören Kierkegaard (1813-1855) believed that human beings desire to be eternal, like God, but have to deal with the reality that existence is temporary. Dealing with one's finiteness forces one to face issues of choice and freedom (Gron, 2004) and allows one to become fully human. Kierkegaard noted that a distinct characteristic of man is his capacity for, and awareness of, his own potentialities (May, 1967). As Kierkegaard succinctly remarked, "To venture causes anxiety, but not to venture is to lose one's self. And to venture in the highest sense is precisely to be conscious of one's self." This awareness of a higher self may allow us to transcend death fear and focus on life and our potential.

Kierkegaard focussed on theological views and Friedrich Nietzsche (1844-1900) focussed on a life force. Nietzsche suggested that those who develop their "will to power" are creative and dynamic (Sharf, 2004) and that a capacity for ecstasy is its fullest expression. Kierkegaard, Nietzsche, and Rank emphasized the subjective and non-rational nature of human beings.

Both Becker and TM theorists ignored Rank's concepts of transformation, based on creativity and the felt timelessness and immortality that can come with ecstasy or vital experience. Rank's vital experiences are what transpersonal psychology later called peak experiences (Maslow, 1968). Peak experiences allow a glimpse of states that are felt to directly transcend space and especially time.

Rank and the Transpersonalists understood the concepts of self-transcendence, development, and potential, points that TMT misses with its exclusive focus on anxiety and defense. TMT uses the terms *anxiety*, *fear* and *terror* interchangeably and assumes that they are all destructive. TMT says that humans experience *fear* whenever survival is threatened and that the knowledge of our eventual death creates the potential for *anxiety* (Greenberg et al., 2003) or paralysing *terror* (Greenberg et al., 1990). Neither previous philosophers nor many present researchers assume that these terms are interchangeable, nor necessarily negative. Kierkegaard regarded anxiety as a ubiquitous teacher we carry with us. The existential tradition differentiates between normal and neurotic anxiety. Goldstein and Palmer (1963) consider normal anxiety an experience of growth. When someone avoids facing a real fear or experience that provokes a normal existential anxiety, he or she blocks awareness, resulting in neurotic anxiety (May, 1967). Rather, experiencing and dealing with a more intrinsic or existential anxiety can create a sense of self, and realization of one's potential.

*Mystical and Peak Experiences**The Concept of Direct Experience*

Immanuel Kant (1724-1804) wrote that experience comes from two sources: things as they are in themselves, and the mind (Heidbreder, 1933). He also said that some ideas are innate and stem from the intuitive senses of the mind (Cloninger, 2004) and that the root of these innate and intuitive ideas could be spiritual. Kant influenced both William James (1902) and Rudolf Otto (1923) who separated a direct or “numinous” experience from religious dogma (Hunt, 2000).

Martin Heidegger (1889-1976) posited a primary awareness of existence, which he named *Dasein*. Humans are concerned with being ahead of themselves in time facing an extrinsic unknown, which is death. We have an inherent sense of Being given to us by the openness of time ahead, of which we are constantly aware, but cannot change (Hunt, 2003). Being open to this experience involves a “standing in dread,” a uniquely human intrinsic anxiety and strangeness (May, 1967). We then have a choice of responses: we can open ourselves to the unknown or fill our lives with everyday busyness. Heidegger (1927) believed that only the first choice moves us toward a state of “authenticity.” This unique human experience of openness of time corresponds to our human potential for a felt sense of transcendence. This openness allows us to cultivate an awareness of mystical states, which Heidegger (1927/1962) referred to as “primordial being experience”, James (1902) called “thatness”, and which Almaas (1986) termed a timeless quality of “presence” (Hunt, 2003).

Definition of Mystical and Peak Experiences

Mystical experiences share common characteristics regardless of culture or religion (Bartocci & Dein, 2005). Hood, Ghorbani, Watson, Ghramaleki, Bing, and Davison (2001) suggest that there is “a common core to all mystical experience, independent of the interpretation of that core” (p. 691). Stace (1960) suggested that this common core is independent of both culture and person. Steindt-Rast (1984) says that every major religion has its foundation in original mystical experience. This suggests a common spiritual core, which may manifest in mystical experiences for some people. The mystical experience may be interpreted according to cultural beliefs, but the actual experience is to some degree culture neutral.

William James (1902) described four qualities of mystical experiences: ineffability, a noetic or cognitive quality, transience, and passivity or detachment. Other researchers have added a sense of unity and positive affect (Noble, 1987). Maslow (1967) similarly described peak experiences as “moments of great awe, intense happiness, even rapture, ecstasy or bliss – moments . . . of pure, positive happiness when all doubts, all fears, all inhibitions, all weaknesses were left behind” (p. 9). Otto (1923) described the experience of the numinous as “something that entrances . . . bewilders and confounds . . . captivates and transports . . . with a strange ravishment, rising often enough to the pitch of dizzy intoxication” (p. 31). James (1902) believed that for these experiences to be genuine they must have a transformative effect on the individual in the direction of increased freedom, empathy and compassion. This may in turn precipitate changes in the beliefs of the group. Jung (1969) wrote that mystical experiences can be an indicator of health and a

potent instrument of transformation. Maslow (1970) agreed that transcendent experiences can lead to a permanent transformation toward wholeness and health, although both Maslow and Jung agreed that they could also be destabilizing to one's ordinary sense of self.

When these experiences occur time and even death become meaningless. Non-sectarian belief in immortality may result when these experiences are intense enough. Lifton (1973) discusses a form of symbolic immortality as "experiential transcendence . . . a state so intense that in it time and death disappear. . . the restrictions of the senses -- including the sense of immortality -- no longer exist" (p. 7). Maslow even suggested that, "the most poignant living had a paradoxical something of eager or willing dying in it" (1968, p. 112). When these experiences occur, people may no longer fear death.

During mystical or peak experiences, there is no sense of time, rather the experience is both timeless and spaceless. This is in stark contrast to the way most of us live our lives, focussing on the past and the future, missing the present. As the 13th Century mystic, Meister Eckhart explained, "Time is what keeps the light from reaching us. There is no greater obstacle to God than time. . . there exists only the present instant. . . a Now which always and without end is itself new." (Coffey, 2008, p. 52). Various philosophies suggest that being fully present in the moment (in the felt absence of linear time) will lead to mystical experience. For instance, Rumi, the teacher of Sufism said, "Past and future veil God from our sight: burn up both of them with fire." (Tolle, 2004, p. 53). The Zen tradition speaks of the "absolute tranquillity in the present moment" and

asks, “If not now, when?” (Tolle, 2004, p. 52), a question suggesting that present experience is more meaningful than future strivings and past regrets.

Perhaps peak experiences, which provide a sense of felt eternity, may preclude fear of death, so there is nothing left to defend against. If we are no longer concerned with immortality, neither does death have any sting. The removal of the fear of death through mystical or peak experiences is a possibility that TMT does not consider. The amelioration of death fear through peak experience would be more direct and immediate than the cultural belief or self-esteem defenses or buffers that are the focus of TMT research.

Empirical Explorations of Mysticism

Combining information from William James and Rudolph Otto, Hood created his Mysticism Scale (1975) to quantify mystical experiences. This scale uses Stace’s (1960) concept of mysticism, which is based upon two assumptions: that mystical experience is “a universal experience that is essentially identical in phenomenological terms despite wide variations in ideological interpretation of the experience”, and that each experience does not necessarily involve all of the core categories (Hood, 1975, p. 30).

Mysticism is one component of a more general dimension of imaginative absorption, also a predictor of hypnotizability, and spontaneous altered state experience (Hunt, Dougan, Grant, & House, 2002). Tellegen and Atkinson’s (1974) Absorption also overlaps with McCrae and Costa’s (1982) Openness to Experience (Hunt et al., 2002). Absorption is correlated with a “proclivity to expanded awareness and altered states of consciousness, the tendency to become highly absorbed in imagination, nature, and/or creative activity, vividly imagistic and synesthetic experience, and a general sensitivity

and responsiveness” (Hunt, 2000, p. 382). McCrae suggests that Openness to Experience incorporates intuitiveness and spontaneous altered states, fantasy proneness, aesthetic sensitivity, empathy, and intellectual curiosity (McCrae, 1996). Hunt et al. (2002) suggest that Openness to Experience and Imaginative Absorption can lead to either integrative (growth enhancing) states or dissociative states, and accordingly found that high scores on Hood’s (1975) Mysticism Scale and high scores on Bernstein and Putnam’s (1986) Dissociative Experiences Scale were each significantly related to Absorption, but not to each other. Hunt and his colleagues (2002) also found that people who scored high on Dissociative Experiences scored high on Neuroticism, but those who were high on the Mysticism Scale, did not score high on Neuroticism.

Flynn (2005) found that Caucasians who were high on Openness to Experience had less prejudiced attitudes toward African Americans. This suggests that being high in Openness to Experience in itself may correlate with clinging less to one’s cultural world view, if derogating others who are different is one way that defense against unconscious death fear is manifested.

An ideal way to test the Rankian hypotheses that direct transcendence is a way of alleviating death anxiety would be to study groups who have high levels of direct mystical experience independent of, or specifically in the absence of, regular, sanctioned religious beliefs. When people have religious beliefs it is difficult to parse whether it is the direct experience or the beliefs which alleviate death fear.

I considered using people who had undergone a near death experience (NDE), except that these people tend to translate that experience into religious beliefs. NDE is

defined as a profound subjective event with transcendental or mystical elements that many people experience on the threshold of death (Greyson, 1999). NDE seems to take people to a higher level of consciousness that is only achieved by mystics after a great deal of time and effort. These people “find themselves in an urgent search to understand and, in a sense, harness forces activated within them” (Quinby, 1989, p. 106), and often report afterward a markedly reduced fear of death and dying. Hilary Rhodes described her NDE in an avalanche as, “[I]t doesn’t actually hurt to die, that once one is in the death process, it is just incredibly comforting. There was no physical pain, it was just a whizzing along into a new experience. . .” (Coffey, 2008, p. 252). Accordingly, NDE people may also not respond to TMT manipulations, due to their peak experiences, but I found a different group of people whom I believe have peak experiences without religious beliefs.

Skydivers

Skydivers are an interesting potential group with which to assess the effects of peak experience separate from orthodox religious beliefs. It seems that skydivers do not seek peak experiences; rather the experience takes them by surprise (Lipscombe, 1999). Some skydivers find the experiences so intense and so profound that it becomes a major reason to continue jumping. Independent of their levels of orthodox religious belief, veteran skydivers may be relatively immune to the cultural defense model of TMT.

Skydiving is ranked as the most dangerous risk-taking behaviour in the world (Griffith & Hart, 2005), with a high probability of, awareness of, and direct encounter with death. Skydivers fall freely from an airplane at 3000 to 4600 metres and reach a terminal velocity in excess of 160 kilometres per hour (Lipscombe, 1999). Skydivers are

made aware of the potential for death and injury through training, continued education, publications and waivers of liability (Griffith & Hart, 2005). In fact, no insurance company will insure a drop zone (Grech, July 25, 2007). During my research, one novice skydiver described her pre-jump training as “Death, death, death.”

In skydiving there is “an acceptance of the intense levels of fear and anxiety, the possibility of physical harm, and even death, for the special experience gained during the jump” (Lipscombe, 1999, p. 282). As a 29 male veteran (1000 jumps) stated, “We don’t have a death wish, we have a life wish! A wish to live life to the fullest and if by chance we do die skydiving, then at least we died doing what we loved.” (Celsi, Rose, & Leigh, 1993).

Lipscombe (1999) reported that “the exhilaration of the free-fall, the relaxation, the peace and tranquillity, the silence of the parachute ride and the physical beauty of the landscape, give rise to a collection of indescribable feelings which skydivers believe are unique to the recreation of skydiving” (p. 268). These accounts seem identical to descriptions of peak experience, which have been characterized as “feelings of acute well-being, peace, calm, and stillness, detachment, uniqueness, freedom, floating, flying, and weightlessness, ecstasy, being in the present, immersed in the moment, immortality, unity, altered perceptions of time and space, self-validation and awareness of the other” (Privette, 1982, p. 247). Indeed, Lipscombe matched skydivers’ descriptions of their experiences to Maslow’s qualities of peak experiences and found them to be similar.

Garrison (1975) suggests that the skydiving experience is “unimaginable, its immediacy is such that one cannot piece together a satisfactory inkling of it . . .

resembling rapture of the deep” (p. 55). He describes the free-fall as “a trip into the unknown and dark interior of the soul where children’s terrors dwell” (p. 49). This is reminiscent of Winnicott’s (1962) description of “primal agonies” of infancy as feelings of falling forever, and Tustin’s (1986) reports from recovered autistic and schizophrenic children of falling into an infinite black nothingness. This may be “the luminous splendour of the colourless light of Emptiness” described in the Tibetan Book of the Dead which Tolle (2004, p. 143) says most people miss because of too much fear, resistance, attachment to physical sensations and identification with their sense of self. Children may not have built such strong defenses against this and only a few others may be open to this experience. This primal fear of the black nothingness may be overcome through fully experiencing it without defense (Hunt, 2003), which may be part of both the peak and the skydiving experience. Perhaps facing the deep blackness and overcoming the fear allows the experience to transmute into rapture.

Risk Taking and Sensation Seeking

Experiencing fear seems to be an integral part of high risk activities. Participants in high-risk sports score high on measures of sensation seeking (Price & Bundesen, 2005). Anyone who skydives even once is probably going to score high on sensation seeking, but those who continue may be seeking something deeper. Celsi, Rose, and Leigh (1993) report an evolution of motives from novice to veteran skydivers, shifting from thrill seeking, to pleasure, to experiences of ‘flow’. Flow experiences overlap with Maslow’s peak qualities (Privette, 1983). Lipscombe (1999) found high associations of peak experiences in veteran skydivers, but not in novices. One 58 year old male skydiver (1700

jumps) with whom I spoke said that only after 200 skydives does the experience become pleasurable, until that point one concentrates on getting everything right, and only later can one appreciate the sheer joy. Eckhart Tolle (2004) writes that the reason that people engage in high-risk activities is that it “forces them into the Now – that intensely alive state that is free of time . . . free of thinking. . . Slipping away from the present moment even for a second may mean death.” (p. 51). The experience of being present in the moment, which may happen during skydiving, may be so wonderful, that people wish to return there time and time again. Although some attribute continued skydiving to thrill seeking, it may actually be the sensation of tranquility that propels people to continue skydiving.

First General Hypothesis: Veteran Skydivers

TMT may not apply to veteran skydivers, especially to the extent that they report peak experiences of a transcendent nature while jumping. Some of these skydivers may no longer jump for the thrill, but rather for the peak experience. Lipscombe (1999) found a lasting effect of the jump experience (from the whole day to the beginning of the next jump), which could be related to Maslow’s transcendence experience, described as a state of serenity, unity, and clarity of self.

Price and Bundesen (2005) found that the more that a person skydives the more that he or she wants to continue, and that this ‘addiction’ is uniquely predicted by a lower level of anxiety before the jump. Many of the skydivers whom I spoke with echoed these sentiments. Whereas many novices were pacing, clutching their hands or cracking their knuckles the veterans appeared to have little anxiety, joking or eating seconds before

taking off in the plane. In fact, one 32 year old male (3000 jumps) veteran ate a banana while skydiving. Price and Bundesen (2005) found that veteran skydivers experienced the least anxiety, compared to novice or intermediate experience skydivers.

Price and Bundesen (2005) found that neuroticism (being anxious and worrying) and measures of addiction decreased with skydiving experience, as did anxiety ratings pre- and post-jump. The decrease in anxiety correlating with increased skydiving experience suggests that either peak experiences may make them less anxious overall, potentially less afraid of death, and less responsive to TM death prime, or that they gain confidence as they get more comfortable with the sport. Either way, death anxiety should be lessened.

Thus the main hypothesis is that veteran skydivers, especially those who have peak experiences will respond less defensively to a death prime, than those people who are not having classical peak experiences (e.g., novices and non-skydivers).

Implicit Spirituality

A great deal of research indicates a universal spiritual component to human nature. Hamer (2004) suggests that human spirituality is genetically encoded. Newburg and d'Aquili (2001) studied Franciscan nuns during prayer and Buddhists during meditation, and found a similar pattern of brain activity: high activity in the prefrontal cortex (specifically positive emotions, including feelings of rapture) and reduced activity in the parietal lobes, associated with spatial perception and orientation. This lends credence to a common core of spirituality, regardless of interpretation. Even Solomon, Greenberg, and Pyszczynski (1998) state that, "Human beings are thus by nature innately spiritual

creatures . . . in the sense of religion as ultimate concern as expressed by the likes of Sören Kierkegaard and Paul Tillich” (p. 40).

