DISSERTATION

GIVING DEATH A SECOND GLANCE: AN INVESTIGATION OF EXISTENTIAL

AWARENESS

Submitted by

Isaac Hunter

Department of Psychology

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Doctoral Committee:

    Advisor: Bryan Dik

    James Banning
    Larry Bloom
    Jennifer Harman

ABSTRACT

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AWARENESS

The promotion of awareness is arguably one of the central features of counseling. Research on

existential awareness has produced mixed results with regard to how people react when

experiencing such awareness. Differences in outcome are seemingly based on the level of

awareness achieved and on how deeply that awareness resonated. This existential awareness is

sometimes perceived as a threat and therefore something people try to defend against. At deeper,

more personal levels, this awareness appears to often add meaning and value to the experience of

living. Aside from near death experience and post traumatic growth research, few studies have

examined this deeper level of awareness in detail. The present study attempted to promote this

deeper level of awareness by having participants imagine and reflect on a scenario describing

one's last moments before impending death. The present study used qualitative and quantitative

analysis to examine: if this intervention was effective, if individual characteristics had an

influence on this intervention's effectiveness, and the duration of potential intervention outcomes

over time. Qualitative results suggest that the intervention was effective in getting participants to

engage in reflection on their own lives. However, significant results were not obtained through

the quantitative measures that were employed to examine moderators and intervention impact

over time.

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INTRODUCTION

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We can shed those layers of habits and learned responses that lead to careless action and thoughts. We can learn to look before we leap and think before we act; we can stop living like moths who are inevitably attracted to bright, dangerous flames. We can shake free of our knee-jerk behaviors and responses to life; we can let go of dissatisfying and unhealthy patterns. And, as we become more mindful, our innate wakefulness – our spiritual and inner wisdom – begins to blaze forth. (Lama Surya Das, 1999, p. 191)

The importance of self-awareness is illuminated in the above passage in a variety of ways. This passage suggests that only when individuals are aware of their habits and patterns are they able to make choices to change or grow beyond them. As life is ever changing, being aware of ourselves as part of the equation is central to our ability to adapt and avoid or overcome that which may impede our well-being. Without awareness, like a moth attracted to light, a person may be trapped and doomed to forever seek that which might not actually be fulfilling, or engage in patterns that are destructive. In addition, as suggested above, when an individual is able to be more self-aware, their own inner wisdom can finally begin to emerge. At this point they no longer simply react to life, but instead may be able to act in adaptive and intentional ways. Self-awareness, as highlighted in this passage appears to be something almost completely positive, and implies that a person lacking in awareness may have a more difficult life and dissatisfying existence.

In the field of counseling psychology the promotion of self-awareness is arguably one of the central factors linked to positive growth, the ability to change, and psychological well-being (Carson, Becker, Vance & Forth, 2003; Couch, 1993; Han 2004). Self-awareness, defined as "conscious knowledge of one's own character, feelings, motives, and desires" (Oxford Online

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Dictionary, 2012) assists in many aspects of the therapeutic process and little progress could be achieved in its absence. It is integral in understanding the origins, current state, and outcomes of difficulties clients may face. Awareness allows clients to better understand their past experiences and how those experiences may have in turn affected them. It also illuminates how current ways of being and functioning are not random creations, but are instead methods developed to deal with realities they have experienced.

As clients gain a clearer understanding of themselves and the environments in which they operate, they are more capable of making informed decisions about the life they want to live and the kind of person they want to be (Jinks, 1999). Similarly, self-awareness allows clients to monitor their own thoughts and behaviors from a different perspective, allowing them to adjust or decrease certain patterns that have become automatic yet have negative consequences. Self-awareness also is essential for changes made in counseling to be sustainable. If clients are merely following along without a personally held understanding of the "why" or "how" of what transpires in counseling, it is unlikely that they will be able to cope on their own in the future should a similar difficulty arise (Philippot & Segal, 2009). It is easy for people to fall back into old habits without the self-awareness required to monitor the ongoing ebb and flow that life brings. In summary, self-awareness is critical for growth and change in the way counseling psychology has conceptualized the counseling process thus far (Elliot, 1989).

Not only is awareness considered an important part of the client's experience in therapy, it also is a major aspect of many counseling training programs and instructional literature (Guindon, 2011; Kanitz, 1998). These programs often instruct counselors to be aware

of their own thoughts, biases, weaknesses, and blind spots. Training aims to help them have a

better understanding of how their actions and words can impact others, as they are in positions

of dealing with diverse groups of people (Kanitz, 1998). This awareness promotes more

effective therapy as counselors are better able to understand their part in the counseling

relationship as well as being more healthy themselves (Johns, 1997). Counseling programs also

focus on the ability to better understand others and have empathy which are also connected

with self-awareness as empathy requires an awareness of the way people experience life and

the emotions that others feel (Bradecich, 2010). In addition to more effective treatment of

clients, having self-awareness can assist in therapists' awareness of their own needs to live

more satisfying lives and prevent burnout (Brems, 2001). The concepts of transference and

counter transference also are thought to happen naturally and impact the way people perceive

and interact with others (Anderson & Berk, 1998). As these reactions are thought to occur

naturally without conscious effort, gaining more self-awareness is a means by which such

automatic reactions can be examined and adjusted, which also is a large factor in counseling

diverse clients.

The importance of self-awareness also has been stressed as a critical component of

multiculturally competent counseling, as cultural awareness is an aspect of the counseling

process for which being unaware can lead to counselors being harmful and ineffective (Hardy,

2009; Leach, Aten, Boyer, Strain & Bradshaw, 2010;). A lack of awareness of one's own

thoughts, emotions and beliefs about other groups, fear of negative evaluation and resistance

to becoming more comfortable with one's reactions to diversity are just some of the challenges

that therapists face as they struggle with the process of becoming more competent with diverse populations (Kanitz, 1998).

In summary, awareness is fundamental to counseling, both in what clients report experiencing and what is essential for effective therapists to develop. Awareness is thought to be central to living a life of making informed choices, and being more authentic and congruent. It also assists in helping people express greater empathy and understanding of others. Although seemingly attractive in every way, increased awareness is not always a welcome experience for those experiencing it (Becker, 1973). This appears to be especially true with regard to existential awareness, mortality salience, or essentially the understanding that for each and every one of us, life is temporary (Becker, 1973).

Existential Psychology and Philosophy

The unexamined life is not worth living – Socrates **(**Plato, trans. 1996).

Philosophers and existential psychologists have long proposed that proactively examining and embracing the struggles of life, rather than hiding from them, ultimately leads to a more meaningful existence. Anxiety often is acknowledged as part of this awareness, but the question of what to do with that anxiety is another important question and area that has been explored. Kierkegaard (1844/1980) described this existential anxiety as coming from the range of possibility that exist in life. There are no guarantees that only positive outcomes will come from the full spectrum of experiences that one may face, and in fact terrible things are also just as likely. Rather than trying to avoid or deny this existential anxiety through some form of distraction, Kierkegaard (1844/1980) states:

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> …This is an adventure that every human being must go through, to learn to be anxious in order that he may not perish either by never having been in anxiety or by succumbing in anxiety. Whoever has learned to be anxious in the right way has learned the ultimate (p. 155).
> What I am saying here probably strikes many as obscure and foolish talk, because they pride themselves on never having been in anxiety. To this I would reply that one certainly should not be in anxiety about men and about finitudes, but only he who passes through the anxiety of the possible is educated to have no anxiety, not because he can escape the terrible things of life but because these always become weak by comparison with those of possibility (p. 157).