Psychologists often treat religious beliefs and spirituality as interchangeable, but phrases such as “spiritual, but not religious” indicate a demarcation (Saucier & Skrzypińska, 2006). Some researchers (mostly those studying religion) attempt to parse the relationship between these two. Hamer (2004) posits that he may have located a gene for spirituality, which is different than a gene for religiosity. Gorsuch (2002) defines spirituality as, “the quest for understanding ourselves in relationship to our view of ultimate reality, and to live in accordance with that understanding” (p. 8). Spirituality focuses on an inner state of being, while religiousness concerns itself with specific and external rituals of devotion or worship (Daly, 2005). Spilka, Hood, Hunsberger, and Gorsuch (2003) suggest that spirituality is personal, does not require belief in a deity, nor an institutional basis, and that religiousness is a subset of spirituality. The last point implies that an underlying or implicit spirituality may branch off as religion, but spirituality does not require religion.

Hayes and Cowie define religion as a “particular framework that includes a belief structure, a moral code, an authority structure and a form of worship” (2005, p. 31). The external emphasis implies community activity that ties people together (Saucier & Skrzypińska, 2006). Kearl (1995) points out that religion helps to create and maintain death fear and hopes of transcendence as methods of social control. Religion seems to be the foundation of cultural world views. The delineation between spirituality and religion is not clear cut among TMT researchers, as the founder, Ernest Becker (1973, p. 64), stated

that, “Culture means that which is supernatural.” Others suggest that religious beliefs are essentially cultural world views used in the defense against death anxiety. Solomon and his associates (1998) suggest that “all cultural world views are fundamentally religious in nature, even those that make explicit claims to the contrary” (p. 15).

Some ambiguity between what is spiritual and what is religious may stem from the nature of beliefs. Beliefs across religions appear to have much in common, (i.e., karma, immortality, a discontinuity between humans and animals; Wilson, 2003). Together, these core beliefs suggest a universal, underlying spirituality deeper than any one religion, but because religious beliefs are tangible and may grow out of spirituality the two are often intertwined. Although Steindt-Rast (1984) suggests that every major religion is founded in mystical experience, the relation between an implicit or common spirituality and mystical experience remains to be determined.

Recent research by Norenzayan and Hansen (2006) supports Bartocci and Dein (2005), Grof (1993), and Hood’s (1975) suggestion of a common core to spirituality. Many religions share similar beliefs, which stem from spiritual roots. Norenzayan and Hansen studied, “Counter-intuitive person-like agents that partly exist outside of the ordinary natural world, and transcend death, deception and illusion, [and] are. . . the cornerstone of religions and pervasive all over the world” (p. 174). Norenzayan and Hansen posit that supernatural agents offer literal immortality, meaning of life, or safety and power. They found that mortality salience increased belief in both culturally familiar and unfamiliar supernatural agents, even when supernatural agency was presented in a culturally alien context (i.e., Christians endorsed belief in Buddha and Shamanism). This

suggests that when death is a possibility, people will grasp the nearest rope, no matter to which supernatural agent it is tethered.

Intrinsic Religiosity, Implicit Spirituality, and TMT

Allport (1958) suggested a distinction between those who have interiorized their religious faith and those with a more extrinsic, social view of religion. Intrinsic orientation reflects a sincere living of one's religion, whereas the extrinsic orientation uses religion "like a tool" to gain a "sense of status and security" (Feagin, 1964, p. 3). In other words, the intrinsically religious person may be more in touch with an underlying, implicit spirituality.

People who score high on intrinsic religiosity report lower levels of anxiety (Baker & Gorsuch, 1982) and greater emotional stability (Saroglou, 2002). Intrinsic religiosity is correlated with emotional well-being, personal adjustment, self-regulation, and positive emotions (Fischer, Greitmeyer, Kastenmüller, Jonas, & Frey, 2006). Prayer is inversely associated with anxiety, especially death anxiety (Koenig, 2001). Hill and Pargament (2003), and Spilka, Shaver, and Kirkpatrick (1985) found that intrinsic religiousness buffers against conscious death fear, in contrast to extrinsic religiosity, which does not (Wink & Scott, 2005).

Jonas and Fischer (2006) found that people who scored high on the intrinsic scale of Feagin's (1964) Religious Scale did not show TMT effects compared to those who scored low, were nonreligious, or were high on the extrinsic scale. Unlike the above discussion of mystical experience and implicit spirituality, such findings may fit the more traditional assumptions of TMT research concerning cultural beliefs as a primary defense

against death anxiety, rather than the transcendence of death fear. The relation between an implicit spirituality and intrinsic religiosity may accordingly be less clear than the relationship between implicit spirituality and a real mystical experience. The Transpersonalists focus on a purely experiential core to the numinous, that can also be understood as itself the most direct expression of a universal implicit spirituality. Both implicit spirituality and peak experiences can be considered as grounded in Heidegger's understanding of Dasein, since its potential for a sense of transcendence in the openness of time may be the basis for both an implicit spirituality and its expression directly in mystical states. In terms of Rank's original hypothesis, implicit spirituality and mystical experience would mediate death transcendence, and to the degree that these are separate from specific religious belief, they should be activated in skydiving, and in turn inhibit the defensive responses basic to TMT research.

Second General Hypotheses: Novice Skydivers

A second critique of TMT is more cognitive, and exploratory in the present context. Novice skydivers may also not respond to TMT because they may become hyperaware of an implicit spirituality due to their recent brush with death. Novice skydivers could also have such an implicit spirituality brought to consciousness through the mediation of initial peak experiences or cognitively through previous intrinsic religious beliefs. It is possible that through such a newly activated implicit spirituality, novice skydivers may respond less intensely to TMT manipulations.

Although TMT considers unconscious death fear only, I suggest that novice skydivers will be focally aware of death and that their conscious death fear scores will be

higher than the veterans, who are used to ‘cheating’ death. Again novice skydivers may access their implicit spirituality because of their proximity to death, or through prior religious beliefs (as the expression, “There are no atheists in foxholes” suggests) or through peak experiences.

Exploratory Hypotheses based on Implicit Spirituality

A secondary aspect of this research was to explore the relationship between implicit spirituality, peak experiences, and intrinsic religiosity. Saucier and Skrzypińska (2006) found that mystical experiences and religiosity are not correlated with each other. I believe that peak experiences and intrinsic religiosity are both related to an implicit spirituality. That is, whereas implicit spirituality can be accessed indirectly through general attitudes, it would branch out more explicitly into a specific measure of peak experiences and intrinsic beliefs. A new measure of implicit spirituality is being tested in this research, and I expect that implicit spirituality will be positively correlated with both peak experiences and intrinsic religiosity. Saucier and Skrzypińska (2006) found that their measure of peak experiences correlated significantly with several measures, and their measure of religiosity also correlated with these measures, but there was a significant lack of correlations between peak experiences and intrinsic religiosity. Therefore, I also expect no, or significantly less of, a relationship between peak experiences and intrinsic religiosity (See Figure 1).

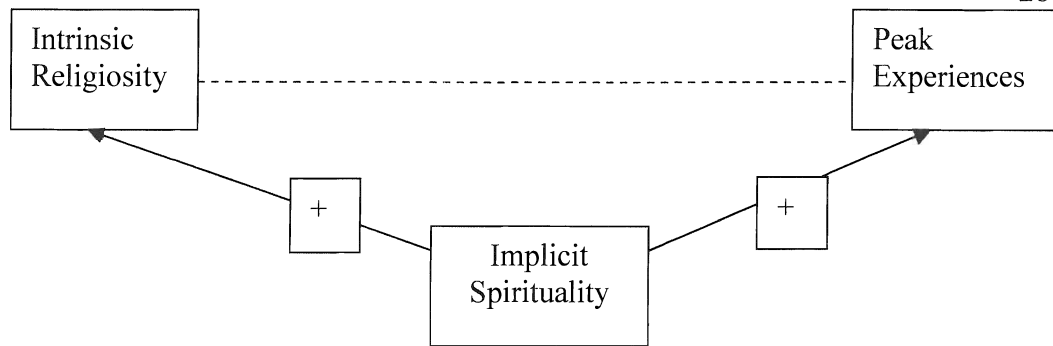


Figure 1. Relationship between implicit spirituality, peak experiences, and intrinsic religiosity. Although this is a correlational model (therefore without directional arrows), conceptually I am hypothesizing that peak experiences and intrinsic religiosity stem from implicit spirituality.

Norenzayan and Hansen's (2006) finding that being close to death increased belief in any supernatural agent, suggests that when one's underlying spirituality is brought into consciousness, any interpretation will be seized when death is a possibility. I expected that implicit spirituality would be activated in novice skydivers, and that their implicit spirituality would be positively correlated with intrinsic religiosity. I expected that veteran skydivers would be less likely to endorse intrinsic religiosity, but novice skydivers might grasp a belief system due to their proximity to possible death.

A positive relationship was expected between implicit spirituality and peak experiences in veteran skydivers. A positive relationship was expected between implicit spirituality and intrinsic religiosity in novice skydivers. This would add support to the theory of an underlying spirituality to human nature, and that there may be different means of accessing this. Some people may access this spirituality through experiential paths (i.e.,

peak experiences) and others may use a more cognitive path (i.e., intrinsically held religious beliefs).

I expected that based on implicit spirituality, both peak experiences and intrinsic religiosity would be similar predictors of unconscious and/or conscious death fear (See Figure 2). Figure 2 is actually two mediational models combined to show that peak experiences and/or intrinsic religiosity may mediate the relationship between implicit spirituality and unconscious death fear. This model is then repeated to show that peak experiences and/or intrinsic religiosity may mediate the relationship between implicit spirituality and conscious death fear.

I expected that peak experiences would mediate the relationship between implicit spirituality and unconscious death fear for veteran skydivers only. I also expected that intrinsic religiosity would mediate the relationship between implicit spirituality and conscious, and perhaps unconscious, death fear in novice skydivers. As implicit spirituality may be made salient through a close encounter with death, I expected that there would be negative correlations between implicit spirituality and conscious and/or unconscious death fears in novice skydivers.

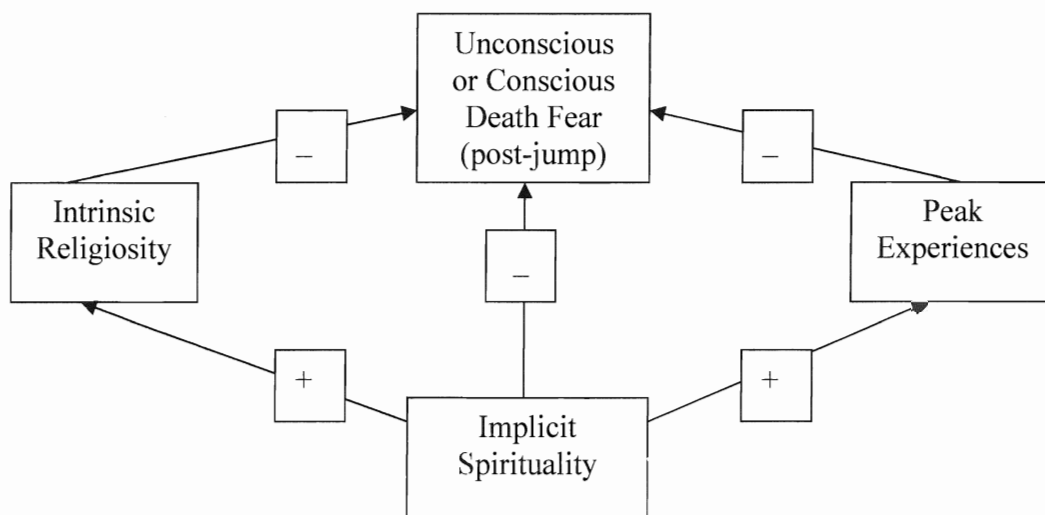


Figure 2. Proposed relationships between implicit spirituality, peak experiences, and intrinsic religiosity on conscious or unconscious death fear among skydivers.

Although Jonas and Fischer (2006) have shown that intrinsically religious people do not respond as intensely to unconscious death fear as those with an extrinsic or no belief system, the core of the present research is the Rankian model that direct peak/mystical experiences would negate TMT response to a degree exceeding any mediation associated with intrinsic religiosity or implicit spirituality alone. That is, I hypothesized that veteran skydivers would score very high on peak experiences, so that their peak experiences would mediate the relationship between implicit spirituality and unconscious death fear. I further hypothesized that the novice skydivers would score higher on implicit spirituality than veterans, which would be associated with lower scores on conscious and unconscious death fear. I also hypothesized that intrinsic religiosity would mediate the relationship between implicit spirituality and unconscious and/or conscious death fear for novice skydivers, but the magnitude of this mediation would be

less that the magnitude of the mediation of the peak experiences for veteran skydivers. I believe that veteran skydivers have suppressed, or transcended their conscious death fears, whereas the novices would be very aware of the possibility of death, so that the novices should score higher on conscious death anxiety.

Age Differences

Jung (1964) suggested that as people mature they look within themselves to find their spiritual self on their journey toward self-realization. Wink and Dillon (2002) found that people increased in spirituality (irrespective of gender) as they aged. The spirituality measure that Wink and Dillon administered contains a component of practise (based on performance of intentional activities aimed at relating to the sacred), thus incorporating an aspect of religiosity with spirituality. As the present research studied veteran skydivers as a group believed to be low on measures of intrinsic religiosity, it will be interesting to see how age correlates with measures of implicit spirituality, peak experiences, intrinsic religiosity, conscious and unconscious death fears.

Sex Differences

Previous research has found that whereas women are higher than men on extrinsic religiosity, there are no gender differences on intrinsic religiosity (Pierce, Cohen, Chambers, & Meade, 2007) nor peak experiences (de Groot, Gwynn, & Spanos, 1988). In earlier research however, Hood (1975) found that women scored significantly higher than men on his Mysticism Scale. Saroglou and Muñoz-García (2008) developed a measure of religion and spirituality, but did not cite sex differences. In general, however, women score higher than men in most measures related to imaginative absorption, openness to

experience and alterations of consciousness (Hunt, 2000), so should be higher on measures of mystical experiences. As this study introduces a measure of implicit spirituality, sex differences will be investigated and reported.

Hypotheses

Method Overview

Novice and veteran skydivers and their friends were administered a cultural world view questionnaire (which presumably assesses unconscious death fear) before the skydivers' jump. After the jump, all participants were given a death prime, a distractor, and a second cultural world view questionnaire. Then they completed measures of peak experiences, implicit spirituality, and conscious fear of death. Three weeks later, a subset of the individuals completed similar questionnaires, measuring peak experiences, implicit spirituality, and cultural world view. An intrinsic religiosity scale and a measure of sensation seeking were also included in the follow-up packet. The post-jump measures of peak experiences, implicit spirituality, and cultural world view were considered state measures, whereas the follow-up versions were regarded as trait measures (See Table 1).

General Hypotheses

I hypothesized that there were two conditions under which TMT would not be supported: first, when veteran skydivers had peak experiences, and second, more exploratory and to a lesser degree, when novice skydivers had their implicit, existential spirituality brought into awareness through their proximity to death.

Although TM theorists focus only on unconscious death fear, I also measured conscious death fear. Specifically, I hypothesized that novice skydivers would consciously

fear death more than veterans because they were so close to it. Veterans may be more accustomed to ‘cheating’ death, as they engage in this high risk activity several times weekly or even daily. Within novice skydivers low conscious death fear may be associated with high implicit spirituality scores, possibly mediated by intrinsic religiosity.

Specific Hypotheses: Veterans

- H1. Relative to the novices, veterans were expected to have higher scores on peak experiences, both on the day of the skydive and three weeks later.
- H2. It was expected that veterans’ unconscious death fear scores would remain stable or decrease after the death prime (i.e., decrease from or be similar to the pre-jump measure) and that these scores would be similar three weeks later. In contrast, it was expected that the novices’ unconscious death fear scores would be higher after the death prime than their pre-jump scores.
- H3. A negative association was expected between degree of peak experiences and unconscious death fear among veteran skydivers.
- H4. It was expected that the degree of peak experiences would mediate the relationship between the amount of skydiving experience and unconscious death fear, primarily for veterans, but potentially for all skydivers. That is having many peak experiences should account for the relationship between the amount of skydiving experience and lower unconscious death fear.

Specific Hypotheses: Novices

- H5. Relative to other groups, novices were expected to have higher scores on implicit spirituality on the day that they skydived.

- H6. A negative association was expected between implicit spirituality and unconscious death fear among novice skydivers.
- H7. Relative to other groups, novices were expected to have higher scores on conscious death fear.
- H8. A negative association was expected between implicit spirituality and conscious death fear among novice skydivers.

Exploratory Hypothesis based on Implicit Spirituality Model

- H9. A positive relationship was expected between post-jump implicit spirituality and post-jump peak experiences (especially in veteran skydivers). A positive relationship was expected between post-jump implicit spirituality and follow-up intrinsic religiosity (especially in novice skydivers). No relationship was expected between post-jump peak experiences and follow-up intrinsic religiosity for either group (See Figure 1).