These passages first reference those who claim they do not feel anxiety as often feeling proud that they are doing something right. This might refer to those who are able to maintain strong worldviews and sustain a sense of specialness that protects them from consciously ever really feeling death anxiety. Kierkegaard suggests that although this may appear attractive it is in fact a misguided notion and probably something akin to ignorant bliss. As ignorance is not a cure for problems, the anxiety still remains and very much affects the way a person thinks and behaves. Kierkegaard goes on to present the notion that the only true means of escaping anxiety is by facing it and dealing with it. By allowing oneself to be aware of the existential anxiety of life one is in turn set free from petty worries as the important responsibility of choosing one's life path overshadows more trivial anxieties.

Friedrich Nietzsche also had much to say about how life should be approached and was a strong promoter of having a deep awareness of our choices and experiences to lead to more meaningful existence. An excellent example of this awareness and responsibility for choice comes in the form of a thought experiment he proposed:

> What, if some day or night a demon were to steal after you into your loneliest loneliness and say to you: "This life as you now live it and have lived it, you will have to live once more and innumerable times more; and there will be nothing new in it, but every pain and every joy…will have to return to you…

Would you not throw yourself down and gnash your teeth and curse the demon who spoke thus? Or have you once experienced a tremendous moment when you would have answered him: "You are a god and never have I heard anything more divine." If this thought gained possession of you, it would change you as you are or perhaps crush you. The question in each and every thing, "do you desire this once more and innumerable times more?" would lie upon your actions as the greatest weight. Or how well disposed would you have to become to yourself and to life to *crave nothing more fervently* than this ultimate eternal confirmation and seal? (Nietzsche, 1882/1974, pp. 273-274)

In this powerful statement Nietzsche, through the voice of his character Zarathustra, offers an idea that he claims if really accepted could have great implications for how people would choose to live. To imagine an eternally recurring life without change gives weight and meaning to choices and experiences which one undergoes throughout one's day-to-day activities. This existential awareness, he states, could have the potential to crush a person or to serve as a great motivation to change. Nietzsche acknowledges that this weight of eternal reoccurrence awareness would be heavy, and would no doubt agree that when given a taste of this awareness, many would naturally react by wanting to block it out or hide from it. Yet this thought experiment is not simply for entertainment, but instead a means to give more obvious importance to what is already important: being aware of how we consciously author the experience of our own lives.

In many ways the notion of an eternally reoccurring life is much like a life simply just lived once, as both situations really only grant the person living one life to create meaning for the eternity – whether that means death or being bound to live the same life over and over again. Either way, there is one chance to get it right, and to living meaningfully. Being able to just live day-to-day on autopilot, feeling that there is always tomorrow to grow, learn, and find meaning is a notion contrary to how Nietzsche suggests people live. Overall, he is strongly

stating that to be aware of the responsibility each person has to create a meaningful life has

tremendous potential to cause people to live better. He does not advocate running from the

responsibility that comes with awareness, but instead suggests that people embrace it, and use

any discomfort they find in reflection of their own lives as a measure of what they should

change and how they could live better.

The work of Irvin Yalom has had a significant impact on modern psychotherapy,

particularly in the existential realm, where he has written much about death and therapy. One

of his more recent works, *Staring at the Sun: Overcoming the Dread of Death* (2008), focuses

specifically on death, and the conscious and unconscious implications of how humans deal or

do not deal with that reality. Through client stories and examples, Yalom demonstrates how the

fear of death, although often not apparent, plays a role in many of the problems clients and

humanity face. This fear of death has tremendous power to shape the lives of people, causing

them to seek specialness, wealth, power and so on. Not only does he encourage awareness, but

suggests that to be unaware often leads to many unpleasant and unfulfilling ways of being.

Although serving some purpose, these human mechanisms of dealing with underlying death

anxiety ultimately lead them to feeling worse as their lives appear to be coming to an end. In a

passage from *Staring at the Sun* (2008) Yalom argues:

> The death anxiety of many people is fueled ... by disappointment at never having
> fulfilled their potential. Many people are in despair because their dreams didn't come
> true, and they despair even more that they did not make them come true. A focus on
> this deep dissatisfaction is often the starting point in overcoming death anxiety (p.140).

Yalom states that to uncover and face the dissatisfaction of life, and of our methods of

remaining unaware is key to really overcoming death anxiety. Similar to Nietzsche, he

encourages a closer more serious examination of death anxiety, rather than hiding from it or pushing it away. Doing the latter does not solve the problem, but invites death anxiety to surface in other, negative ways. Instead, by examining the anxiety one can find more meaningful ways of living and of viewing life, and thereby find more satisfaction with the lives they are leaving and the inevitable outcome that lies further down their path.

In summary, philosophers and existential psychology appear to converge on the conclusion that humans engage in many behaviors to decrease death anxiety and to push away awareness of uncomfortable realities. However, they do not stop there, but go on to suggest that rather than push away this awareness, people are better served by embracing it. A great deal of responsibility for authoring one's life comes with increased awareness, but taking that responsibility seriously is often what lends meaning and purpose to life. This awareness might not always lead to happiness in a simple worldly (i.e., hedonic or pleasure-driven) sense, but is proposed as leading to a more fulfilling, meaningful life, rich with thoughts and feelings as well as an appreciation for the spectrum of experiences that humans face. However, not all research supports the idea that increasing awareness leads to such positive outcomes as meaningful and purposeful lives.

Mortality Salience and Terror Management Theory

> *Everything cultural is fabricated and given meaning by the mind, a meaning that was not given by physical nature. Culture is in this sense "supernatural," and all systematizations of culture have in their end the same goal: to raise men above nature to assure them that in some ways their lives count more than merely physical things count.* (Becker, 1975, p. 4)

> *The hope and belief is that the things that man creates in society are of lasting worth and meaning, that they outlive or outshine death and decay, that man and his products count.* (Becker, 1973, p. 5)

Ernest Becker presented an analysis of the human condition that has had a profound impact on the psychology of death awareness. Becker argued that one of the main underlying motivations that drive human behavior is that of avoiding death, or at least the apparent permanence of it (Becker, 1973). Becker states that much of the activity in which humans have engaged, even that which appears to be for the betterment of society as a whole, is driven by this fear of death and a need to avoid the very difficult acceptance of the impermanence of life in this world, specifically their own. From this perspective, awareness of death serves as a type of self-awareness that humans try to push out of consciousness through investing their time and attention in other behaviors. As the above passage describes, this focus on investing in or creating other things serves as a comfort and draws attention away from reflecting on or fully acknowledging their own mortality, which as existential philosophers note is indeed a scary task.

Terror Management Theory (TMT) has specifically looked at how awareness of death or threats to one's life can impact a person in certain ways. However, these ways that seem to suggest more awareness of one's mortality are phenomenon most people avoid and are not related to positive outcomes. Terror Management Theory builds on the work of Becker (1973) and states that due to the consciously self-aware nature of the human condition, humans cannot escape the resulting existential anxiety that is a product of their condition (Greenberg, Pyszczynski, & Solomon, 1986; Solomon, Greenberh, & Pyszczynski, 1991). Therefore, humans are motivated to reduce death anxiety through the way they live and their theory specifies that

this anxiety reduction is achieved primarily by engaging in two processes: (1) the creation and maintenance of cultural worldviews, and (2) seeking self-esteem.