Exploratory Hypothesis based on Implicit Spirituality Model: Veterans

- H10. It was expected that post-jump peak experiences would mediate the relationship between post-jump implicit spirituality and post-jump unconscious death fear for veteran skydivers (See Figure 2).

Exploratory Hypotheses based on Implicit Spirituality Model: Novices

- H11. A negative association was expected between post-jump implicit spirituality and post-jump unconscious death fear among novice skydivers (See Figure 2).
- H12. A negative association was expected between post-jump implicit spirituality and post-jump conscious death fear only among novice skydivers. It was expected that

intrinsic religiosity or peak experiences would mediate the relationship between implicit spirituality and conscious death anxiety. Whereas intrinsic religiosity may mediate the relationship, it is not a necessary component, so there may be a direct relation between implicit spirituality and conscious death fear (See Figure 2).

Method

Procedure

During the summer and fall of 2007 I recruited both skydivers and the comparison group (people who accompanied them to the drop zone, i.e., friend, spouse, or parents) at Niagara Skydive Centre to participate in this research. Virtually every person whom I asked to participate did so. I was there daily from 9 a.m. so that when they agreed to participate they could fill out a pre-jump measure of Canadian cultural world view (unconscious death fear; pre-jump; *Appendix E*). I stayed until after 10 p.m. so that later participants could complete post-jump measures twenty to thirty minutes after the final skydive of the day, which occurs at dusk. Three groups filled out five questionnaires: veteran skydivers, novice skydivers, and their friends.

After their skydive they changed out of the equipment and relaxed for a few minutes, then read and signed the Letter of Informed Consent (*Appendix D*), and filled out some demographic information (sex, age). Skydivers were asked to write down how many times they had skydived and how long they had been skydiving. Friends were asked if they have ever skydived and if they ever would. All participants addressed their envelope for the debriefing letter, which was later mailed to them. This 20 minute time lapse allowed their cortisol levels to return to normal. I did not want their cortisol levels to confound their scores on any measures. Friends completed the questionnaires at the same time as the skydivers.

Most TMT researchers instruct American participants to evaluate pro- and anti-American essays attributed to foreign students following either writing about their own

death (mortality salient condition) or writing about another anxiety-provoking situation. They consistently find that the pro-American essay and its writer are rated more positively, and the anti-American essay and its writer are rated more negatively, by those who wrote about their own death (mortality salience condition) than those participants who wrote about another anxiety-provoking situation (Greenberg, Solomon, & Pyszczynski, 1997). The TMT interpretation is that when mortality is made salient, and then relatively unconscious, participants cling more tenaciously to their cultural world view, and derogate those with a different cultural world view in an attempt to buffer anxiety and deny death (Solomon et al., 2000).

With the limited number of participants I did not want to ask half to write about an anxiety-provoking situation, so all of my participants received the mortality salience prime. They were all instructed to briefly write down the emotions surrounding their own death and what they think happens as they die and when they are dead (*Appendix I*). The effects of an explicit death prime are more robust after a delay and distraction (Greenberg, et al., 1994), so following TMT protocol, participants were asked to complete the *Positive and Negative Affect Scale* as a distractor (*Appendix J*). Participants then filled out a second similar measure of their Canadian cultural world view (unconscious death fear; post-jump; *Appendix F*) to see if their views changed as a result of mortality salience.

All participants completed Hood's Mysticism Scale measuring peak experiences (*Appendices K and L*) and Hunt's Implicit Spirituality Scale (*Appendix O*), assessing their level of implicit spirituality on the day of the skydive. Templer's (1970) Overt (conscious) Death Anxiety Scale (*Appendix H*) was the last questionnaire that they completed at the

drop zone. All participants were then given a stamped envelope containing five questionnaires: a third measure of their Canadian cultural world view (unconscious death fear; follow-up; *Appendix G*), follow-up Mysticism Scale (*Appendix M*); follow-up Hunt's Implicit Spirituality Scale (*Appendix P*); Allport and Ross's Religious Orientation Scale (*Appendix N*) and Zuckerman's Sensation Seeking Scale (*Appendix Q*), which they were asked to complete three weeks later and mail back to Brock University. These follow-up questionnaires were given in the above order, and included instructions to answer according to how they feel in general.

Table 1

Overview of Measures used on the Day of the Skydive and Three Weeks Later

Pre-jump	Post-jump (state measures)	Follow-up (trait measures)
Canadian cultural world view (unconscious death fear)	Wrote about their death (death prime)	Canadian cultural world view (unconscious death fear)
	Positive and Negative Affect Scale (distractor)	Mysticism Scale (peak experiences)
	Canadian cultural world view (unconscious death fear)	Implicit Spirituality Scale
	Mysticism Scale (peak experiences)	Religious Orientation Scale (intrinsic religiosity)
	Implicit Spirituality Scale	Sensation Seeking Scale
	Overt Death Anxiety Scale (conscious death fear)	

Participants who did not return their questionnaires received either two phone calls or two e-mails requesting that the packet be completed and returned. All participants received the Debriefing Letter (*Appendix R*) in the spring of 2008.

Measures

Unconscious Death Anxiety (Appendices E, F, and G). Unconscious death anxiety was assessed by measuring Canadian cultural world view three times, once to measure their baseline Canadian cultural world view (pre-jump), and the second time to see if their view changed as a result of writing about death and jumping out of an airplane (post-jump), and the third time as a general comparison (follow-up). TMT researchers ask American participants to read pro-US and anti-US essays and then answer five questions assessing how valid, biased, and well-written the participants think the essays are, as well as how much they think they would like the author, or be interested in meeting the author. Routledge, Arndt, and Sheldon (2004) found acceptable reliability on the five evaluation questions ($\alpha > .84$). The reliability for each measure in this study is listed in Table 5.

I assumed that these essays would not have the same effect in Canada, so for my pre-jump essay (*Appendix E*) I adapted Baldwin and Wesley's (1996) anti-Canadian essay ostensibly written by an American visiting Canada, "who complained about the high prices in Canada and proclaimed that, if Canada would only adopt some American political and economic ideas it might be much better off" (p. 84). The post-jump essay maligned hockey and its violence, and suggested baseball as a better alternative (*Appendix F*). The follow-up essay criticized health care and stated that, "Even with the exchange

rate and their dollar creeping closer to our US standard, prices were outrageously high, especially for gas.” (*Appendix G*).

These were all hand written with three spelling errors each. Four items were rated along a nine point scale: “How valid do you find the author’s point of view?”, “How biased do you find the author’s point of view?”, “How well-written do you find the essay?”, and “How much would you like the author?” The fifth question, “How much would you like to meet this author?” was not used because pilot studies indicated that it was ambiguous, as some participants wanted to meet the author to tell him/her how wrong he/she was.

Pilot testing among people at the drop zone who had previously skydived ($n = 4$) and a community sample (not at the drop zone; $n = 8$) found good reliability ($\alpha = .82$) for the pre-jump unconscious death fear measure. However, for the experimental groups the statement assessing bias was removed because analyses indicated that deleting that item increased the reliability from .47 to .63 for the pre-jump measure, from .35 to .69 for the post-jump measure, and from .25 to .67 for the follow-up measure. It appeared likely that a number of the participants missed the shift in response direction for the bias question. The three remaining items were reverse scored, so that high scores reflect strong attachment to Canadian cultural world views, and greater hypothesized unconscious death fear.

Conscious Death Anxiety (Appendix H). Participants completed the fifteen-item Overt Death Anxiety Scale (ODAS: Templer, 1970) as the final measure on the day of the jump. This is a forced answer questionnaire (True or False). A sample item from this scale

reads, “I am very much afraid to die.” Templer (1970) found adequate reliability ($\alpha = .76$) with test-retest reliability of .83. Items were reverse scored when necessary so that higher scores reflect greater fear of death.

Mortality Salience Prime (Appendix I). Participants responded to two open-ended questions (used in prior TMT studies; e.g., Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989) to prime death. Participants were asked to, “Please briefly write down the emotions that the thought of your own death arouses in you.” and “What do you think happens to you as you physically die and after you are dead?” This was not scored.

Affect (Appendix J). In TMT research the Positive and Negative Affect Scale (PANAS: Watson, Clark, & Tellegen, 1988) is used as both a buffer/distracter for death prime and as a demonstration that TMT effects are not due to affect alone. Ten positive emotions (e.g., enthusiastic, excited) were rated along a five-point rating scale (1 = *very slightly, not at all* to 5 = *extremely*), yielding a score between ten and fifty. When participants are asked to rate their emotions ‘at this moment’ (in the same way that they were in this research) Watson, Clark, and Tellegen (1988) found an alpha coefficient of .89 with an eight-week retest reliability of .54 for the positive subscale. Ten negative emotions (e.g., afraid, upset) generated another score with an alpha of .85 and an eight-week retest reliability of .45.

Mystical /Peak Experiences (Appendices K, L, and M). Peak experiences were measured by Hood’s (1975) 32 item Mysticism Scale on the day of the jump and three weeks later. The Mysticism Scale is explicitly designed to measure Stace’s (1960) criteria of mysticism (Spilka et al., 2003), which also includes some features of Maslow’s peak

experience and James' mystical states. Hood et al. (2001) found the full scale alpha to be .91 in a US sample.

Participants indicated their level of agreement with each item using a five-point rating scale (- 2 = *definitely not true* to + 2 = *definitely true*). These were then recoded, so - 2 became 1, etc. so that total scores could range from 32 to 160. A sample statement is, "I have had an experience which left me with a feeling of awe." Items were reverse scored when necessary so that higher scores reflect higher levels of mysticism.

The instructions for the post-jump measure were modified for skydivers to reflect their experience of skydiving on that day only, with the words, "that you may have experienced immediately before, during, or immediately after skydiving today" added in bold type to the initial instructions, as well as individual items (*Appendix K*). Sample statements include, "I have had an experience immediately before, during, or immediately after skydiving today which was incapable of being expressed by words" and "I have experienced profound joy immediately before, during, or immediately after skydiving today." The comparison group was asked to "focus specifically on how you feel today." (*Appendix L*). For the follow-up questionnaire, the instructions were added in bold-face type to consider "whether you have had any of these experiences over your entire life, in any circumstances." (*Appendix M*).

Religiosity (Appendix N). People who completed their take home packets filled out Allport and Ross's (1967) twenty item Religious Orientation Scale. Scores could range between 5 and 50. Allport and Ross (1967) found that the 9 items measuring intrinsic religiosity had an alpha of .89, and the 11 items measuring extrinsic religiosity had an

alpha of .83. An example of an intrinsically orientated statement is, “My religious beliefs are what really lie behind my whole approach to life.” In this research only intrinsic scores were considered.

Implicit Spirituality (Appendices O and P). Implicit spirituality was measured by Hunt’s (2006) twelve-item Implicit Spirituality Scale, with items based primarily on Heidegger’s phenomenology of Being experience as the hypothetical core of both religiosity and mysticism. There were two subsets developed for this questionnaire; mystic and theistic items. Although these are different conceptually, statistically they were similar. The mystic and theistic subsets of the post-jump measure were highly correlated $r(124) = .864, p < .001$, as were they on the follow-up (trait) measure, $r(63) = .908, p < .001$, so these items were reported as a single score, representing a bridge between mystic and theistic measures. As Hunt’s measure correlates with both peak experiences and intrinsic religiosity, by operational definition it is measuring the concept of implicit spirituality. Sample items read, “Deep down I believe that there is a higher and ultimately benevolent intelligence behind everything that happens” and “Deep down I believe that love and compassion are the deepest truths of everything that is.” Items were rated on a seven-point rating scale ($-3 = I \text{ totally disagree}$ to $+3 = I \text{ totally agree}$). These scores were then recoded so -3 became 1, etc., so scores could range between 7 and 84, thus higher scores suggest higher levels of implicit spirituality. On the day of the skydive the instructions were to “focus on how you feel today.” (*Appendix O*). In the take home packet the instructions were to “indicate how you feel about these statements in general.”

(Appendix P). In this study the alpha for Hunt's post-jump implicit spirituality scale was .93 for all participants ($n = 125$), and .95 for follow-up ($n = 64$).

Sensation Seeking (Appendix Q). Zuckerman (1971) defined sensation seeking as "a trait defined by the seeking of varied, novel and complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences" (p. 27). Zuckerman's (1971) 64-item Sensation Seeking Scale IV has been factored into four categories: Thrill and Adventure Seeking, Experience Seeking, Disinhibition Seeking, and Boredom Susceptibility. Zuckerman found the reliabilities of the General Sensation Seeking Scale and the first three factors were satisfactory, with all but two coefficients in the .70 to .80 range. However, the Boredom Susceptibility rating for men ranged from .56 to .75 and for women from .36 to .58 (Zuckerman, 1971). This scale uses forced choice (True or False), so scores fall between 0 and 64, with higher scores reflecting a greater propensity toward sensation seeking. Sensation seeking could be considered as an obvious potential confound and/or mediator in the above hypotheses. A sample statement is, "I sometimes like to do things that are a little frightening."

Participants

Of the 131 original participants who agreed to be in the study, four friends were deleted because they had skydived in the past. One novice skydiver was removed from the study because she did not read the questions, just circled 'totally disagree' regardless of whether the questions were worded in reverse. Of these 126 participants, 65 people (51.6%) returned their packets, which they completed approximately three weeks later. A

female novice was removed because her age (79) made her an outlier, leaving 125 participants. I was sorry to eliminate her from the study because she influenced my decision to skydive. She had always wanted to skydive, but her husband was afraid for her to do so. He had recently died, so she brought her granddaughter, who had just graduated from university, so that the two of them could have this experience together. After I spoke with this lady I decided to skydive myself, as it would give me a greater understanding of the skydiving experience.

Of the remaining 125 participants, 41 were friends who had never skydived (32.8%), 38 people had skydived once, 3 people had skydived twice, 1 person had skydived three times, 2 had skydived four times, and 2 had skydived five times. There seemed to be a natural break here, so I identified these 46 (36.8%) people as novice skydivers. When people want to skydive alone for the first time they train for five hours, and have two jumps in one day. I did not want to interrupt their training, nor give them the death prime between jumps, so although these people had skydived more than once, they were all classified as novices. There was considerable variability with the 38 veterans reporting having jumped 22 to 5000 times. Many veterans worked at the drop zone, training, doing tandem jumps with, or videotaping novice jumpers, and so could easily accumulate 10 or more jumps in a day.

Table 2

Frequency of Skydiving

	Times skydiving	<i>n</i>	Percent
Friends	0	41	32.8
Novices	1 - 5	46	36.8
Veterans	22 - 5000	38	30.4
		125	100

Sixty-five men and 60 women were retained in the study. There were 28 male and 10 female veterans, 26 male and 20 female novices, 11 male and 30 female friends. The veterans ranged in age from 21 to 58 years ($M = 36.76$, $SD = 10.77$), the novices from 18 to 50 years ($M = 25.74$, $SD = 7.49$), and the friends from 15 to 66 years ($M = 34.34$, $SD = 13.06$). People have to be 18 years of age to skydive. There were significant age differences, $F(2, 122) = 13.93$, $p < .001$, as veterans were 37 years, friends were 35 years and novices were 26 on average. Veterans had been skydiving an average of 8 years (minimum 3 months up to 30 years), so they were older on average than the novices. Although the average age difference of eleven years between veterans and novices seemed a necessary component of being a veteran, I checked for interactions between age and each variable. I also checked for interactions between each variable and sex.

Results

Descriptive Statistics and Preliminary Analyses

I ran descriptive analyses and looked at the histograms for each continuous variable. Examination of the histograms indicated that the distributions were mostly normal, except that Intrinsic Religiosity was slightly positively skewed, indicating that many people reported that they strongly agreed with intrinsic religious beliefs. Skewness and kurtosis statistics were generally within acceptable ranges (between -1 and +1). The skewness (3.01) and kurtosis (11.71) statistics for age for the novices were high until I removed the 79 year old female novice skydiver, reducing the skewness statistic to 1.73 and the kurtosis statistic to 2.87.

The veterans' negative *PANAS* kurtosis statistic was 3.38, and their skewness statistic was 1.7, influenced by one outlier who was more negative than the others. The novices' kurtosis statistic was 3.35 on the negative subscale of the *PANAS*, also influenced by one person who scored 35, suggesting that he was more negative than most novices. The veterans also had a kurtosis statistic of 1.31 on their positive *PANAS* with one outlier scoring 11, suggesting that he was less positive than most veteran skydivers. As affect was not a variable that I hypothesized about, and these participants were not outliers on any other variables, I retained these skydivers in the study. Overall, these statistics were within acceptable limits.