Terror Management Theory holds that cultural worldviews, whether steeped in religious or non-religious foundations, enable individuals to not only insulate themselves from death anxiety but in some cases to confront and even find value in potential mortality. In the *Handbook of the Uncertain Self*, which discusses Terror Management Theory and uncertainty, Landau, Greenberg, and Kosloff use military service as one method of death transcendence by explaining how soldiers may derive a symbolic sense of immortality by identifying with a broader purpose that extends beyond their own life (Landau, Greeenberg, & Kosloff, 2010). In this regard cultural worldviews are useful in that they provide a framework through which humans can value their existence, which may allow them to be less concerned about, or aware of, threats to their mortality.

Agreement with, and investment in these worldviews may help people internalize standards and norms that allow them to live and serve as productive members of society. Worldviews also help to provide a sense of stability and security where one can work toward symbolic forms of immortality such as wealth, power, fame, posterity and control. Worldviews also include cultural belief systems that may contain belief in actual immortality through existence in an afterlife, or soul that lives forever, or another form of continued existence such as reincarnation. Research on terror management supports this through findings that participants are more likely to defend and support their worldviews when challenged with reminders of their own mortality (Routledge & Arndt, 2005).

Previous TMT studies have attempted to heighten the mortality salience of participants either through self-suggestion (death-related questions interspersed among other filler questions), subliminal messages (flashing the word "death" or displaying other death symbols rapidly on a computer screen or television), or through an environmental factor that would lend itself to mortality saliency (walking past a funeral parlor or a cemetery; Routledge & Arndt, 2005). TMT has labeled these as "mortality salience" manipulations and they are geared toward promoting an awareness of death for individuals experiencing the manipulation. Studies have claimed "mortality salience effects" in diverse populations ranging from Israeli soldiers to Australian aborigines (Routledge & Arndt, 2005). Generally, the effects (e.g., in group identification, willingness to punish or harm "outsiders" and feelings of security or life satisfaction) identified in these studies are attributed to participants' demonstration of Worldview Defense – that is, the tendency to identify with and value ideological or literal presentations of an associated group (racial, national, ideological, religious) and to devalue or experience decreased feelings of tolerance toward individuals and groups outside the subject's perceived affiliation (Routledge & Arndt, 2005).

Self-esteem is thought to serve a function similar to worldview defense by creating a sense of self-importance that may also allow individuals to suspend their awareness of a time-limited existence. Many studies have demonstrated increased efforts to defend and bolster self- esteem when mortality salience is heightened (Routledge, Ostafin, Juhl, Sedikides, Cathey, & Liao, 2010). Behaviors observed in individuals with high reported self-esteem have ranged from more aggressive driving to more willingness to take on high-risk business propositions as well as to take on a more difficult testing demonstrating one's creativity (Landau, Greenberg &

Kosloff, 2010). In contrast, individuals with low reported self-esteem tend to become more risk averse and more careful after being primed with mortality salience-inducing stimuli, suggesting they wish to avoid failure in general but perhaps acutely prior to the end of life (Landau, Greenberg & Kosloff, 2010).

Terror Management Theory and methodology has been used to respond to current and culturally relevant questions. The foci of TMT studies have ranged from a general examination of mortality salience as an archetype open to manipulation in general and more specifically in its importance in affecting individual need for world-view defense and impacts on self-esteem. TMT has been used within the context of addressing specific political and cultural concerns like the death penalty's efficacy as judicial public policy (Judges, 1999) as well as the lasting effects the September 11, 2009 terrorist attacks have had in terms of increased mortality salience and resulting anxiety and negative stress responses (Thomas, 2003).

Most recently, a comprehensive review of TMT and mortality salience impacts on self-esteem and self-esteem's role as anxiety buffer was evaluated through eight studies by Routledge, Ostafin, Juhl, Sedikides, Cathey, and Liao (2010). Each of these studies attempted to measure for "proximal" (when thoughts of death are initially confronted or dismissed by a person) and "distal" (when death thoughts are more accessible but are not the immediate focus of a person) effects of mortality salience. This article is significant in its demonstration of potential negative adaptive strategies of individuals with low-self esteem as well as demonstrating the importance of self-esteem and worldview continuity. Negative effects observed across the eight studies included decreased feelings of well being, decreased feelings of vitality, and decreased feelings of meaning and purpose. Participants were shown to be

susceptible to manipulation of self-esteem and mortality salience, with more significant results observed from those manipulated toward lowered self-esteem and worldview vulnerability (Routledge et al., 2010).

Another recent study building on TMT methodology was conducted with eighty-eight Spanish undergraduates in 2008 by Sani, Herrera and Bowe. The mortality salience manipulation asked the participants to describe thoughts and emotions that the thought of death, and their death in particular, aroused in them in general as well as the physical pain they anticipated or associated with death. The control group was asked what type of emotions the thought of their next round of important exams aroused in them, and what they anticipated would happen during the exam. Emotional states of both groups were measured using a self-report instrument, PANAS-X (Sani, Herrera & Bowe, 2008), which assessed negative and positive affectivity. Following priming, both groups were asked to complete a word completion task involving 18 word fragments, six of which could potentially have been completed with a death related word (e.g., cof__, sk__,de__). The word fragment completion task was used as evidence to detect the effectiveness of the mortality salience manipulation in that the mortality salience group was expected to be more prone to use death related words to complete the word fragments - which was shown to be true in the study (Sani, Herrera & Bowe, 2008). After this task participants were given two questionnaires testing for strength of group identification (Doosje, Ellemers, & Spears, 1995 ; Sani et al., 2008). As the study hypotheses predicted, the mortality salience group scored significantly higher in regard to in-group identification.

Terror Management Theory has also provided a solid framework for why certain elements of public policy and national discourse, arguably which have little pragmatic

justification, continue to hold sway as populist positions, specifically within the context of capital punishment (Judges, 1999). This author suggests that the death penalty likely operates on a less conscious level as a reminder of mortality and a threat to worldview. If people are not really able to consider their own mortality consciously, due to it being something they are too guarded from, then perhaps through a TMT lens this form of punishment might not operate in the fashion in it was intended. This provides another example of how the threat of mortality has played out in society, potentially with unintended or unknown consequences because reactions to this threat may not be processed consciously to inform decision making regarding how one might behave.

Another aspect of TMT is that it helps to illuminate how strong stress responses occur in the aftermath of a catastrophic event, even to those not directly involved. Thomas (2003) investigated prolonged acute stress responses in response to the terrorist attacks of September 11, 2001. The most interesting and remarkable aspect of her study is that all of the participants were middle-aged women from rural Tennessee who had no personal relatives affected by the attacks but who were still impacted as indicated by open-ended responses to the events and then by stress surveys taken over a period of six months. Thomas highlights that a high percentage of mid-life American women remained distressed about the events of 9/11 and continued to exhibit and feel heightened feelings of fear, sadness, anger, powerlessness and distrust. These responses were shown to be sustained beyond the six weeks or 90 days designated for an acute stress reaction and remained pervasive in the women's lives. As with other theoretical self-reflection TMT studies, the women of this real life TMT study exhibited increased in-group identification or "cocooning" as identified in the study as well as more

intense expressions of distrust and bigotry, which TMT would identify as a natural worldview defense response (Thomas, 2003).

The most encompassing effort toward a quantitative Terror Management meta-analysis was published two years ago. The article "Two Decades of Terror Management Theory: A Meta-Analysis of Mortality Salience Research" examined 277 TMT studies over the last two decades to determine effect sizes of TMT studies as a whole as well as evaluate various characteristics of TMT studies over the last 20 years (Burke, Martens & Faucher, 2010). The study examined the characteristics of mortality salience experiments and moderators of mortality salience effects, and offered suggestions for future research.

According this review, by far the most common method of TMT studies has been to test the mortality salience hypothesis by manipulating distal death defense and demonstrating the participants increased world-view defense. In the vast majority of these studies, participants complete a questionnaire packet assessing personality traits as well as specific mortality salience provoking questions requiring subjects to write or contemplate their own deaths. After this initial priming, participants are typically given one or multiple distraction tasks to include word fragment completions and/or personality and mood assessments before they are evaluated for distal death defense mechanisms often demonstrated by increased group identification, bigotry toward outside groups and in general an increased world view defense response.

The meta-analysis also highlighted more interesting and peculiar tested manifestations of the mortality salience manipulation including outcomes, such as prejudice, sexual practices, tanning, having children, charity donations, voting, and driving (Burke, et al., 2010). Special

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attention is given to evaluating the relationship between mortality salience manipulation

alongside self-esteem priming and self-esteem reporting. The authors point out that more

recently many of the inconsistent positive and negative worldview distal defense responses

observed either from those with high self-esteem or low self-esteem may have more to do with

narcissistic tendencies of participants and failure of previous TMT studies to correct for

narcissistic personality types/tendencies when undergoing mortality salience manipulation

(Burke, Martens & Faucher, 2010).

Burke et al. (2010) acknowledged that the mortality salience manipulation was similar in

effect and manipulation to several similar studies that investigated uncertainty response in

general to include future anxiety and social isolation manipulations. However, the authors

conclude that there are unique effects observed across TMT studies due to the mortality

salience manipulation that are independent of other more general subject responses to anxiety

and uncertainty inducing manipulations:

> However, in general we found no evidence that MS effects depended on whether the
> control condition was neutral or more threatening. Thus, the available evidence
> supports the notion that death is in essence a qualitatively unique threat—that is,
> different not just by degree but also by dimension… Irvin Yalom (2008), a psychiatrist,
> recommended dissecting the fear of death clinically into its fundamental components,
> such as missing out on life, unfinished tasks, stories without closure, the end of personal
> consciousness and the concomitant unknown void beyond, and how loved ones would
> fare without you (Burke, Martens & Faucher, 2010, p. 186).

An important observation from the meta-analysis relevant for this present study is that

across 277 studies, the mortality salience manipulation effects increased in magnitude with

more delay from the manipulation to the observation point, and likewise reported that effect

sizes consistently increased when more distraction and delay methods were used whether in

the form of personality surveys, emotional surveys or word fragment exercises. There was a significant increase in effect size from one to two to three forms of delayed measurements of mortality salience response, leading the authors to make a suggestion for future TMT related studies to examine how long behavioral or attitudinal changes last, as there is little known whether these effects last for minutes, days, or longer following mortality awareness manipulations (Burke, Martens & Faucher, 2010).

Finally, the meta-analysis identified what others have pointed out as the weakness of TMT studies in general and why they may lack in substance with regard to recommending practical intervention and counseling techniques. They point to the fact that in general, mortality salience manipulations are designed to have participants think about death, but not specifically to be reflective of their own lives. Due to this, these manipulations may differ from real-life experiences that bring about mortality salience such as near-death experiences. The authors go on to suggest that continued research should investigate these differences and see if real-world events that cause mortality salience as well as reflection on one's life may lead to growth-oriented behavior as opposed to what is traditionally found in TMT studies (Burke, Martens & Faucher, 2010).

Overall, the message is that the terror and threat people feel when exposed to situations that remind them of death generally lead them to try to maintain and uphold their worldviews and in-group biases. Participants tend to have an external value orientation, and are more likely to be attracted to status symbols and things that would make them appear to be special in relation to others. This is thought to occur as a defense to the threat of death, which ultimately is a message of impermanence and lack of importance in the scheme of things.

As this seems to result in somewhat unpleasant outcomes, then is this an area to be avoided in counseling and life as a whole?

Terror Management Theory has evolved substantially from Becker's early conceptualization of mortality salience to the point where it is a school of thought in its own right within the broader Existential/Experimental Psychology community. It has strong empirical support and offers a rather encompassing framework with which to view human behavior, anxiety, self-esteem and culture creation with death anxiety reduction being the driving force. In the *Handbook of Experimental Existential Psychology* (Greenberg, Koole & Pysczynski, 2004), Terror management theory is offered as the construct or school of thought upon which modern Existential Psychology could be built. This has led some to confront terror management theory directly as being one-sided view of the human condition that lacks appreciation for the dualism of the human condition and of the various existential questions that come with being human (Wong, 2005). Stemming from these perceived inadequacies of Terror Management Theory to explain the full spectrum of how existential awareness is experienced comes another body of research that casts a different light on the outcomes of being more aware of our mortality.

Near-Death Experience and Posttraumatic Growth

An examination of real life events that bring about death awareness illuminates another way by which people can be dramatically affected by such awareness. Near-death experiences and posttraumatic growth research provide a source of data outside of the lab and are based on actual experiences people face in life and on the outcome of those experiences (Greyson, 1992; Tedeschi, Park, & Calhoun, 1998). Research in this area is often based on interviews,

scales and inventories which compare experiences of individuals with near-death experiences to control groups to examine potential differences (Bonenfant, 2004; Greyson & Ring, 2004; Kiser, 2009; Tedeschi & Calhoun, 1996). Whereas the mortality salience manipulation used in Terror Management research brought about changes in people that increased their focus on external value systems and self esteem enhancement, research on individuals reporting real life encounters with death and illness have found increased internal value system focus, meaning seeking, and examination of self (Carr, 1996; Groth-Marnat & Summers, 1998; Martin & Kleiber, 2005). These outcomes suggest that there are naturally varying types of mortality awareness achieved by those who have had close brushes with death compared to those in a lab setting who are primed to be more aware of their own mortality. An investigation of the literature in this area provides some insight into why these differences in the outcome of mortality awareness might occur.

Near-death experiences refer to situations in life where people come very close to dying or who in some cases are actually considered to be dead for a short period of time. These experiences can have powerful implications for how a person chooses to continue to live, as she or he has now come face to face with death. Many of those having near-death experiences have reported attitude, belief and values changes such as: increased concern for others, increased appreciation of life, reduced interest in material possessions, decreased concern for extrinsic values, increased focus on intrinsic values, and a greater search for meaning (Groth-Marnat & Summers, 1998; Martin & Kleiber, 2005; Ring, 1984; Thibodeau, 1999). These outcomes have a surprising degree of similarity with the goals of counseling as many clients

seek to better understand and communicate with others and to draw motivation from their own intrinsic values as they struggle to become more authentic and lead more meaningful lives.