Missing Data

All participants were given a stamped packet of questionnaires, which they were asked to complete three weeks later. After eliminating the oldest participant, 64 out of 125 participants returned their second packet (51.2%). Thirty-three (out of 60) women

and 31 (out of 65) men returned their packets. The numbers of friends, veterans, and novices who returned their second package are presented in Table 3. A chi-square test was conducted to determine whether having returned the second packet was independent of group. Results of the chi-square test were non-significant $\chi^2(2, N = 125) = 3.23$, $p = .199$, indicating that whether or not participants returned the second package was unrelated to whether they were veterans, novices, or friends.

Table 3

Participants who Returned their Questionnaire Packets by Group

	Returned	Did not return	Total
Veterans	23 (60.5%)	15 (39.5%)	38 (100%)
Novices	19 (41.3%)	27 (58.7%)	46 (100%)
Friends	22 (53.7%)	19 (46.3%)	41 (100%)
Total	64 (51.2%)	61 (48.4%)	125 (100%)

T tests were conducted to determine whether there were significant differences between those who did and did not return their packets on those variables that they shared (See Table 4). There were only significant differences for age, $t(124) = -2.36$, $p = .020$. The average age of those who returned their packets was 34.59 years. Those who did not were 29.77 old on average, indicating that older participants were more likely to return their packets.

Table 4

Comparison of Participants who Returned the Questionnaire Packets (n = 64) with Those Who Did Not (n = 61)

	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Age				
not returned	29.77	10.45		
returned	34.59	12.26	-2.36	.020
Pre-jump Unconscious Death Fear				
not returned	17.75	4.95		
returned	17.86	4.66	- .12	.903
Post-jump Unconscious Death Fear				
not returned	19.37	4.64		
returned	17.92	5.16	1.66	.100
Post-jump Conscious Death Anxiety				
not returned	6.97	2.63		
returned	6.27	2.80	1.52	.138
Post-jump Mysticism				
not returned	103.90	21.06		
returned	108.34	25.00	-1.07	.286
Post-jump Implicit Spirituality				
not returned	54.56	17.03		
returned	58.51	16.32	-1.33	.187
Post-jump Positive Affect				
not returned	36.02	9.14		
returned	35.95	8.43	.04	.968
Post-jump Negative Affect				
not returned	14.23	4.88		
returned	13.08	3.24	1.6	.121

Analyses of Variance (ANOVAs) were conducted on each variable to consider group differences. Means and standard deviations for all continuous variables of interest are presented in Table 5. Overall, the results were consistent with main expectations.

Veteran skydivers' unconscious death fear remained stable throughout the testing.

Results of the ANOVAs indicated that there were significant group differences in post-jump mysticism scores, post-jump implicit spirituality, follow-up intrinsic religiosity,

follow-up sensation seeking, positive and negative affect. Group differences were approaching significance on follow-up implicit spirituality scores ($p = .054$). There were not significant differences between groups on post-jump conscious death anxiety scores, nor on follow-up mysticism scores.

Results of the follow-up analyses indicated that novices were significantly higher on post-jump implicit spirituality scores and follow-up intrinsic religiosity scores than the veteran skydivers. As would be expected, both groups of skydivers were significantly higher than their friends on sensation seeking.

There were some surprises, which are explored in-depth during the discussion. For instance, results of the analyses indicated that the novices were higher than the veterans on post-jump peak experiences. The friends did not react to the death prime, and rated high levels of peak experience while their friend skydived.

Table 5

Means, Standard Deviations, Cronbach's Alpha for Key Continuous Variables, and Results of One-Way Analyses of Variance

	Veterans		Novices		Friends					
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	α	<i>df</i>	<i>F</i>	<i>p</i>
Unconscious Death Fear (pre-jump)	17.58	5.32	17.96	4.49	17.85	4.69	.63	2, 122	.07	.936
(post-jump)	17.84	5.47	19.48	3.99	18.41	5.37	.69	2, 122	1.20	.304
(follow-up)	18.65	4.87	20.21	3.24	19.09	4.09	.67	2, 61	.76	.474
Conscious Death Anxiety (post-jump)	6.47	2.70	6.09	2.29	7.32	3.11	.56	2, 122	2.31	.104
Mysticism Scale (post-jump)	92.37 _a	24.33	108.48 _b	21.33	116.39 _b	17.65	.91	2, 122	13.09	< .001
(follow-up)	111.61	28.85	128.00	26.66	118.91	17.53	.95	2, 61	2.27	.112
Implicit Spirituality (post-jump)	50.34 _a	17.89	59.67 _b	17.00	58.90 _{a,b}	13.86	.93	2, 122	4.01	.021
(follow-up)	52.39 _a	21.76	65.11 _b	15.08	58.14 _{a,b}	10.37	.95	2, 61	3.06	.054
Intrinsic Religiosity (follow-up)	18.91 _a	7.03	27.95 _b	8.90	25.77 _b	6.65	.86	2, 61	8.50	< .001
Sensation Seeking (follow-up)	36.35 _a	8.15	35.42 _a	9.12	26.55 _b	8.87	.88	2, 61	8.47	.001
Positive Affect (post-jump)	35.66 _{a,b}	8.44	38.70 _b	8.49	33.24 _a	8.61	.89	2, 122	4.48	.013
Negative Affect (post-jump)	12.55 _a	3.10	14.91 _b	5.06	13.22 _{a,b}	3.51	.71	2, 122	3.86	.024
Age	36.76 _a	10.77	25.74 _b	7.50	35.34 _{a,b}	13.06		2, 122	13.93	< .001

Note: Post-jump scores $n = 38$ for veterans, $n = 46$ for novices, $n = 41$ for friends. Follow-up scores $n = 23$ for veterans, $n = 19$ for novices, $n = 22$ for friends. Means in the same row that do not share subscripts differ at $p < .05$.

The Comparison Group; Rationale for Using Only Skydivers for Group Analyses

A decision was made to eliminate the comparison group (i.e., friends) from further analysis. As expected, the friends' sensation seeking score was significantly lower than the skydivers' scores (See Table 5). The reason that I studied skydivers was because I believed that they would be lower on intrinsic religiosity than other people in general. The results of the one-way ANOVAs revealed that the friends were significantly higher than the veteran skydivers on intrinsic religiosity, but so were the novices. Other than that, the friends' scores were highly unusual rendering them invalid as a comparison group. The friends showed marginally high conscious death fear scores and the significantly highest mysticism scores on the day of the jump. This seemed more likely an empathic response to what the skydivers were going through, than the demographically similar comparison group that was sought.

In addition, and more troubling, all Mysticism Scale scores should increase as people incorporate their experiences on the day of the jump with all such experiences throughout their lives, as asked for on the follow-up Mysticism Scale instructions. Although this was true for the skydivers, the friends' Mysticism Scale scores did not significantly increase from post-jump to follow-up, $t(21) = -.055, p = .957$. Given that the instructions were to "focus on how you feel today" on the day of the skydive, and "over the course of your life" for the follow-up, unless they only ever had a peak experience on the day their friend skydived, their follow-up score should logically be higher. As the friends' scores remained virtually unchanged, it seems possible that they were being affected by their friends' skydive by proxy, as a sort of day-specific halo effect and with little subsequent memory, which has no meaning as a comparison. Their

follow-up measure may thus have been a more accurate representation of their actual tendency for mystical experience.

Finally and contrary to what TM theorists would predict, the friends' change in unconscious death anxiety after the death prime was non-significant, $t(40) = -.585$, $p = .562$ suggesting that something was interfering with this. Perhaps they were so relieved that their friend had survived the skydive that this affected both their conscious and unconscious death fears. In hindsight, while the use of friends produced a likely comparison group in background demographics, it failed to provide the actual controls sought.

Accordingly, t test comparisons between veteran and novice skydivers only are presented in Table 6, which still allows testing of major hypotheses. Although these results duplicate the information in Table 5, both tables are presented with slightly different information. The reliability scores for each variable are included in Table 5 and the difference scores between groups of skydivers are included in Table 6.

Table 6

*Means and Standard Deviations of Key Continuous Variables for Veteran and Novice Skydivers, Results of Independent Samples *t* tests, including Difference Scores*

	Veterans (<i>n</i> = 38)		Novices (<i>n</i> = 46)		<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>				
Unconscious Death Fear (pre-jump)	17.58	5.32	17.96	4.49	82	-.35	.725	-.378
(post-jump)	17.84	5.47	19.48	3.99	82	-1.58	.117	-1.64
(follow-up)	18.65	4.87	20.21	3.24	40	-1.19	.240	-1.58
Conscious Death Fear (post-jump)	6.47	2.70	6.09	2.29	82	-.71	.479	.39
Mysticism Scale (post-jump)	92.37	24.33	108.48	21.33	82	-3.23	.002	-16.11
(follow-up)	111.61	28.85	128.00	26.66	40	-1.90	.065	-16.39
Implicit Spirituality (post-jump)	50.34	17.89	59.67	17.00	82	-2.45	.017	-9.33
(follow-up)	52.39	21.76	65.11	15.08	40	-2.15	.037	-12.71
Intrinsic Religiosity (follow-up)	18.91	7.03	27.95	8.90	40	-3.68	.001	-9.03
Positive Affect (post-jump)	35.66	8.44	38.70	8.49	82	-1.64	.106	-3.04
Negative Affect (post-jump)	12.55	3.10	14.91	5.06	82	-2.62	.011	-2.36

Note: Follow-up scores *n* = 23 for veterans, *n* = 19 for novices.

Preliminary Results of Analyses of Skydivers

As can be seen in Table 6, results of the independent samples *t* tests indicated that novices scored significantly higher than the veterans on post-jump measures of mysticism/peak experiences, implicit spirituality, and negative affect. Novices' scores on implicit spirituality and intrinsic religiosity were also significantly higher than the veterans at follow-up. Although novice skydivers' scores on peak experience at follow-up were higher, this only approached significance. As previously mentioned, veterans were significantly older than the novice skydivers.

Age Differences among Skydivers

Because veterans were significantly older than novices, I ran several hierarchical multiple regression analyses to determine whether any differences between novices and veterans might be accounted for by age. I entered age and experience (measured as the number of times skydiving) on Step 1, followed by the product of age by experience on Step 2. The product of age and experience did not account for any variability in any of the key variables.

When post-jump unconscious death fear score was regressed on to age and experience, the model approached significance, $F(2, 81) = 2.96, p = .058$. Although the overall model was not significant, age accounted for 6.8% of post-jump unconscious death fear, $t(82) = -2.43, p = .017$, indicating that older skydivers scored lower on post-jump unconscious death fear. Experience did not account for any variability in post-jump unconscious death fear.

In most cases the overall models were not significant. In addition, neither age nor experience accounted for any variability in conscious death anxiety $F(2, 81) = .37, p = .691$, pre-jump unconscious death fear $F(2, 81) = .46, p = .635$, follow-up unconscious death fear $F(2, 39) = 1.21, p = .310$, nor intrinsic religiosity $F(2, 39) = 1.54, p = .228$.

When post-jump peak experience score was regressed on to age and experience, the overall model was significant, $F(2, 81) = 5.13, p = .008$. Age was not a significant predictor, although experience was $t(82) = -3.13, p = .002$. When follow-up peak experiences score was regressed on to these variables, the overall model was significant $F(2, 39) = 3.45, p = .042$, although further examination revealed that neither age $t(40) = -.84, p = .406$, nor experience $t(40) = -1.79, p = .082$, were significant predictors.

When post-jump implicit spirituality score was regressed on to age and experience, the overall model was significant, $F(2, 81) = 3.53, p = .034$. Experience was a significant predictor of post-jump implicit spirituality $t(82) = -2.64, p = .010$, although age was not, $t(82) = 1.60, p = .116$. Experience accounted for 7.9% of the variance in post-jump implicit spirituality, with less experienced skydivers scoring higher on post-jump implicit spirituality. The results were similar when follow-up implicit spirituality score was regressed on to age and experience. The overall model was significant, $F(2, 39) = 4.86, p = .013$. Age was not a significant predictor of follow-up implicit spirituality $t(82) = .243, p = .809$, although experience was $t(40) = -2.84, p = .007$. Experience accounted for 16.6% of the variance in follow-up implicit spirituality, with less experienced skydivers scoring higher on post-jump implicit spirituality.

In conclusion, age could not have accounted for relations between skydiving experience and most dependent variables in this study, as experience was usually not correlated with the variables. Although the overall model was not significant, age contributed to the relation between skydiving experience and post-jump unconscious death fear, as older skydivers scored lower on post-jump unconscious death fear. Those skydivers with the least experience scored highest on both post-jump and follow-up measures of implicit spirituality.

Sex Differences among Skydivers

A series of t tests were conducted to test for sex differences in key variables for skydivers. Results of these tests are presented in Table 7.

Table 7

*Means and Standard Deviations of Key Continuous Variables for Male and Female Skydivers, Results of Independent Samples *t* tests*

	Male Skydivers (<i>n</i> = 54)		Female Skydivers (<i>n</i> = 30)		<i>df</i>	<i>t</i>	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
Unconscious Death Fear (pre-jump)	18.26	4.71	16.93	5.06	82	1.20	.232
(post-jump)	18.80	5.27	18.63	3.72	82	.15	.881
(follow-up)	18.92	4.45	20.00	4.45	40	-.81	.424
Conscious Death Fear (post-jump)	6.22	2.50	6.33	2.47	82	-.20	.845
Mysticism Scale (post-jump)	96.98	24.27	108.76	21.87	82	-2.21	.030
(follow-up)	110.96	30.10	130.88	22.54	40	-2.32	.026
Implicit Spirituality (post-jump)	51.46	17.11	62.63	17.36	82	-2.85	.005
(follow-up)	51.04	20.82	68.59	12.92	40	-3.37	.004
Intrinsic Religiosity (follow-up)	20.84	8.12	26.17	9.66	40	-1.94	.060
Positive Affect (post-jump)	36.80	7.87	38.26	9.74	82	-.75	.454
Negative Affect (post-jump)	13.57	3.90	14.33	5.28	82	-.75	.454
Sensation Seeking (follow-up)	37.36	7.83	33.82	9.25	40	1.34	.189

Note: Follow-up scores *n* = 25 for male skydivers, *n* = 17 for female skydivers.

As can be seen on Table 7, women scored significantly higher than men on both measures of peak experiences and on both measures of implicit spirituality. Women scored marginally higher than men on intrinsic religiosity. There were no significant sex differences on conscious or unconscious death fears. Although it may have been assumed that men would be higher on sensation seeking, this was not the case. There were also no differences for affect.

To examine the effects of sex and group, two way ANOVAs were conducted for each key variable with significant sex differences. Results for post-jump peak experiences by group and sex indicated that women scored marginally higher than men, $F(1, 83) = 3.84, p = .053$. In addition to the main effect for sex, there was a main effect for group, as the novice skydivers' measure of post-jump mystical experiences was higher than the veterans, $F(1, 83) = 5.51, p = .021$. There was no group by sex interaction, $F(1, 83) = 1.37, p = .246$, indicating that novice and female skydivers scored higher on measures of post-jump peak experiences.

Results for follow-up peak experiences indicated that sex differences approached significance, $F(1, 38) = 3.82, p = .058$, with women scoring higher than men. This time there were non-significant differences between groups $F(1, 38) = 1.59, p = .216$, and there was no interaction between sex and group, $F(1, 38) = 1.44, p = .238$. This indicates that women scored higher than men on measures of follow-up peak experiences, regardless of group.

Results for post-jump measures of implicit spirituality showed that there was a main effect only for sex, $F(1, 83) = 7.18, p = .009$, with women scoring higher than men. There was not a main effect for group, $F(1, 83) = 2.38, p = .127$, nor was there a group by sex interaction, $F(1, 83) = 1.25, p = .268$. Results for follow-up measures of implicit spirituality revealed a main effect for sex, with women again scoring significantly higher than men, $F(1, 41) = 7.24, p = .011$. There was no main effect for group, $F(1, 41) = 2.11, p = .155$ nor was there a significant group by sex interaction, $F(1, 41) = 1.13, p = .294$. This shows that female skydivers scored higher than male skydivers on post-jump and follow-up implicit spirituality, regardless of group.

In conclusion, women scored significantly higher than men on post-jump and follow-up measures of peak experiences, and novices scored significantly higher than veterans on post-jump peak experiences. Female skydivers scored significantly higher on both of the measures of implicit spirituality than male skydivers, regardless of group. These results indicate that on measures of post-jump peak experiences novice and female skydivers scored higher than veteran and male skydivers. Women scored marginally higher than men on follow-up peak experiences, regardless of group.

Tests of Hypotheses

Hypothesis 1. To test whether veterans had higher scores on peak experiences than the novices, the results of the independent samples *t* tests were examined (See Table 6). Contrary to expectations, the veteran skydivers had significantly lower post-jump scores on peak experiences than the novices on the day of the skydive. Furthermore, there were no longer differences between groups on follow-up peak experiences.