A heightened sense of spirituality also has been described by those reporting a near-death experience (Bonenfant, 2004; Groth-Marnat & Summers, 1998; Skeikh, Ramaswami, & Sheikh 2007). However, this spirituality is reportedly not connected to an organized religion, but instead appears to be focused on the development of one's own individual spirituality, regardless of one's identification with a specific religion (Ring, 1984). These outcomes are in direct contrast to the Terror Management research findings in that subjects undergoing the mortality salience manipulation are more inclined to defend and adhere to their cultural worldviews such as religion rather than be interested in developing their own unique view (Greenberg et al., 1990). One's own unique view of course may align neatly with a particular cultural or religious worldview, but nonetheless this appears to be a unique difference between near-death experience and TMT findings.

Interestingly, other commonly reported outcomes of near-death experiences include an increased acceptance of death, reduced death anxiety as well as a greater sense of transcendence (Greyson, 1992; Groth-Marnat & Summers, 1998; Moody, 1975; Noyes, 1980; Ring, 1980). These outcomes contrast with fears or worries about death which might be expected after experiencing such an impactful event. Findings suggest that although the idea of death can be quite terrifying, it can be integrated into the way one approaches life, which can grant meaning and the impetus to change attitudes, beliefs and values. In alignment with existential philosophy, this death awareness therefore arguably adds meaning to, rather than

strips away meaning from, the human experience (Noyes, 1980), as permanence is not a

requirement for things to have value.

Posttraumatic growth is another area of study that examines the positive changes

people undergo after facing a particularly difficult life challenge (Tedeschi, Park, & Calhoun,

1998). Posttraumatic growth focuses on the changes undergone after individuals have faced

various life crises. Studies of posttraumatic growth have covered multiple types of experiences

and even have demonstrated cross-cultural validity (Splevins, Cohen, Bowley & Joseph, 2010).

Areas of research have examined a broad range of traumatic experiences such as serious health

complications, disease, depression, assault, and loss (Curbow, Legro, Baker, Wingard &

Sommerfield, 1993; Frazier, Conlon, & Glaser, 2001; Kiser, 2009; O'Connor; Wallerstein, 1986;

Wicker, & Germino, 1990). Research in this area overlaps with that of near death experiences,

with studies commonly finding participants to report an increased appreciation for life, more

meaningful interpersonal relationships, decreased fear of death, an increased sense of one's

personal strengths, decreased engagement in risky behaviors, and a decreased frequency of

self-indulgent behaviors (Heffron, Grealy & Mutrie, 2009; Tedeschi & Calhoun, 1996; Tedeschi

& Calhoun 2004). Results also have included increased amounts of personal reflection on life,

and increased awareness of spirituality and meaning seeking (Heffron et al. 2009; Tedeschi &

Chalhoun 2004).

Kiser (2009) examined the differing ways life challenges are handled by comparing

destructive outcomes and constructive outcomes of clinical depression which had been

diagnosed by licensed professionals. Within this case study participants conducted an intensive

interview, surveys and the Posttraumatic Growth Inventory to examine how participants

viewed their depression as well as the associated outcomes. Kiser found that those who viewed their experience as something to be avoided or denied experienced it as a more negative experience reporting feeling worthless, isolated, or increased depression. However, those who viewed their experience as a potential for growth, and approached it as something to be aware of and actively engaged in working through, found positive outcomes such as transformed self-identity, greater empathy, greater strength and increased appreciation for life. Similarly, optimism has been found to have modest correlation with positive posttraumatic outcomes such as personal strength, spiritual change and appreciation for life (Tedeschi & Calhoun, 1996). Tedeschi and Chalhoun (2004) also reported that undergoing significant cognitive processing seemed to play an important role in posttraumatic growth, suggesting that engaging in the process of dealing with the event is important to getting something meaningful out of it. Finally, Kashdan and Kane (2011) cite how trauma recovery requires being open to the experience of processing it and having awareness about how to best live life. They found that those participants who relied heavily on experiential avoidance were less likely to report posttraumatic growth. These findings suggest that those who are less willing to experience distress are also less likely to find positive outcomes and meaning following a traumatic event.

To summarize, research on near death experiences and posttraumatic growth points to awareness, acceptance, and a willingness to engage in working through existentially trying circumstances as being key to having positive outcomes. Avoidance or dismissal appears to result in a lack of growth or meaning. This body of research contrasts the idea that awareness of mortality does not exclusively lead to strengthened worldviews, greed, and prejudice, but can instead lead to many positive qualities, most notably increased appreciation for life,

increased sense of personal strength, more intrinsic motivation, and finding more meaning in existence.

Existential Awareness

As outlined thus far, existential awareness and experiences have been investigated in multiple ways. On one hand, Terror Management Theory shows that when threatened by the awareness of their mortality, participants will usually behave in ways that seem more extrinsically motivated, greedy and prejudiced. On the other hand, philosophers and psychologists often are in the business of promoting awareness of all kinds, and suggest that such awareness leads to a better, more meaningful way of life. Similarly, research and anecdotes of cases of near death experiences and posttraumatic growth also suggest that facing death and hardship lead people to look for more meaning, to seek meaningful relationships with others, and to be more intrinsically motivated. Due to the large amount of research conducted from both perspectives, it is reasonable to conclude that there may not be one kind of existential awareness, but instead that different experiences may lead to different levels of awareness, explaining why such disparate outcomes have been found.

Cozzolino, Staples, Meyers and Samboceti (2004) made the distinction between the mortality manipulation used in Terror Management research and the existential awareness gained from near death experiences as being based on how abstract death is perceived. They suggest that the former can be thought of as the statement like "what do you think about death?" whereas the latter is asking something like "This has been your life so far, you died or almost died, what do you think?" The authors go on to state that aside from level of abstractness, there is also an element of life review that is largely missing in mortality salience.

This review process is reported as being a very powerful part of near death experiences and allows for the ability to really reflect on the meaning of how one has lived and helps give a new perspective as life is reviewed from an almost outside perspective (Ring & Elsaesser Valarino, 1998). These distinctions again point to substantial differences in the way mortality can be perceived. Is mortality just a threat to one's sense of security that gets brushed aside through strengthening a pre-existing worldview? Or instead, does awareness and acceptance of death encourage increased attention on how to live better, with that awareness as the driving force for change and growth?

Research by Cozzolino and colleagues (eg., Cozzolino et al. 2004; 2006) has found support for these dual existential awareness systems and attempted to distinguish between the more abstract mortality salience and the more personal, reflective experience found in those experiencing near death experiences. In their initial experiment, participants received either a standard mortality salience manipulation or a new manipulation created to achieve a deeper, more personal existential awareness which they called *death reflection* (Cozzolino et al., 2004). This death reflection manipulation was designed to provide a laboratory-made awareness similar to those experiencing near death experiences. To do this, Cozzolino et al. based their death reflection manipulation on research by Ring and Elsaesser Valarino (1998), who found three central elements to the near death experience: an actual death, reviewing one's life, and being able to incorporate new perspectives.

Based on initial studies, this death reflection manipulation, when compared to a mortality salience manipulation, was found to be significantly different in anticipated dimensions such as decreased fear of pain, greater reflection on life, awareness of regrets in

life, positive thoughts of others, decreased selfishness, and reduction in religious beliefs (Cozzolino et al. 2004). In one study, responses from participants who experienced the death reflection manipulation were compared to those who had experienced the mortality salience manipulation. Themes were coded from each condition and then compared based on frequency. A MANOVA was used to compare the differences in frequency, and found that there was in fact a significant difference in how participant's responses differed, $F(12, 46) = 6.84$, $p<.01$. Specifically, compared to those in the mortality salience condition, those in the death reflection condition reported a significantly higher frequency of themes related to reflection on life, life regrets, and thoughts of others. In contrast, the mortality salience group reported a greater proportion of references to death pain, selfish thoughts of others, and religion. The death reflection manipulation also was distinct from mortality salience manipulations in design as it was created to be more personal and contain components of near death experiences. Outcomes were measured using content analysis and regression providing a base of evidence suggesting that participants undergoing the death reflection manipulation exhibit greater intrinsic motivation for behavior as well as decreased greed and selfishness which align with the outcomes of near death experience data. Greed was measured implicitly by having participants take raffle tickets as they completed study and comparing the amount taken between groups. Findings indicated that participants with a high level of extrinsic value orientation in the mortality salience group took significantly more than those in the death reflection group, ($\beta = -.49$, $f = -3.54$, $p<.05$).

The Present Study

Cozzolino et al. (2004) created the *Death Reflection* manipulation and found that, based on initial experiments, this deeper awareness could in fact be induced in the laboratory without an actual near-death or traumatic experience. The death reflection manipulation was designed to foster a deeper, more personal sense of awareness that goes beyond typical mortality salience manipulations. Due to the positive outcomes associated with this death awareness manipulation, the present study will use both quantitative and qualitative methods to examine and build on the existing, yet limited knowledge about this manipulation. The present study will use an experimental design that will test this manipulation as the independent variable and using random assignment of participants to either a control or experimental condition.

Independent Variable

The first purpose of the present study is to replicate Cozzolino's death reflection manipulation, but in a previously untested (in this context) administration format (i.e., internet-based). This modification will allow a greater number of participants to be included as well as promote future research in this area by providing a more accessible means by which to study this manipulation. Although the death reflection manipulation has not been used online, mortality salience manipulations have successfully used an internet based administration, suggesting these effects can be induced using this approach (Arndt, Vess, Cox, Goldenberg, & Lagle, 2009; Beatson, Loughnan, & Halloran, 2009). Aside from making the online modification, the current study will use the same scenario that Cozzolino et al. used with participants as well as the same follow up questions. It is hypothesized that previous results by Cozzolino et al.

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(2004) finding the death reflection manipulation to be effective will be replicated in the present study at post-intervention.

Dependent Variables

The success of replication will be measured by examining results both qualitatively and quantitatively. As the death reflection manipulation is relatively new, there is need for a more in-depth exploration of how participants respond in order to build off Cozzolino's work. Qualitative document analysis (QDA) will be used to analyze written responses to open-ended questions to evaluate the extent to which they contain the elements of near death experiences proposed by Ring and Elsaesser Valarino (1998). QDA will also be used to explore the types of themes that emerge from the group experiencing the manipulation. Given the size of the participant sample, it is hoped that a deeper and broader understanding will be gained of how participants might respond to the written response portion of the manipulation. Based on past significant results by Cozzolino et al. (2004, 2006) and the work done by Elsaesser and Valarino (1998) it is expected that through participant responses, qualitative document analysis may reveal themes that suggest participants: (1) were engaged in the study and treated the death scenario as if it were a real event; (2) were able to reflect deeply on their own lives; and (3) were able to take the perspective of others, considering how they would react if the participant did in fact experience the scenario. If themes do support the existence of these three dimensions then they will provide evidence that the manipulation was able to cause participants to engage and reflect as intended in the manipulation design. Aside from supporting engagement the qualitative portion will provide an exploratory examination of how a large group of participants responds to the stimulus. It is predicted that the experimental

group responses will yield themes which align with near-death experience research as well as

possible other themes which may help provide new information about the effectiveness and

outcomes of the manipulation. This exploratory portion of the qualitative analysis will be

framed as a research question, as it is unclear what results may emerge as responses are

examined.

The quantitative component of the study aims to test the outcomes of the death

reflection condition compared to a control group as well as testing for effects over time.

Experimental versus control condition comparisons will consist of four measures, specifically

the 30-item Aspirations Index which examines extrinsic and intrinsic value orientation (Kasser &

Ryan, 1996), the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006), Self-

Report Altruism Scale (Rushton, Chrisjohn, & Fekken, 1981), and the Materialism Scale (Richins,

& Dawson, 1992). The 30-item Aspirations Index asks respondents to rate the importance they

place on 30 future aspirations. These aspirations are separated into intrinsic values (e.g.,

intimacy, personal growth, community) and extrinsic values (e.g., fame, money, beauty). This

instrument was selected as the kind of values one reports, discussed previously, seem to be

influenced by existential awareness (e.g., near-death experiences). The Meaning in Life

Questionnaire assesses two dimensions of meaning in life through 10 questions which are rated

on a 7-point scale. The two dimensions are 'presence of meaning' and 'search for meaning' and

relate to how meaningful respondents feel their lives are or how engaged they are in searching

for more meaning, respectively. This scale was also selected due to findings in near-death

experience literature as well as philosophy discussed earlier. Based on these areas it would be

expected that a person who has really accepted the value of life would want to be living

meaningfully, and intentionally seek that out or be aware of the meaning they feel already. The Self-Report Altruism Scale is a 20-item measure which respondents use to rate the frequency with which they have engaged in various altruistic behaviors. Similar to the aspiration scale in some way, based on the literature review it would be expected that one would be more likely to want to help others and less self focused so this instrument was selected. Finally, the Materialism Scale assesses materialism on three dimensions: success, centrality, and happiness. Consistent with the same general trend of the other scales, this was selected as it was anticipated to be an area influenced by the manipulation. Again based on literature reviewed thus far it would be expected that material things would seem less important and more trivial for those who really experience a deeper level of existential awareness.

It is predicted that participants in the experimental group will show more intrinsic value orientation than will the control group as measured by the Aspirations Index. It also is expected that the experimental group will show increased presence and search for meaning in life, increased sense of altruism, and a decreased importance placed on material goods, as these areas often are associated with the changes found in near-death experiences and posttraumatic growth.

Beyond administering the manipulation online and using quantitative measures to verify death reflection intervention effectiveness, the present study also will collect follow-up data to provide a better understanding of the effects of this manipulation over time. This will be a unique contribution to the literature regarding this manipulation. As this area is so new, there is no current evidence to predict what might be found at a four week follow-up, although as mentioned previously, those experiencing near-death experiences frequently report feeling like

they are forever changed. This study will be the first to measure these effects a month following the administration of the death reflection manipulation. With regard to counseling, it would be most helpful if changes made through awareness can be sustained long after the intervention or even the course of therapeutic treatment. However, given the lack of research in this area duration will be examined through the lens of a research question as to whether post-intervention gains on outcome variables will be maintained at a four-week follow-up.

Moderator Variables

Aside from the qualitative and quantitative dependent variables, and given the large sample size, the present study also will examine the possibility that particular individual differences characteristics may make existential awareness or death reflection more likely to have an impact on a person. The following potential moderators will be examined in the present study: personality (five factors), experiential avoidance, spirituality, and self-esteem. Although these factors by no means are an exhaustive list of all potential moderators, they will provide a good basis starting point for examining the question of whether individual differences characteristics affect the efficacy of the death reflection manipulation.