Hypothesis 2. It was expected that veteran skydivers' unconscious death fear scores would remain stable or decrease after the death prime and that these scores would be similar three weeks later. In contrast, it was expected that the novices' unconscious death fear scores would increase after the death prime.

To test this hypothesis, a mixed analysis of variance was conducted with pre-jump, post-jump and follow-up unconscious death fear as the repeated measures, and group (veteran and novice skydivers) as the between-subjects variable. Assumptions of homogeneity of variance were met and assumptions of sphericity were not violated. Results of this analysis, presented in Table 8, indicated that unconscious death fear scores approached significance for time, $F(1, 40) = 3.68, p = .062$. There were no significant

differences between groups, $F(1, 40) = 2.59, p = .115$, nor was there a time by group interaction, $F(1, 40) = .057, p = .812$.

Table 8

Analysis of Variance for Unconscious Death Fear (Canadian Cultural World View)

Source	<i>df</i>	<i>F</i>	<i>eta</i> ²	<i>p</i>
Within subjects				
CCWV	1	3.68	.007	.062
CCWV * group	1	.06	.001	.812
error	40	(14.90)		
Between subjects				
Group	1	2.59	.004	.115
error	40	(33.20)		

Note: Values enclosed in parentheses represent mean square errors.

As predicted, veteran skydivers' unconscious fear of death did not change significantly after the death prime. The veterans' post-jump unconscious death fear scores were not significantly higher than their pre-jump unconscious death fear scores, $t(37) = .295, p = .770$, nor were their follow-up unconscious death fear scores significantly higher than their pre-jump unconscious death fear scores, $t(22) = 1.35, p = .191$.

The means for both veteran and novice skydivers are plotted in Figure 3.

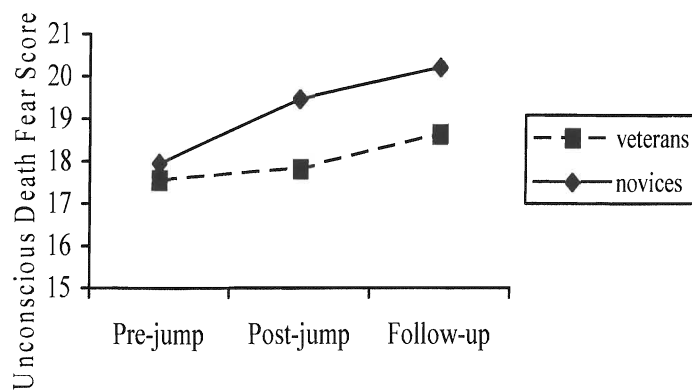


Figure 3. Changes in unconscious death fear by group.

Paired samples *t* tests were conducted to consider changes over time. As predicted, the novices' post-jump unconscious death fear scores ($M = 19.48$, $SD = 3.99$, $n = 46$) were marginally higher than their pre-jump unconscious death fear scores ($M = 17.96$, $SD = 4.49$, $n = 46$), $t(45) = 1.90$, $p = .064$.

Hypothesis 3. As a negative association was expected between peak experiences and unconscious death fear among veteran skydivers, the correlations were examined (See Table 9). Only the negative association between post-jump peak experiences and post-jump unconscious death fear scores approached significance, $r(38) = -.28$, $p = .084$. The correlations between post-jump peak experiences and pre-jump unconscious death fear scores, and between post-jump peak experiences and follow-up unconscious death fear scores were not significant, indicating that this marginal relationship was specific to the post-jump experience of veteran skydivers. Post-jump peak experiences did not correlate with any unconscious death fear scores for novice skydivers (See Table 10).

Table 9

Correlations among Key Variables at Pre- and Post-jump (n = 38), and at Follow-up (n = 23) for Veteran Skydivers

	2.	3.	4.	5.	6.	7.	8.	9.
1. Unconscious Death Fear (pre-jump)	.48**	.19	-.17	.01	-.15	-.08	-.10	.19
2. Unconscious Death Fear (post-jump)		.28	-.28	-.04	.02	-.01	-.29	.14
3. Unconscious Death Fear (follow-up)			-.16	-.03	-.17	-.06	-.18	-.18
4. Peak Experiences (post-jump)				.45**	.17	.40	.56**	.18
5. Implicit Spirituality (post-jump)					.04	.65**	.92**	.48*
6. Conscious Death Anxiety (post-jump)						-.25	-.27	-.07
7. Peak Experiences (follow-up)							.70**	.40*
8. Implicit Spirituality (follow-up)								.46*
9. Intrinsic Religiosity (follow-up)								

Note: * $p < .05$; ** $p < .01$.

Hypothesis 4. It was expected that the degree of peak experiences would mediate the relationship between the amount of skydiving experience (measured as times skydiving) and unconscious death fear. That is, having many peak experiences should account for the relationship between the amount of skydiving experience and lower unconscious death fear.

Four conditions must be met to demonstrate mediation: (a) the independent variable (skydiving experience) must be significantly related to the dependent variable (post-jump unconscious death fear), (b) the independent variable (skydiving experience) must be significantly associated to the hypothesized mediator (post-jump peak experiences), (c) the mediator (post-jump peak experiences) must be significantly related to the dependent variable (post-jump unconscious death fear), and (d) the relationship between the independent variable (skydiving experience) and the dependent variable

(post-jump unconscious death fear) must be eliminated or at least reduced when controlling for the mediating variable (peak experiences).

(a) Contrary to expectations, there was not a significant relationship between skydiving experience and post-jump unconscious death fear, $r(84) = -.01, p = .903$, so there was no relationship to mediate; nevertheless, I tested to see whether an indirect effect existed (Baron & Kenny, 1986). (b) To test this, post-jump peak experience was regressed on skydiving experience and the result was significant, $\beta(84) = -.32, p = .003$. (c) However, the relationship between post-jump peak experience and post-jump unconscious death fear was not significant, $\beta(84) = -.04, p = .734$, so post-jump peak experiences did not mediate the relationship between skydiving experience and post-jump unconscious death fear directly nor indirectly.

Hypothesis 5. To test whether novices had higher scores on implicit spirituality than the veterans, the results of the t tests (See Table 6) were examined. As predicted, the novice skydivers had significantly higher scores on post-jump implicit spirituality than the veterans.

Because I believed that these scores would be higher because of their proximity to the possibility of death on the day of the skydive, the results of the t tests (See Table 6) were examined to see if the novices and veterans differed at follow-up. The novices still had significantly higher scores on follow-up implicit spirituality than the veteran skydivers, it being indeterminate whether these are group based trait differences or continued after effects of the skydiving. However, as previously mentioned, this difference is partially due to sex differences, as women scored higher than men on this measure.

Hypothesis 6. As a negative association was expected between implicit spirituality and unconscious death fear among novice skydivers, correlational analyses were conducted among key variables for novice skydivers (See Table 10). The only association that was significant was between follow-up implicit spirituality and pre-jump unconscious death fear $r(19) = -.49, p = .032$, perhaps indicating that novice skydivers who were in touch with their implicit spirituality generally were not as unconsciously afraid of dying before they jumped out of an airplane. Neither their post-jump implicit spirituality scores nor their follow-up implicit spirituality scores were related to any other unconscious death fear scores (post-jump or follow-up).

Table 10

Correlations among Key Variables at Pre- and Post-jump (n = 46), and at Follow-up (n = 19) for Novice Skydivers

	2.	3.	4.	5.	6.	7.	8.	9.
1. Unconscious Death Fear (pre-jump)	.18	.32	.09	.11	-.02.	-.34	-.49*	-.44
2. Unconscious Death Fear (post-jump)		.23	.13	.08	.14	.11	.33	-.01
3. Unconscious Death Fear (follow-up)			-.23	.05	-.29	-.14	.08	-.05
4. Peak Experiences (post-jump)				.48**	-.17	.78**	.62**	.20
5. Implicit Spirituality (post-jump)					-.36*	.54*	.95**	.68**
6. Conscious Death Anxiety (post-jump)						-.36	-.47*	-.08
7. Peak Experiences (follow-up)							.65**	.21
8. Implicit Spirituality (follow-up)								.63**
9. Intrinsic Religiosity (follow-up)								

Note: * $p < .05$; ** $p < .01$.

Hypothesis 7. To test whether novices had higher scores on conscious death fear than the veterans, t tests were conducted. Results of this analysis indicated that there were no significant differences between groups (See Table 6) nor sexes (See Table 7).

Hypothesis 8. A negative association was expected between implicit spirituality and conscious death fear only among novice skydivers. This hypothesis was supported as

the correlational matrix revealed that novice skydivers had significant negative associations between post-jump implicit spirituality and post-jump conscious death fear, $r(46) = -.36$, $p = .015$, and follow-up implicit spirituality with post-jump conscious death fear, $r(19) = -.47$, $p = .044$ (See Table 10). These relationships were not significant for veterans at either time (See Table 9).

* * *

Hypothesis 9. A positive relationship was expected between implicit spirituality and peak experiences, especially in veteran skydivers. A positive relationship was expected between implicit spirituality and intrinsic religiosity especially in novice skydivers. No relationship was expected between peak experiences and intrinsic religiosity in either group. (See Figure 1).

Examination of the correlation matrix for veteran skydivers revealed that there was a significant positive relationship between post-jump implicit spirituality and post-jump peak experiences, $r(38) = .45$, $p = .005$. This relationship was also significant among novice skydivers, $r(46) = .48$, $p = .001$, adding credence to the model that suggests that implicit spirituality is present in most people, and may be expressed through mystical type experiences.

Veteran skydivers were specifically chosen because of their hypothesized lower intrinsic religiosity; however, the relationships between post-jump implicit spirituality and follow-up intrinsic religiosity were significant for both veterans, $r(23) = .48$, $p = .020$ and novices, $r(19) = .68$, $p = .001$. These relationships add support to this model, suggesting that implicit spirituality may be expressed through intrinsic beliefs.

Further backing for this model was found as post-jump peak experiences were not related with follow-up intrinsic religiosity for veterans, $r(23) = .18, p = .395$, nor for novices, $r(19) = .20, p = .405$ (See Figure 4).

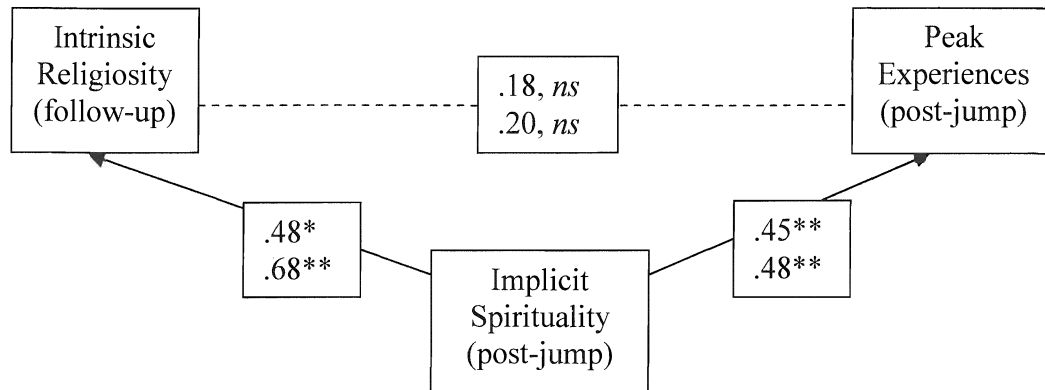


Figure 4. Veteran ($n = 38$, on top) and novice ($n = 46$) skydivers' relationships between implicit spirituality, peak experiences, and intrinsic religiosity. As intrinsic religiosity was only measured at follow-up, those relations reflect $n = 23$ and $n = 19$ respectively.

* * *

As peak experiences and intrinsic religiosity were uncorrelated, they may each mediate the relationship between implicit spirituality and unconscious death fear. Each of the following hypotheses is based on a portion of the model in Figure 2.

Hypothesis 10. It was expected that peak experiences would mediate the relationship between implicit spirituality and unconscious death fear, most strongly for veteran skydivers.

Four conditions must be met to demonstrate mediation: (a) the independent variable (post-jump implicit spirituality) must be significantly related to the dependent variable (post-jump unconscious death fear), (b) the independent variable (post-jump

implicit spirituality) must be significantly associated to the hypothesized mediator (post-jump peak experiences), (c) the mediator (post-jump peak experiences) must be significantly related to the dependent variable (post-jump unconscious death fear), and (d) the relationship between the independent variable (post-jump implicit spirituality) and dependent variable (post-jump unconscious death fear) must be eliminated or at least reduced when controlling for the mediating variable (peak experiences).

(a) There was not a significant relationship between post-jump implicit spirituality and unconscious death fear, $r(38) = -.04, p = .832$, so there was no relationship to mediate; nevertheless, I tested to see whether an indirect “effect” existed (Baron & Kenny, 1986). (b) To test this, post-jump peak experience was regressed on post-jump implicit spirituality and the result was significant, $\beta(38) = .45, p = .005$. (c) However, the relationship between peak experience and unconscious death fear only approached significance, $\beta(38) = -.28, p = .084$, so peak experiences did not mediate the relationship between implicit spirituality and unconscious death fear directly nor indirectly (See Figure 5).

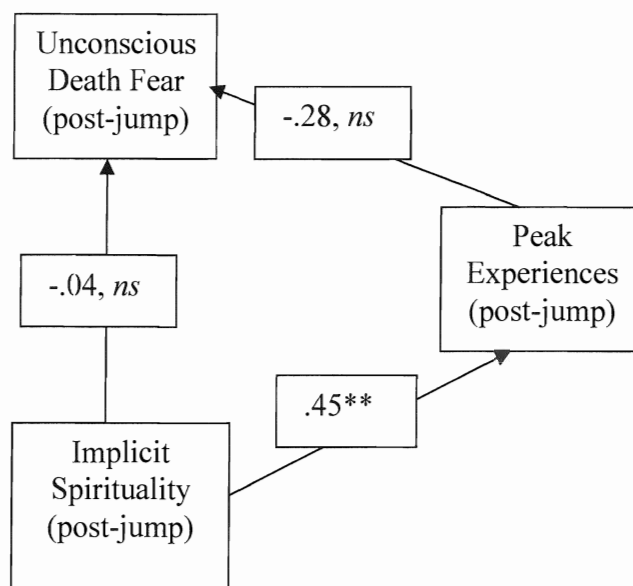


Figure 5. Relationships between implicit spirituality, peak experiences, and unconscious death fear among veteran skydivers, $n = 38$.

The results were identical for novice skydivers, such that peak experiences did not mediate the relationship between implicit spirituality and unconscious death fear.

Hypothesis 11. A negative association was expected between post-jump implicit spirituality and post-jump unconscious death fear among novice skydivers. It was expected that intrinsic religiosity or peak experiences would mediate the relationship between implicit spirituality and unconscious death anxiety (See Figure 2).

(a) Contrary to expectations, the relationship between post-jump implicit spirituality and post-jump unconscious death fear was neither significant nor negative, $r(46) = .08, p = .592$. (b) The relationship between post-jump implicit spirituality and follow-up intrinsic religiosity was significant, $\beta(19) = .68, p = .001$. While there could be an indirect “effect” (Baron & Kenny, 1986) of implicit spirituality on unconscious death

fear via intrinsic religiosity, this cannot be determined from this these data, because intrinsic religiosity was not measured post-jump.

(b) When post-jump implicit spirituality was regressed on post-jump peak experiences, the result was significant, $\beta(46) = .48, p = .001$, indicating that post-jump implicit spirituality and post-jump peak experiences were related. Although there could be an indirect “effect” (Baron & Kenny, 1986) of implicit spirituality on unconscious death fear via peak experiences, this was not the case. When peak experiences were regressed on post-jump unconscious death fear the relationship was non-significant, $\beta(46) = .13, p = .393$.

Hypothesis 12. A negative association was expected between post-jump implicit spirituality and post-jump conscious death fear only among novice skydivers. It was expected that peak experiences and/or intrinsic religiosity would mediate the relationship between implicit spirituality and conscious death anxiety, so this is actually two hypothesized mediation models. Although intrinsic religiosity may mediate the relationship, it is not a necessary component. As in the previous hypothesis, part of this model could not be tested, as intrinsic religiosity was only measured at follow-up.

Not all the conditions for mediation (listed previously) were met when peak experiences were considered as the mediator. (a) Post-jump implicit spirituality was significantly negatively correlated with post-jump conscious death fear, $r(46) = -.36, p = .015$. (b) When peak experiences was regressed on implicit spirituality the result was significant, $\beta(46) = .48, p = .001$, as it was when intrinsic religiosity was regressed on implicit spirituality, $\beta(19) = .68, p = .001$. (c) However, neither hypothesized mediator was related to conscious death fear, indicating that neither peak experience $\beta(46) = -.17,$

$p = .253$, nor intrinsic religiosity $\beta(19) = -.08, p = .746$, mediated the relationship between implicit spirituality and conscious death fear (See Figure 6).