Personality was selected for investigation as a possible moderator variable because personality factors such as narcissism have been found to moderate mortality salience effects as well as extraversion which has been found to have a relation with posttraumatic growth (Burke, Martens & Faucher, 2010; Tedeschi & Calhoun, 1996). Based on these results, it is predicted that the above personality factors may have a moderating effect on the death reflection manipulation. The present study will investigate the five factor model of assessing personality which consists of: extraversion, agreeableness, conscientiousness, neuroticism and

openness. The five factor model of personality contains five broad dimensions which were

discovered through factor analysis of a variety of personality measures to get at the core

factors (Costa & McCrae, 1992). It is unclear if and how all of these personality traits may

interact with the death reflection manipulation, but there is some evidence to suggest that

some moderation effects will be found. Extraversion has been shown to have a modest relation

to reported posttraumatic growth, which may be related to finding social support when dealing

with difficult situations (Tedeschi & Calhoun, 1996). On the other hand, higher levels of

introversion are by definition associated with a person being more interested in the inner world

of thoughts and ideas, rather than being directed outwards to others which could lead to a

thought-and imagine-based manipulation like death reflection to have more impact.

Neuroticism will be examined as it is associated with the degree to which people are able to

tolerate stress and discomfort. As evidenced throughout this paper, existential awareness is

often uncomfortable, yet is proposed as having positive outcomes for those who are willing to

use that awareness to live more meaningfully. Given this, individuals scoring high on

neuroticism may feel stress more easily or acutely which could lead them to avoid pushing

through the discomfort that may in turn lead to increased awareness and the associated

positive outcomes. Similarly, openness may relate to the willingness of participants to explore

new ideas and express emotions that arise from their experience, making them potentially

more likely to find the death reflection manipulation impactful. Agreeableness may also relate

to participants having a stronger reaction to the manipulation as there is some connection

between compassion toward others and the altruistic effects often seen. Conscientiousness

may have the opposite effect, as emphasis on planning structure and achievement may act as a

barrier to accepting the lack of ultimate control that is central to the death reflection

manipulation. These traits will be measured by using the Ten-Item Personality Inventory, which

is a brief five factor model of personality shown to have good scale score validity and reliability

(Gosling, Rentfrow, & Swann, 2003; Muck, Hell, & Gosling, 2007).

Experiential avoidance, measured by the Acceptance and Action Questionnaire (AAQ- II)

refers to the attempt or desire to suppress or push away unwanted or uncomfortable feelings,

thoughts and emotions (Bond, et al., 2011). This construct is thought to be associated with how

willing people are to examine difficult situations rather than just avoid them, and has been

found to moderate the changes experienced in posttraumatic growth (i.e. high levels of

experiential avoidance result in less reflection and growth) (Kashdan & Kane, 2010). For these

reasons, experiential avoidance stands out as another likely area that may moderate the effect

of the manipulation in the present study. It is predicted that participants with lower levels of

experiential avoidance will experience a strong manipulation effect in the experimental

condition.

Belief in religion, as mentioned previously, is a type of worldview which has been found

to decrease following near-death experiences and the death reflection manipulation (Cozzolino

et. al., 2004; Ring, 1984). On the other hand, increased spirituality has been found for those

experiencing near death experiences, making it another possible factor for moderation in the

present study (Bonenfant, 2004; Groth-Marnat & Summers, 1998; Skeikh, Ramaswami, &

Sheikh 2007). For the present study, spirituality will be assessed using the Intrinsic Spirituality

Scale, which was developed to measure spirituality for theistic and non-theistic populations

(Hodge, 2003). Scale items focus on the use, development and importance of one's spirituality

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as they make decisions and go about their lives. The scale was created to improve on scales that used terminology that limited their validity with non-theistic populations and focuses on a person's own spiritual beliefs without referencing any specific religion or belief system.

Because self-esteem has been examined in some mortality salience studies, it also seems to be a likely candidate for how participants respond to the death reflection manipulation, as greater self-esteem may buffer against mortality threats (Routledge, Ostafin, Juhl, Sedikides, Cathey, & Liao, 2010). In this way high self-esteem makes the manipulation less threatening and therefore not likely to resonate as deeply. However, increased self-worth also has been measured as an outcome in near-death experience studies, which provides further evidence that self-esteem may serve as a characteristic that moderates the death reflection manipulation (Groth-Marnat & Summers, 1998). Given somewhat conflicting findings this area is better defined in the terms of an exploratory research question as opposed to a directional hypothesis.

The changes undergone in near death experiences and posttraumatic growth are quite remarkable, and often highlight some of the most significant changes that those experiencing them report in their lives overall. A better understanding of what causes this to occur will pave the way for future creation and implementation of existential interventions that have great positive potential to help people live more meaningful, compassionate lives. No study to date has examined the moderating variables that may lead some individuals to respond differently to the death reflection manipulation, although it has been proposed that reactions may be linked to the level of abstractness with which a person might process death awareness (Cozzolino, 2006). Due to variability of responses in previous studies it is hypothesized that

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individual differences listed above will have a moderating effect on the death reflection

manipulation. Specifically, it is expected that higher levels of openness, higher levels of intrinsic

spirituality, lower levels of neuroticism, and lower levels of experiential avoidance will be

associated with a stronger manipulation impact. In addition, the present study will examine

extraversion, agreeableness, conscientiousness, and self-esteem for other possible moderation

effects; because extant literature does not suggest a directional hypothesis for these variables,

the direction of the possible moderating effect for these variables will be examined as an open

research question.

Hypotheses and Research Questions

The present study consists of a number of hypotheses and research questions which fall

into three primary areas:

1. Was the manipulation successful and did it function as expected?

RQ1: Will analysis of written responses in the experimental group contain elements

which suggest participants treated the scenario as if it were real?

If the scenario is treated as being real it would be expected that participants would

have an emotional reaction to the scenario and report thoughts and feelings they actually felt,

rather than guessing at what a person in the situation might feel.

RQ2: Will analysis of written responses in the experimental group contain elements

which suggest participants reflected on their own lives?

If this is occurring responses which contain personal examples of their own lives, things

they wish they had accomplished, or past regrets might be expected. Again, if the material is

treated as story or a character and not personal it would indicate participants did not reflect on their own lives.

RQ3: Will analysis of written responses in the experimental group contain elements which suggest participants were able to take the perspective of others?

Evidence for this occurring would likely include responses that reference family members and how they would react to the hypothetical death of the participant. Responses that indicate they do not know how others would react, or just focus on their own reactions would suggest they were not able to take the perspective of others.

RQ4: What themes will emerge from an in-depth analysis of written responses in the experimental group?

Aside from gauging how the manipulation performed from a qualitative perspective an analysis of the themes which emerge from responses will provide insight into the varying ways in which a large group of participants responds to the manipulation. It would be expected that themes may focus around relationships and meaningful experiences, but this is purely speculation as it is not clear what analysis may yield.

H1: It is predicted that that participants in the experimental group will show significantly higher scores on intrinsic value orientation and lower scores on extrinsic value orientation as compared to the control group on the 30-item Aspiration Index.