There were similar results when this analysis was repeated with the veteran skydivers. Neither peak experience $\beta(38) = .17, p = .312$, nor intrinsic religiosity $\beta(23) = -.07, p = .753$, were related to conscious death fear.

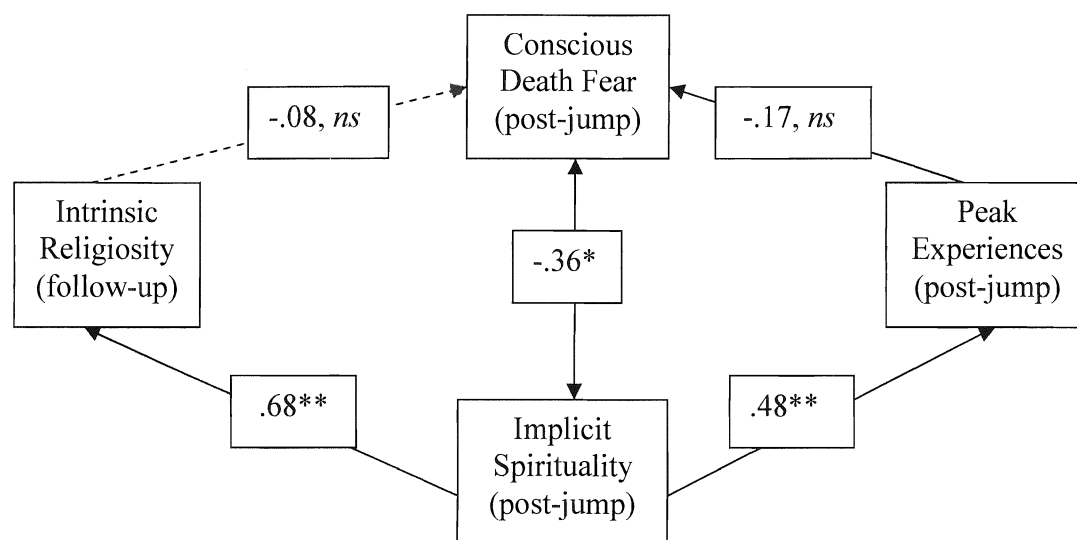


Figure 6. Relationships between implicit spirituality, conscious death fear, peak experiences, and intrinsic religiosity among novice skydivers, $n = 46$ for post-jump scores, and $n = 19$ for follow-up scores.

As implicit spirituality was related to conscious death fear, this supported the hypothesis that when death was an imminent possibility, novice skydivers accessed their implicit spirituality. Although implicit spirituality was correlated with both intrinsic religiosity and peak experiences, neither peak experiences nor intrinsic religiosity mediated the relationship between implicit spirituality and conscious death fear.

In contrast with the novices, the relationship between post-jump implicit spirituality and post-jump conscious death fear was non-significant for veterans. Among veteran skydivers the relationship between post-jump conscious death fear and follow-up intrinsic religiosity was also non-significant, suggesting that they did not rely on intrinsic religious beliefs nor implicit spirituality to overcome death anxiety, confirming that they were an ideal group with which to study the effects of peak experience exclusive of beliefs.

The association between follow-up implicit spirituality and post-jump conscious death fear was also negative and significant, $r(19) = -.47, p = .044$ for novice skydivers. However, neither the post-jump implicit spirituality and post-jump conscious death fear association, nor the post-jump conscious death fear and follow-up implicit spirituality association, were significant for veteran skydivers.

Other Correlations

Only the novices' very high follow-up implicit spirituality scores correlated negatively with their pre-jump unconscious death fear. The follow-up questionnaires could be considered as trait measures (contrasted with state measures on the day of the jump), suggesting that unconscious death fears in novice skydivers may be influenced by an ever-present implicit spirituality. This may suggest that implicit spirituality is closer to unconscious processes, but comes to the forefront affecting conscious processes in times of dire need (i.e., when death is a possibility). Implicit spirituality may be present in all people, but many people are unaware of it. As the novice skydivers had to consider the possibility of death, this ever-present spirituality may have calmed their unconscious death fear before the skydive, even without their conscious awareness. Once the skydive

was safely over, they may have become aware of this implicit spirituality and its relationship to their conscious death fear. TMT suggests that both conscious and unconscious primes of death affect unconscious death fears. There may be a myriad of unconscious processes at work, and hopefully this research will shed a glimmer of light into these processes.

Even though the veterans had significantly lower scores than the novices on intrinsic beliefs, their post-jump implicit spirituality correlated with their follow-up intrinsic beliefs, suggesting that intrinsic beliefs may play some role in the lives of even veteran skydivers. I believed that skydivers in general would have low scores on intrinsic beliefs, although this was true for the veterans, the novices were similar to the comparison group. Surprisingly, the only time that follow-up intrinsic religiosity and follow-up peak experiences were related was among those veteran skydivers who returned the second packet of questionnaires.

As would be expected, peak experiences on the day of the skydive correlated significantly with the follow-up measure of peak experiences for the novice skydivers, $r(19) = .78, p < .001$. However, this relationship only approached significance for the veterans $r(23) = .40, p = .059$, suggesting that peak experiences were different on the actual day of the skydive for the veterans.

It was interesting that conscious death anxiety did not correlate with unconscious death anxiety for either group, suggesting that these two systems are unrelated. Conscious death anxiety correlated with implicit spirituality for novices both post-jump and at follow-up, yet neither of these associations was significant for veteran skydivers.

A further means of assessing the validity of Hunt's implicit spirituality measure as a joint correlate of both Hood's Mysticism Scale (1975) and intrinsic religiosity would be to consider the follow-up "trait" measures from all three original groups combined. Whereas the Mysticism Scale scores on the day of the skydive for the friends' group seemed situationally inflated, this was not the case with their follow-up scores. While possibly still influenced by the skydive, the follow-up measure would presumably also reflect more of the trait instruction set provided. With an overall N of 64 for the combined groups, the comparatively low Pearson correlation between trait Mysticism Scale score and intrinsic religiosity score was $r(64) = .30, p = .015$, while the correlations between implicit spirituality and the Mysticism Scale score was $r(64) = .68, p < .001$, and between the implicit spirituality score and intrinsic religiosity score was $r(64) = .54, p = .001$. If the implicit spirituality measure taps into a common ground shared by mysticism and religiosity, t tests for the differences between correlation coefficients for correlated samples should show no significant differences between $r(64) = .68, p < .001$ and $r(64) = .54, p < .001$, which was indeed the case, $t(63) = 1.44, ns$. The difference between each of these correlation coefficients and $r(64) = .30, p = .015$, should be significant, which it was; $t(63) = 2.79, p < .01$ for implicit spirituality and intrinsic religiosity, and $t(63) = 4.23, p < .001$, between implicit spirituality and the Mysticism Scale, two-tailed analysis. These findings support a preliminary degree of validity for the scale developed for this study as a measure accessing an implicit background spirituality that would contribute equally to the more separately differentiated dimensions of intrinsic religious beliefs and spontaneous mystical-peak experiences.

I also looked at the correlations for the friends on the day of the skydive.

Although the comparison group was not used in most analyses, they are important to include if this model can be applied to the general population. Although post-jump implicit spirituality correlated with follow-up intrinsic religiosity $r(22) = .45, p = .034$, the relationship between post-jump implicit spirituality and post-jump peak experiences was not significant $r(41) = .12, p = .450$, nor was the relationship between follow-up intrinsic religiosity and post-jump peak experiences, $r(22) = -.24, p = .288$. Their very high post-jump peak experience scores were not related to their post-jump implicit spirituality scores, perhaps suggesting that their peak experiences were brought about by proxy, and not through their own implicit spirituality.

As women scored marginally higher than men on intrinsic religiosity and significantly higher than men on peak experiences, and implicit spirituality purports to measure a hypothetical core of both religiosity and mysticism, this scale appears to reflect sex differences correlated with both of these variables.

Discussion and Conclusions

Summary

As predicted, the veterans' unconscious death fear scores did not increase after the death prime; rather than clinging more tenaciously to their cultural world views, the veteran skydivers did not respond to TMT manipulations. By contrast, the novices showed marginal increases in post-jump unconscious death fear and at follow-up. However, it was not the amount of peak experiences that reduced the tendency to show cultural world view defense (an indicator of unconscious death fear) after a death prime, as peak experience was not correlated with post-jump unconscious death fear. At follow-up, all skydivers were higher on peak experience scores than participants in any of Hunt's previous research (See Hunt et al., 2002), so veterans appear to be having peak experiences, but perhaps as they continue to skydive their experiences are not as intense as when they first started, or as Lipscombe (1999) found, veteran skydivers were reluctant to discuss their peak experiences. Whether peak experiences, age, or something else accounted for their responses, veteran skydivers did not respond on unconscious death fear defense as most TMT participants.

Surprisingly, novice skydivers had significantly higher scores on post-jump peak experiences than veteran skydivers. It would appear that on the day of the skydive the novices either had more peak experiences, or on the basis of their overall excitement responded to this questionnaire from a shifted threshold of sensitivity as a form of halo effect. Novices were highest on both positive and negative affect, so it seems that skydiving for the first time may be associated with intense feelings. They may have been in awe, as was I. Skydiving was an experience that is hard for me to describe, but time

and space became meaningless. Like the other women in the study, I would have rated the peak experiences very high. Although women scored significantly higher than men on post-jump peak experiences, this did not account for group differences, with novices scoring significantly higher, even after accounting for sex.

Despite their high peak experience scores, novice skydivers still responded to the death prime as TM theorists would predict, with marginally increased unconscious death fear. Novice skydivers had higher scores on post-jump and follow-up implicit spirituality scores than veterans. The proximity to death may have brought forth the novices' implicit spirituality, which correlated with lower conscious death fear, but not unconscious death fear. Or, as a group they may have been more in touch with their implicit spirituality as these scores were still high at follow-up. It could also be argued that the skydive (and their proximity to death) allowed them to access their implicit spirituality, which stayed in the forefront, at least for three more weeks. Follow-up implicit spirituality was related to pre-jump unconscious death fear in novice skydivers only, perhaps indicating that novice skydivers who were in touch with their implicit spirituality generally were not as unconsciously afraid of dying before they jumped out of an airplane.

Although I assumed that the novices would have higher scores on conscious death anxiety because of their proximity to death, their scores were not significantly different from the veterans. This may be because conscious death anxiety was (obviously) measured after the skydive, once the novices knew that they had survived. Their scores on conscious death fear may have been higher if this had been measured before the skydive.

As the veterans' conscious fear of death was not correlated with any other variables it may be that they somehow control this fear, so that it does not affect their skydiving performance. Perhaps as veterans continuously skydive, they feel that they can conquer death through their own mastery of the sport, and may not rely on their implicit spirituality. It may be that if the veterans' continued peak experiences allow them to transcend their conscious fear death, this effect may be so well established that the relationship between peak experiences and conscious death fear is no longer significant.

Like tying shoes, once you have done it so many times, you do not think about it any more, you just do it. The relationship still exists, it is just harder to parse out where one ends and the other begins. This would support Rank's original view that experiences of death transcendence are more than just the narrow concept of the avoidance of the awareness of death. Further research is necessary to discover what contributes to veterans' conscious death fears.

Although implicit spirituality was negatively correlated with conscious (and unconscious) death fear only in novices, it stands to reason that veteran skydivers had similar experiences when they were novices. Once veteran skydivers have glimpsed implicit spirituality (through peak experience when they were novices) or some other means (directly, intrinsic religiosity), their life may transformed, giving life meaning and value. It could also be argued that as people get older they contemplate their existence, hopefully finding peace and acceptance of death, contributing to older skydivers' stable scores on unconscious death fear.

Some support was lent for a model of implicit spirituality, where implicit spirituality may be assessed through distinct means: direct experience and/or intrinsic

religiosity. Intrinsic religiosity was not related with peak experiences on the day of the skydive, although it was at follow-up for veterans only. Although I believed that the correlation between implicit spirituality and peak experiences would be significant only for veterans, it was significant for all skydivers. I had also suggested that the relationship between implicit spirituality and intrinsic religiosity would be stronger for novices, and it was significant for all skydivers.

Post-jump implicit spirituality had an inverse relationship with conscious death fear for novice skydivers only. Although there was a strong relationship between implicit spirituality and both peak experiences and intrinsic religiosity, neither of these variables mediated the relationship between implicit spirituality and death fear.

Skydivers may have used both experiential (peak experiences) and cognitive (intrinsic beliefs) pathways to interpret implicit spirituality. As they landed many of the novices shouted, “That was better than sex!”, “That was the best experience of my life!”, “I can’t wait to go up again!” Such comments may suggest that novices were using cognitive pathways to explain the experience, rather than simply experiencing it. Recalling Tolle’s (2004, p. 51) suggestion that high-risk activities force people into the “Now -- that intensely alive state that is free of . . . thinking. . .”, if the novices were immersed in thinking, they were not in the Now, so perhaps cognitive processing interfered with peak experiences’ proposed ability to affect unconscious processes.

This research used skydivers as a group potentially without intrinsic religious beliefs. Surprisingly, at least among novices, their scores suggest that intrinsic beliefs are an important aspect of their lives. It is impossible to determine from these data whether the elevated intrinsic religiosity of the novices was a pre-existing trait, or a longer lasting

effect of the skydive. I cannot determine from these data whether the veteran's low scores on intrinsic beliefs are related to continuous skydiving, or whether people who are low on intrinsic beliefs are drawn to sports such as skydiving, which may confirm their conviction that they are in total control of their lives, and do not need to rely on any intrinsic beliefs. Doing longitudinal research with these novice participants would shed light on what happens to intrinsic beliefs as one continues to skydive.

There were some interesting findings related to sex: female skydivers were similar to male skydivers on sensation seeking, and only marginally higher on follow-up intrinsic religiosity. On both measures of implicit spirituality and follow-up peak experiences, female skydivers scored significantly higher than male skydivers, regardless of group. On measures of post-jump peak experiences novice and female skydivers scored higher than veteran and male skydivers. This suggests that even though women scored higher than men on many of these measures, the first few skydiving experiences evoke peak experiences for both male and female skydivers.

Although novices were 11 years younger than veterans, age did not correlate with peak experiences, implicit spirituality, intrinsic religiosity, or conscious death fears. As age accounted for a portion of the relationship between skydiving experience and post-jump unconscious death fear, it could be that older skydivers come to terms with the possibility of death, no longer fear it. They may have transcended their death fear. Maturity may be part of the peak experiences that Lipscombe (1999) found in veteran skydivers, as Maslow (1968) had suggested that as people grow and develop they search for meaningful experiences in life.

In summary, although the comparison group was removed, there were still some interesting findings comparing groups of skydivers. Mainly the veterans' post-jump and follow-up unconscious death fear scores were similar to their pre-jump measure, whereas the novices' scores increased marginally. There was a significant relationship between implicit spirituality and conscious death fear among novice skydivers, suggesting that implicit spirituality may be accessed when someone consciously believes herself (or himself) to be close to death. Novices' follow-up implicit spirituality score correlated only with their pre-jump unconscious death fear scores, also suggesting that trait implicit spirituality can correlate with unconscious death fears (when necessary). Among both groups of skydivers, there were significant relationships between post-jump implicit spirituality and both post-jump peak experiences and follow-up intrinsic religiosity. Peak experiences and intrinsic religiosity were generally not related with one another, suggesting that these may be different ways of accessing an implicit spirituality.

These findings contribute to research suggesting that people may have an implicit spirituality which can be accessed through peak experiences and/or intrinsic religiosity. Implicit spirituality may give one a glimpse into meaning, order, and permanence from a perspective not restricted by time and space. Accordingly, the three variables: implicit spirituality, peak experience, and intrinsic religiosity go beyond the TMT model of cultural world view defense. This research may lead to a greater understanding of peak experiences and implicit spirituality in relation to the fear of death. Such research may show that human behaviour can be influenced by decisions and perceptions following peak experiences, or other experiences which allow one access to implicit spirituality. TMT suggests that when humans are primed with death they use unconscious strategies,

such as cultural world view defense, to fight this terror. Yet, when one becomes aware of one's implicit spirituality through peak experiences or intrinsic religiosity, one's life may transformed, giving life meaning and value. People who have undergone a transformative experience may be more accepting of others in general, regardless of differing world views, contradicting TMT's exclusively defensive hypothesis. This also is the beginning of the development of a scale that measures spirituality.

This study also took the first steps toward applying TMT research to a real life- or in this case- real death situation, increasing the ecological validity of TMT research. These principles may be applied to research involving people who are daily primed with actual death, such as health care providers, ambulance attendants and grief counsellors. This may increase our understanding of the conscious and unconscious processes that these people go through, so that we can learn the best practises to handle death fears.

Limitations

This study is limited because skydivers may be a unique population. It is an expensive sport (\$259 for a tandem jump, \$200 for a first solo jump in 2007) so these results may not generalize to all people. Skydiving is most popular in North America and Australia, further limiting the generalizability of findings. However, peak experiences are not the domain of the very rich, nor skydivers alone. Some people seek peak experiences through meditation or retreats, while peak experiences may take others by surprise (i.e., Near Death Experiences).

Although it would not have been kind nor ethical to question people about dying before they skydived, it would have been interesting to see the differences between conscious death fear scores before and after their jump. The skydivers' significant

associations between implicit spirituality and intrinsic beliefs may support Norenzayan and Hansen's (2006) finding that when implicit spirituality is brought into awareness people grasp onto a belief system. However, it may be a limitation of this research that intrinsic religiosity was not measured on the day of the skydive so that all variables could have been examined within the same perimeters. Although I felt that measuring these variables three weeks later would reflect a trait measure, an even more accurate representation of these variables.

It would have been better to ask the comparison group to complete the questionnaires on an alternate day. It appears, in hindsight, that the friends should have been tested on a different day from the skydivers in order to offer the control sought for peak experiences caused by skydiving or not skydiving, rather than the empathic responses that seem to have occurred.

A further limitation was the low reliability of the conscious and unconscious death fear scales (.56 to .69). The pre- and post-jump unconscious death fear measure correlated only for veteran skydivers. This either reflects the degree to which the manipulations and skydive reflected their actual unconscious death fears, or it could be that they were not valid measures of unconscious death fear. Another concern with the unconscious death fear measure may be that the pre-jump measure (*Appendix E*) primed tolerance as a Canadian cultural world view, so that participants were more likely to endorse beliefs reflecting acceptance of differing world views than those reflecting Canadian views per se. For instance, participants may have endorsed acceptance of baseball and its non-violence rather than hockey and its violence as a more tolerant view,

rather than selecting responses which edify hockey as the national sport of Canada for the post-jump measure of Canadian cultural world view defense (*Appendix F*).

Implications for Theory and Research

As mentioned in the discussion, as the veterans' conscious fear of death was not correlated with any other variables it may be that they do not rely on implicit spirituality, peak experiences nor intrinsic religiosity, instead believing that they can conquer death solely through their own ability. Whereas Lipscombe's (1999) research suggests that veteran skydivers have continuous peak experiences, my research suggests they do not rate it with the same fervour as novice skydivers. It may be that after a time peak experiences become so deeply ingrained that they affect unconscious, but not conscious death fears. Further research is necessary to unravel what affects veteran skydivers' death fears.

Although skydivers were chosen for this research because of their supposed lack of intrinsic religious beliefs, the novices were slightly higher than the comparison group, and significantly higher than the veterans on this measure. It would be interesting to do a follow-up study with these novice skydivers to see whether their intrinsic religiosity scores decrease as they continue to skydive, or whether it is those with lower intrinsic religiosity scores who continue to skydive.

Surprisingly, the only time that follow-up intrinsic religiosity and follow-up peak experiences were related was among those veteran skydivers who returned the second packet of questionnaires. As the people who returned their packets were older, and veterans were older, it could be that these older veterans were considering both intrinsic religious beliefs correlated with the peak experiences. Jung would have expected older

individuals to explore their spirituality, and perhaps veteran skydivers do this through the lens of their peak experiences.

Skydivers were very interesting people with which to do research. They were very willing to share their experiences and participate in the research. They have some unique characteristics, and like the artists described by Rank, skydivers may have an inkling of death, which gives them an appreciation of life. Skydivers are a potent group of people with which to do research as they seem to live life to the fullest, with an appreciation of death.

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Appendix A. Table 11.

Correlations among Key Variables at Pre- and Post-jump, and Follow-up (n = 23) for Veteran Skydivers who Returned the Second Packet of Questionnaires

	2.	3.	4.	5.	6.	7.	8.	9.
1. Unconscious Death Fear (pre-jump)	.39	.19	-.13	-.11	-.34	-.08	-.10	.19
2. Unconscious Death Fear (post-jump)		.28	-.30	-.23	-.07	.01	-.29	.14
3. Unconscious Death Fear (follow-up)			-.16	-.03	-.17	-.06	-.18	-.18
4. Peak Experiences (post-jump)				.58**	-.02	.40	.56**	.18
5. Implicit Spirituality (post-jump)					-.23	.65**	.92**	.48*
6. Conscious Death Anxiety (post-jump)						-.25	-.27	-.07
7. Peak Experiences (follow-up)							.70**	.40
8. Implicit Spirituality (follow-up)								.46*
9. Intrinsic Religiosity (follow-up)								

*Note: * p < .05; **p < .01*

Appendix B. Table 12.

Correlations among Key Variables at Pre- and Post-jump, and Follow-up (n =19) for Novice Skydivers who Returned the Second Packet of Questionnaires

	2.	3.	4.	5.	6.	7.	8.	9.
1. Unconscious Death Fear (pre-jump)	-.03	.03	-.28	-.41	.25	-.34	-.49	-.44
2. Unconscious Death Fear (post-jump)		.26	.22	.23	.19	.11	.33	-.01
3. Unconscious Death Fear (follow-up)			-.23	.01	-.29	-.14	.08	-.05
4. Peak Experiences (post-jump)				.56*	-.26	.78**	.62**	.20
5. Implicit Spirituality (post-jump)					-.44	.54*	.95**	.68**
6. Conscious Death Anxiety (post-jump)						-.36	-.47*	-.08
7. Peak Experiences (follow-up)							.65**	.21
8. Implicit Spirituality (follow-up)								.63**
9. Intrinsic Religiosity (follow-up)								

*Note: * p < .05; **p < .01*



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July, 2007

Title of Study: Attitudes, Values and Experiences of Skydivers and Others

Principal Investigator: Carol Chalmers, MA student, Department of Psychology, Brock University

Faculty Supervisor: Dr. Harry Hunt, Professor, Department of Psychology, Brock University

I, Carol Chalmers, MA student from the Department of Psychology, Brock University, invite you to participate in a research project entitled **Attitudes, Values and Experiences of Skydivers and Others**.

The purpose of this study is to investigate the relationship between skydivers' experiences, personal values, individual differences, and spirituality.

The expected duration of each participant is approximately 1 to 1 1/2 hours; 20 to 30 minutes today and another 30 to 45 minutes three or more weeks later (in a take home packet).

This research should benefit people who study unconscious and conscious processes. There is a huge amount of research studying spirituality, and this may add further insight into this area.

We wish to thank Tim Grech owner of Niagara Skydive Centre for his kindness in letting me use his site to recruit participants to fill out our questionnaires.

If you have any pertinent questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905-688-5550 ext 3035, reb@brocku.ca).

If you have any questions, please feel free to contact me at cc01ac@brocku.ca.

Thank you,

Carol Chalmers
MA student
905-688-5550 ext. 3817
cc01ac@brocku.ca

Dr. Harry T. Hunt
Professor
905-688-5550 ext. 3817
hhunt@brocku.ca

This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board [file # 06-357]

Date: July 26, 2007
Project Title: Attitudes, Values and Experiences of Skydivers and Others

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INVITATION

You are invited to participate in a study that involves questionnaire research. The purpose of this study is to consider the relationships between skydivers' experiences, personal values, individual differences and spirituality. This will be explained more fully after your participation.

WHAT'S INVOLVED

As a participant, you will be asked to read and sign this letter of consent, answer a few questions about yourself, and then on two separate occasions, fill in some questionnaires. The first time you will be asked to read two paragraphs and answer 4 questions about them, then to write one or two sentences in response to 2 questions and complete 6 short questionnaires. This should take about 20 to 30 minutes. You will then be given a packet of similar questionnaires to take home and complete after 3 weeks. Again you will be asked to read a paragraph and circle 4 numbers about the paragraph, and then answer 7 more questionnaires. Participation will take between 30 to 40 minutes of your time. You may decide at any time whether or not you wish to participate in any part of the study. Please mail the stamped, self-addressed packet to Brock University.

POTENTIAL BENEFITS AND RISKS

Possible benefits of participation include knowing that your opinion is valuable, and we could not do this research without you. You will be adding to a greater understanding and insight into several areas, which will be explained fully once you have completed the study. If you find yourself uncomfortable with specific questions, please inform the researcher and you may skip that part entirely or withdraw from the study.

CONFIDENTIALITY

All information that you provide is considered confidential; your name will not be included or, in any other way, associated with the data collected in this study. Furthermore, because our interest is in the average responses of the entire group of participants, you will not be identified individually in any way in written reports of this research. If necessary, with your permission, anonymous quotations may be used. If you spontaneously share some information that I believe will add to our understanding, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. Data collected during this study will be stored in the locked office of Carol Chalmers within Brock University. Data will be kept for 2 years while this research is ongoing, after which time all questionnaires will be shredded. Access to this data will be restricted to Carol Chalmers and her advisor, Dr. Harry Hunt.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions that you find intrusive, invasive or upsetting. Further, you may decide to withdraw from this study at any time and may do so without any pressure.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available in January of 2009. You may contact me at cc01ac@brocku.ca if you would like more information.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Principal Investigator or the Faculty Supervisor using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (06-357). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you very much for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____

Date: _____

When we read what someone has written, or listen to them speak, certain things they say may seem particularly well expressed, or may stick in our minds better than other statements.

This paragraph below was written by a student to describe a certain thought, issue or life experience.

Please read this paragraph, and consider carefully the ideas expressed. As you read over the paragraph, try to notice any thoughts in it that catch your attention or seem to fit with any thoughts or feelings you have had.

PLEASE READ THE PARAGRAPH ON THE NEXT PAGE, AND THEN
ANSWER THESE QUESTIONS

Based on this paragraph, please answer the following questions.
Higher numbers indicate stronger agreement.

How valid do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How biased do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How well-written do you find the essay?

1 2 3 4 5 6 7 8 9

How much would you like the author?

1 2 3 4 5 6 7 8 9

As a student travelling to Canada from the US, I did not feel safe. While their mosaic culture accepts and encourages people from diverse backgrounds to maintain their ethnicity, I found their traditional garb and languages to be excessive and confusing. Clearly their immigration policy is neither well thought out nor effective. They think that their policy of inviting all sorts of people from strange countries with their alien languages and gestures is humanitarian. Its just naive.

If Canada would only adopt the US policy regarding immigration and culturization it be much better off, and so would we!

When we read what someone has written, or listen to them speak, certain things they say may seem particularly well expressed, or may stick in our minds better than other statements.

This paragraph below was written by a student to describe a certain thought, issue or life experience.

Please read this paragraph, and consider carefully the ideas expressed. As you read over the paragraph, try to notice any thoughts in it that catch your attention or seem to fit with any thoughts or feelings you have had.

PLEASE READ THE PARAGRAPH ON THE NEXT PAGE, AND THEN ANSWER THESE QUESTIONS

Based on this paragraph, please answer the following questions.
Higher numbers indicate stronger agreement.

How valid do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How biased do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How well-written do you find the essay?

1 2 3 4 5 6 7 8 9

How much would you like the author?

1 2 3 4 5 6 7 8 9

After visiting my friend in Canada and being "treated" to a hockey game I don't get their fascination with that barbaric sport. Not only was the game itself violent, but the spectators anticipating and encouraging fights, even their children were yelling and screaming. The referees were obviously half-hearted in their efforts to stop the fights.

Canadians should follow America's lead and adopt baseball as their national sport. It's good, safe, fun for the whole family, and we don't teach our children to be violent.

When we read what someone has written, or listen to them speak, certain things they say may seem particularly well expressed, or may stick in our minds better than other statements.

This paragraph below was written by a student to describe a certain thought, issue or life experience.

Please read this paragraph, and consider carefully the ideas expressed. As you read over the paragraph, try to notice any thoughts in it that catch your attention or seem to fit with any thoughts or feelings you have had.

PLEASE READ THE PARAGRAPH ON THE NEXT PAGE, AND THEN
ANSWER THESE QUESTIONS

Based on this paragraph, please answer the following questions.
Higher numbers indicate stronger agreement.

How valid do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How biased do you find the author's point of view?

1 2 3 4 5 6 7 8 9

How well-written do you find the essay?

1 2 3 4 5 6 7 8 9

How much would you like the author?

1 2 3 4 5 6 7 8 9

After a 3 week visit to Canada I am so relieved to be back on American soil. Even with the exchange rate and their dollar creeping closer to our US standard, prices were outrageously high, especially for gas.

They could do well to learn from their neighbours to the south. If Canada would only adopt some American and economic ideas it would be much better off. For instance, their policy of equal services for all isn't working. My friend got injured while I was visiting and we spent many hours waiting for treatment. This would never happen in US, where people are rewarded for their hard work and effort.

Appendix H: (Conscious) Overt Death Anxiety Scale (post-jump)

ID number _____

Please respond to these statements, by circling either true or false.

I am very much afraid to die.	True	False
-------------------------------	------	-------

The thought of death seldom enters my mind.	True	False
---	------	-------

It doesn't make me nervous when people talk about death.	True	False
--	------	-------

I dread to think about having to have an operation.	True	False
---	------	-------

I am not at all afraid to die.	True	False
--------------------------------	------	-------

I am not particularly afraid of getting cancer.	True	False
---	------	-------

The thought of death never bothers me.	True	False
--	------	-------

I am often distressed by the way time flies so very rapidly.	True	False
--	------	-------

I fear dying a painful death.	True	False
-------------------------------	------	-------

The subject of life after death troubles me greatly.	True	False
--	------	-------

I am really scared of having a heart attack.	True	False
--	------	-------

I often think about how short life really is.	True	False
---	------	-------

I shudder when I hear people talking about a World War III.	True	False
---	------	-------

The sight of a dead body is horrifying to me.	True	False
---	------	-------

I feel that the future holds nothing for me to fear.	True	False
--	------	-------

Appendix I: Mortality Salience Prime (post-jump)

ID number__

Please briefly write down the emotions that the thought of your own death arouses in you.

What do you think happens to you as you physically die and after you are dead?

Appendix J: Positive and Negative Affect Scale (post-jump)

ID number _____

Please read each feeling or emotion and indicate how well it describes **you at this moment**, according to this scale.

	1 very slightly, not at all	2 a little	3 moderately	4 quite a bit	5 extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

ID number _____

Hood's State Experiences Scale for Skydivers

The following statements contain brief descriptions of a number of experiences. Some descriptions may refer to phenomena **that you may have experienced immediately before, during, or immediately after skydiving today**, while others do not. In each case note the description carefully and then circle how much the description **applies to your own experience of skydiving on this day only**.

Please mark each item, trying to avoid if possible, marking an item with "?". Please respond to all statements.

1. I have had an experience *immediately before, during, or immediately after skydiving today* which was both timeless and spaceless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

2. I have never had an experience *immediately before, during, or immediately after skydiving today* which was incapable of being expressed by words.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

3. I have had an experience *immediately before, during, or immediately after skydiving today* in which something greater than myself seemed to absorb me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

4. I have had an experience *immediately before, during or immediately after skydiving today*, in which everything seemed to disappear from my mind until I was conscious only of a void.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

5. I have experienced profound joy *immediately before, during, or immediately after skydiving today*.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

6. I have never had an experience *immediately before, during, or immediately after skydiving today* in which I felt myself to be absorbed as one with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

7. I have never experienced a perfectly peaceful state *immediately before, during, or immediately after skydiving today*.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

8. I have never had an experience *immediately before, during, or immediately after skydiving today* in which I felt as if all things were alive.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

9. I have never had an experience *immediately before, during, or immediately after skydiving today* which seemed holy to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

10. I have never had an experience *immediately before, during, or immediately after skydiving today* in which all things seemed to be aware.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

11. I have had an experience *immediately before, during, or immediately after skydiving today*, in which I had no sense of time and space.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

12. I have had an experience *immediately before, during or immediately after skydiving today* in which I realize the oneness of myself with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

13. I have had an experience *immediately before, during, or immediately after skydiving today* in which a new view of reality was revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

14. I have never experienced anything to be divine *immediately before, during, or immediately after skydiving today*.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

15. I have never had an experience *immediately before, during, or immediately after skydiving today* in which time and space were non-existent.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

16. I have never experienced anything *immediately before, during, or immediately after skydiving today* that I could call ultimate reality.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

17. I have had an experience *immediately before, during, or immediately after skydiving today* in which I felt that all was perfection at that time.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

18. I have had an experience *immediately before, during, or immediately after skydiving today* in which I felt that all was perfection to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

19. I have had an experience *immediately before, during, or immediately after skydiving today* in which I felt everything in the world to be part of the same whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

20. I have had an experience *immediately before, during, or immediately after skydiving today* which I knew to be sacred.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

21. I have never had an experience *immediately before, during, or immediately after skydiving today* which I was unable to express adequately through language.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

22. I have had an experience *immediately before, during, or immediately after skydiving today* in which left me with a feeling of awe.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

23. I have had an experience *immediately before, during, or immediately after skydiving today* that is impossible to communicate.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

24. I have never had an experience *immediately before, during, or immediately after skydiving today* in which my own self seemed to merge into something greater.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

25. I have never had an experience *immediately before, during, or immediately after skydiving today* which left me with a feeling of wonder.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

26. I have never had an experience *immediately before, during, or immediately after skydiving today* in which deeper aspects of reality were revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

27. I have never had an experience *immediately before, during, or immediately after skydiving today* in which time, place, and distance were meaningless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

28. I have never had an experience *immediately before, during, or immediately after skydiving today* in which I became aware of a unity to all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

29. I have had an experience *immediately before, during, or immediately after skydiving today* in which all things seemed to be conscious.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

30. I have never had an experience *immediately before, during, or immediately after skydiving today* in which all things seemed to be unified into a single whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

31. I have had an experience *immediately before, during, or immediately after skydiving today* in which I felt nothing is really dead.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

32. I have never had an experience *immediately before, during, or immediately after skydiving today* that cannot be expressed in words.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

ID number _____

Hood's State Experiences Scale

The following statements contain brief descriptions of a number of experiences. Some descriptions refer to phenomena that you may have experienced, while others refer to phenomena that you may not have experienced. In each case note the description carefully and then circle how much the description applies to your own experience, **focussing specifically on how you feel today**.

Please mark each item trying to avoid if possible, marking an item with "?". Please respond to all statements.

1. I have had an experience which was both timeless and spaceless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

2. I have never had an experience which was incapable of being expressed by words.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

3. I have had an experience in which something greater than myself seemed to absorb me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

4. I have had an experience in which everything seemed to disappear from my mind until I was conscious only of a void.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

5. I have experienced profound joy.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

6. I have never had an experience in which I felt myself to be absorbed as one with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

7. I have never experienced a perfectly peaceful state.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

8. I have never had an experience in which I felt as if all things were alive.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

9. I have never had an experience which seemed holy to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

10. I have never had an experience in which all things seemed to be aware.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

11. I have had an experience in which I had no sense of time and space.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

12. I have had an experience in which I realize the oneness of myself with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

13. I have had an experience in which a new view of reality was revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

14. I have never experienced anything to be divine.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

15. I have never had an experience in which time and space were non-existent.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

16. I have never experienced anything that I could call ultimate reality.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

17. I have had an experience in which I felt that all was perfection at that time.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

18. I have had an experience in which I felt that all was perfection to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

19. I have had an experience in which I felt everything in the world to be part of the same whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

20. I have had an experience which I knew to be sacred.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

21. I have never had an experience which I was unable to express adequately through language.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

22. I have had an experience in which left me with a feeling of awe.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

23. I have had an experience that is impossible to communicate.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

24. I have never had an experience in which my own self seemed to merge into something greater.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

25. I have never had an experience which left me with a feeling of wonder.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

26. I have never had an experience in which deeper aspects of reality were revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

27. I have never had an experience in which time, place, and distance were meaningless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

28. I have never had an experience in which I became aware of a unity to all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

29. I have had an experience in which all things seemed to be conscious.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

30. I have never had an experience in which all things seemed to be unified into a single whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

31. I have had an experience in which I felt nothing is really dead.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

32. I have never had an experience that cannot be expressed in words.

-2
Definitely
not true

-1
Probably
not true

?
I cannot
decide

+1
Probably
true

+2
Definitely
true

ID number _____

Hood's Trait Experiences Scale

The following statements contain brief descriptions of a number of experiences. Some descriptions may refer to phenomena that you may have experienced **over the course of your life**, while others refer to phenomenon that you may not have experienced. In each case note the description carefully and then circle how much the description applies to your own experience.

Please mark each item trying to avoid if possible, marking an item with "?". In responding to each item, please understand that the items may apply to one specific experience or to several experiences. Please respond to all statements.

We know that you have filled out this questionnaire already for one specific day only. In this case, here you are considering whether you have had any of these experiences over your entire life, in any circumstances.

1. I have had an experience which was both timeless and spaceless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

2. I have never had an experience which was incapable of being expressed by words.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

3. I have had an experience in which something greater than myself seemed to absorb me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

4. I have had an experience in which everything seemed to disappear from my mind until I was conscious only of a void.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

5. I have experienced profound joy.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

6. I have never had an experience in which I felt myself to be absorbed as one with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

7. I have never experienced a perfectly peaceful state.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

8. I have never had an experience in which I felt as if all things were alive.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

9. I have never had an experience which seemed holy to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

10. I have never had an experience in which all things seemed to be aware.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

11. I have had an experience in which I had no sense of time and space.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

12. I have had an experience in which I realize the oneness of myself with all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

13. I have had an experience in which a new view of reality was revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

14. I have never experienced anything to be divine.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

15. I have never had an experience in which time and space were non-existent.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

16. I have never experienced anything that I could call ultimate reality.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

17. I have had an experience in which I felt that all was perfection at that time.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

18. I have had an experience in which I felt that all was perfection to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

19. I have had an experience in which I felt everything in the world to be part of the same whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

20. I have had an experience which I knew to be sacred.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

21. I have never had an experience which I was unable to express adequately through language.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

22. I have had an experience in which left me with a feeling of awe.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

23. I have had an experience that is impossible to communicate.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

24. I have never had an experience in which my own self seemed to merge into something greater.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

25. I have never had an experience which left me with a feeling of wonder.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

26. I have never had an experience in which deeper aspects of reality were revealed to me.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

27. I have never had an experience in which time, place, and distance were meaningless.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

28. I have never had an experience in which I became aware of a unity to all things.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

29. I have had an experience in which all things seemed to be conscious.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

30. I have never had an experience in which all things seemed to be unified into a single whole.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

31. I have had an experience in which I felt nothing is really dead.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

32. I have never had an experience that cannot be expressed in words.

-2	-1	?	+1	+2
Definitely not true	Probably not true	I cannot decide	Probably true	Definitely true

Please indicate how you feel **in general** in response to the following statements.

1) What religion offers me most is comfort when sorrows and misfortune strike.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

2) I try hard to carry my religion over into all my other dealings in life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

3) One reason for my being a congregation member is that such membership helps to establish a person in the community.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

4) Quite often I have been keenly aware of the presence of God or the Divine Being.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

5) The purpose of prayer is to secure a happy and peaceful life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

6) My religious beliefs are what really lie behind my whole approach to life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

7) It doesn't matter as much what I believe so long so long as I lead a moral life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

8) The prayers I say when I am alone carry as much meaning and personal emotions as those said by me during services.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

9) Although I am a religious person I refuse to let religious considerations influence my everyday affairs.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

10) If not prevented by unavoidable circumstances, I attend my house of worship.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

11) My house of worship is most important as a place to formulate good social relations.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

12) If I were to join a religious group I would prefer to join a Bible study group rather than a social fellowship.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

13) Although I believe in my religion, I feel that there are many more important things in life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

14) Religion is especially important to me because it answers many questions about the meaning of life.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

15) I pray chiefly because I have been taught to pray.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

16) I read literature about my faith.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

17) A primary reason for my interest in religion is that my house of worship is a congenial social activity.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

18) It is important to me to spend periods of time in private religious thought and meditation.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

19) Occasionally I find it necessary to compromise my religious beliefs in order to protect my social and economic well-being.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

20) The primary purpose of prayer is to gain relief and protection.

-2	-1	0	+1	+2
Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree

Please indicate how you feel about these statements, **focusing on how you are feeling today.**

1) Deep down I believe that the existence of the universe is ultimately a gift and an expression of absolute generosity.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

2) Deep down I believe that no matter how much humanity develops we are all ultimately dependent on a higher reality that is totally beyond us.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

3) I believe that in the end the deepest response to our existence can only be humility and gratitude.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

4) I believe that death is an opening into eternity and infinity.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

5) An all powerful higher being watches over our lives.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

6) Deep down I believe that love and compassion are the deepest truths of everything that is.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

7) No matter how powerful or knowledgeable humanity may get, we are still "nothing" compared to the truth of ultimate reality.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

8) Deep down I believe that at the deepest level underneath all the complexity of life there is only perfect freedom and perfect peace.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

9) Deep down I believe that faith in a higher reality and truth is always warranted.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

10) Deep down I believe that there is a higher and ultimately benevolent intelligence behind everything that happens.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

11) Deep down I sense that our ordinary everyday awareness ultimately comes from a source that is boundless and eternal.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

12) Faith in an all powerful higher guidance running through our lives is always warranted.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

We know that you have filled out this questionnaire already for one specific day only. In this case, here please indicate how you feel about these statements in general.

1) Deep down I believe that the existence of the universe is ultimately a gift and an expression of absolute generosity .

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

2) Deep down I believe that no matter how much humanity develops we are all ultimately dependent on a higher reality that is totally beyond us.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

3) I believe that in the end the deepest response to our existence can only be humility and gratitude.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

4) I believe that death is an opening into eternity and infinity.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

5) An all powerful higher being watches over our lives.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

6) Deep down I believe that love and compassion are the deepest truths of everything that is.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

7) No matter how powerful or knowledgeable humanity may get, we are still
 "nothing" compared to the truth of ultimate reality.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

8) Deep down I believe that at the deepest level underneath all the complexity of life there is only perfect freedom and perfect peace.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

9) Deep down I believe that faith in a higher reality and truth is always warranted.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

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-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

11) Deep down I sense that our ordinary everyday awareness ultimately comes from a source that is boundless and eternal.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

12) Faith in an all powerful higher guidance running through our lives is always warranted.

-3	-2	-1	0	+1	+2	+3
I totally disagree	I mostly disagree	I somewhat disagree	Neutral	I somewhat agree	I mostly agree	I totally agree

1) I enjoy many of the rides in amusement parks.

True

False

2) I would like to hitchhike across the country.

True

False

3) I like to gamble for money.

True

False

4) I like "wild" uninhibited parties.

True

False

5) I can't stand watching a movie that I've seen before.

True

False

6) I sometimes use "four-letter" words to express my feeling or to shock someone.

True

False

7) Although it is sometimes necessary, I usually dislike routine kinds of work.

True

False

8) I often wish I could be a mountain climber.

True

False

9) I get bored seeing the same old faces.

True

False

10) I like to dress in unusual styles.

True

False

11) I would like to travel to strange, out of the way places like the upper Amazon or Antarctica.

True

False

12) When you can predict almost everything a person will do and say he or she must be a bore.

True

False

13) I usually don't enjoy a movie or play where I can predict what will happen in advance.

True

False

14) I have tried marijuana or would like to.

True

False

15) I would like to try some of the drugs that produce hallucinations.

True

False

16) I would have preferred living in the unsettled days of our history.

True

False

17) I sometimes like to do things that are a little frightening.

True

False —

18) I enjoy the company of real "swingers."

True

False

19) I often like to get high (drinking liquor or smoking marijuana).

True

False

20) A person should change jobs from time to time simply to avoid getting into a rut.

True

False

21) I like to try new foods that I have never tasted before.

True

False

22) It's normal to get bored after a time with the same sexual partner.

True

False

23) Looking at someone's home movie or travel slides bores me tremendously.

True

False

24) I like to try new brands on the chance of finding something different or better.

True

False

25) I would like to take up the sport of water-skiing.

True

False

26) Most adultery happens because of pure boredom.

True

False

27) I would like to try surfboarding.

True

False

28) I find people who disagree with my beliefs more stimulating than people who agree with me.

True

False

29) I would like to take off on a trip with no planned or definite routes, or timetable.

True

False

30) I would like to make friends in some of the "far-out" groups like artists or "hippies."

True

False

31) I would like to learn to fly an airplane.

True

False

32) I like to see beards on men.

True

False

33) I would like to go scuba diving.

True

False

34) I would like to meet some persons who are homosexual (men or women).

True

False

35) I would prefer modern jazz or classical music to more popular or light classical music.

True

False

36) I like to drive in open convertibles.

True

False

37) I would like to try parachute jumping.

True

False

38) I like to listen to new and unusual kinds of music.

True

False

39) I prefer friends who are excitingly unpredictable.

True

False

40) I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal.

True

False

41) Sometimes I like to swim far out from the shore.

True

False

42) I often enjoy flouting irrational authority.

True

False

43) I often find beauty in the "clashing" colors and irregular forms of modern paintings.

True

False

44) I get restless if I have to stay around home for any length of time.

True

False

45) I like to dive off the high board.

True

False

46) I like to date members of the opposite sex who are physically exciting.

True

False

47) Keeping the drinks full is the key to a good party.

True

False

48) I sometimes like to do “crazy” things just to see the effects on others.

True

False

49) The worse social sin is to be a bore.

True

False

50) I wish I didn't have to waste so much of a day sleeping.

True

False

51) A person should have considerable sexual experience before marriage.

True

False

52) I could conceive of myself seeking pleasures around the world with the “jet set.”

True

False

53) I like people who are sharp and witty even if they do sometimes insult others.

True

False

54) Almost everything enjoyable is illegal or immoral.

True

False

55) A good painting should shock or jolt the senses.

True

False

56) I enjoy watching many of the “sexy” scenes in movies.

True

False

57) I enjoy a heated intellectual argument even if people sometimes get upset.

True

False

58) I feel best after taking a couple of drinks.

True

False

59) I would like to drive or ride on a motorcycle.

True

False

60) People should dress in individual ways even if the effects are sometimes strange.

True

False

61) I would like to sail a long distance in a small but seaworthy sailing craft.

True

False

62) I have no patience with dull or boring persons.

True

False

63) I think I would enjoy the sensations of skiing very fast down a high mountain slope.

True

False



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March, 2007

Dear

Thank you very much for participating in this research! We could not do it without you! To avoid any possible influence on the results PLEASE do not share or discuss this letter with anyone who might be a future participant in this study.

The objective of this research is to examine whether peak or mystical type experiences and/or intrinsic religious beliefs (in combination with implicit spirituality) affect unconscious and conscious death fear, in the context of skydiving.

Terror Management Theory (TMT; Solomon, Greenberg & Pyszczynski, 2000), a research orientation, suggests that humans have the unique ability to be aware of their inevitable death, so unconsciously defend against this with either self-esteem or cultural world views. Over 150 TMT studies have shown that when people are primed with death (i.e. writing about what happens when you die) they defend their cultural world view more than when mortality is not made salient. You answered the questions about your Canadian world views 3 times, once to measure your baseline cultural world view, and the second time to see if your view changed as a result of writing about death, and the third time as a general comparison.

You were part of one of three groups that filled out these questionnaires, veteran skydivers, novice skydivers, and their friends and/or spouse. Qualitative research by Lipscombe (1999) suggests that veteran skydivers have peak experiences while skydiving. According to Lifton (1973) peak experiences are correlated with a direct sense of timelessness and felt unity, so that death may no longer feel as threatening. This gives rise to previously unexplored questions, for example, "Do veteran skydivers respond less intensely to death primes than people who do not have these experiences?" This is one of the questions which we hope to answer.

Other research by Jonas and Fischer (2006) shows that intrinsically religious people also do not respond as intensely to death fear. This lead to the question, "Do people who are both intrinsically religious and in touch with their implicit spirituality also respond less intensely to TMT?" You filled out various questionnaires to measure your implicit spirituality, death fear and intrinsic religiosity.

Other questions involved in this study concern conscious fear of death (the last questionnaire that you completed on the first day). For instance, "Do novice skydivers consciously fear death more because they were so close to it?" and "Do people who are both intrinsically religious and implicitly spiritual consciously fear death less because of their beliefs?"

Finally, you filled out several personality questionnaires because we want to see if certain characteristics are associated with either conscious or unconscious death fear, and what differentiates skydivers from non-skydivers.

All of our analysis will be aggregated and confidential, so there will be no way to identify you or your information.

If you found any aspect of this study upsetting, please let me know. We have a list of counsellors within the Niagara Region available if you feel you need to discuss anything further.

Once again, thank you for coming to Skydive Niagara (1-866-564-5867) and for participating in this research! If you would like to know more about the results of this research, please e-mail me at cc01ac@brocku.ca after January 2009. I won't have the analyses done before then.

Sincerely,



Carol Chalmers

References

- Lipscombe, N. (1999). The relevance of the peak experience to continued skydiving participation: A qualitative approach to assessing motivations. *Leisure Studies*, 18, 267-288.
- Lifton R. J. (1973). The sense of immortality: On death and the continuity of life. *American Journal of Psychoanalysis*, 33, 3-15.
- Jonas, E. and Fischer, P. (2006). Terror Management and religion: Evidence that intrinsic religiousness mitigates worldview defense following mortality salience. *Journal of Personality and Social Psychology*, 91(3), 553-567.