If the manipulation is successful participants will be focusing on what is meaningful to them and thinking of life through that personal lens. Intrinsic values should therefore become more central with less emphasis put on extrinsic values like fame and wealth.

H2: It is expected that the experimental group will show significantly higher scores on search and presence of meaning compared to the control condition on the Meaning in Life Questionnaire.

Given the importance of meaning and fulfillment for those experiencing a greater level of existential awareness the experimental group will be more likely to reflect on what is meaningful in their own lives as well as seeking more meaningful relationships and experiences.

H3: It is predicted that participants in the experimental group will have significantly higher scores on the Self-Report Altruism Scale as compared to participants in the control condition.

As research on deeper levels of existential awareness supports decreased selfishness and increased desire and willingness to think about and care about others, it is expected that those receiving the manipulation will have a similar effect.

H4: It is predicted that participants in the experimental group will show significantly lower scores on the Materialism Scale compared to the control group.

It is expected that deeper levels of existential awareness will cause participants to be less concerned with material goods and more concerned with other aspects of life that in general are rated as more meaningful and fulfilling.

2. What individual characteristics might have a moderating effect on the manipulation?

H5a: It is predicted that participants in the experimental condition who have higher levels of openness, as measured by the Ten-Item Personality Inventory, will be associated with a stronger manipulation impact.

H5b: It is predicted that participants in the experimental condition who have higher scores on the Intrinsic Spirituality Scale will be associated with a stronger manipulation impact.

H5c: It is predicted that participants in the experimental condition who have lower levels of neuroticism, as measure by the Ten-Item Personality Inventory, will be associated with a stronger manipulation impact.

H5d: It is predicted that participants in the experimental condition who have lower levels of experiential avoidance, as measured by the Acceptance and Action Questionnaire, will be associated with a stronger manipulation impact.

As has been explored above, openness to new experiences would likely lead to a person being more open to the manipulation effect. Similarly, as intrinsic spirituality has been associated with those experiencing near death experiences it is predicted that participants who report higher levels on this scale will also have a larger manipulation effect. Higher levels of neuroticism, in some ways similar to the experiential avoidance, is associated with less tolerance for stress or discomfort. Given this, it is expected that participants with lower measured neuroticism and lower levels of experiential avoidance would be more able and willing to tolerate and benefit from the discomfort of the manipulation.

RQ5 - Is there a moderating effect for extraversion, agreeableness, conscientiousness, as measured by the Ten-Item Personality Inventory, and self-esteem, as measured by the Rosenberg Self-Esteem Scale, on the effect of the manipulation on outcomes?

Given the lack of evidence, or somewhat conflicting evidence for how these variables may moderate the manipulation effect, these will be tested in the form of a research question without specific hypotheses or direction of impact.

3. Will manipulation effects persist over a four week period?

RQ6 - If differences are found between groups, will those differences continue to exist or change over a period of four weeks, as measure by the same four dependent variables used following the experiment (Aspirations, Meaning in life, Altruism, and Materialism)?

This final question comes as an attempt to look at potential effects over time for participants who have experienced the death reflection manipulation. As there hasn't been any research to look at duration this is being posed as a research question that is exploratory in nature. Ideally if positive outcomes emerged from the manipulation effect they would also persist overtime and not disappear shortly after being measured at post-manipulation.

METHOD

Participants

Data were collected from 432 undergraduate students at Colorado State University. Participants were selected through undergraduate psychology courses that give credit for research participation. Of the 432 respondents, 70% identified as female (n = 304), 30% identified as male (n = 128), with an overall mean age of 18.7 years and standard deviation of 1.89. The reported ethnicity was as follows: 84.5% White/European (n = 365), 7.4% Latino(a)/Hispanic (n = 32), 2.8% Black/African (n = 12), 1.6% Asian/Pacific Islander (n = 7), 1.2% American Indian/Native American (n = 5) and 2.5% Other/Omitted (n = 11).

Of the 432 participants, 344 completed the one month follow-up study. Among those that completed the follow-up 71% identified as female (n = 246), 29% identified as male (n = 98), with an overall mean age of 18.7 years and standard deviation of 1.90. The reported ethnicity of those completing the follow up were as follows: 84.0% White/European(n = 289), 8.7% Latino(a)/Hispanic (n = 30), 1.7% Black/African (n = 6), 1.7% Asian/Pacific Islander (n = 6), 1.2% American Indian/Native American (n = 4) and 2.6% Other/Omitted (n = 9). Chi squared and t-test revealed no significant differences between participants that completed the follow-up versus those who didn't, regarding age, gender, ethnicity, personality, experiential avoidance, intrinsic spirituality, and self-esteem. However, and perhaps not surprisingly the personality dimension of conscientiousness had the strongest effect when comparing groups, with participants rating lower on conscientiousness being more likely to not complete the follow-up portion of the study (Cohen's *d* = .27, *p* = 0.029). As multiple t-tests were run this

value is worth mentioning, but it is difficult to draw too much from it since it is not significant after adjusting for family-wise error using Bonferroni's correction for the multiple tests run.

Instruments

Moderator Variables

Ten-Item Personality Inventory. The Ten-item personality inventory (Gosling, Rentfrow, & Swann, 2003) consists of ten items, two for each personality dimension. The measure uses a 7-point scale consisting of *disagree strongly, disagree moderately, disagree a little, neither agree nor disagree, agree a little, agree moderately, agree strongly*. Sample items include: " Extraverted, enthusiastic," and " Sympathetic, warm." Test-retest correlations at a two-week time interval for the TIPI were high (mean =.72) as well as convergent validity =.77 with the Big-Five instrument (BFI) (Gosling, Rentfrow, & Swann, 2003,). The mean alpha coefficient for scores on this measure in the present study was α = .71.

Acceptance and Action Questionnaire (AAQ- II). This questionnaire consists of 10 items and uses a 7-point scale consisting of *never true, very seldom true, seldom true, sometimes true, frequently true, almost always true, always true* (Bond, et al., 2011). Sample items include: "I'm afraid of my feelings," and "I am in control of my life." Test convergent validity is very strong with the AAQ-I was (r = .97) and test-retest reliability was .79 to .81 for twelve months and three months respectively (Bond, et al., 2011). The alpha coefficient for scores on this measure in the present study was α = .88.

Intrinsic Spirituality Scale. The Intrinsic Spirituality scale is a 6-item measure (Hodge, 2003). Responses are given using a 10-point scale consisting of anchors such as: *Not part of my life,* and *Is absolutely the most important factor*). Sample items include: "Spirituality is the

master motive of my life, directing every other aspect of my life," and "In terms of the questions I have about life, my spirituality answers..." Validity was supported through high correlation with the previous supported Measure of Intrinsic Religion (r = .911) and reliability was measured at a mean alpha coefficient of .80 (Hodge, 2003). The alpha coefficient for scores on this measure in the present study was α = .95.

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (Rosenberg, 1965,1989) is a 10-item measure. Respondents use a 4-point scale consisting of *strongly agree, agree, disagree, strongly disagree* to respond to items. Sample items include: "I feel that I have a number of good qualities" and " I take a positive attitude toward myself." Internal consistency ranged from .77 to .88 and test-retest reliability ranging from .82 to .85 over a 4-week interval (Rosenberg, 1965,1989). The alpha coefficient for scores on this measure in the present study was α = .92.

Dependent Variables

The 30-item Aspirations Index. The Aspiration Index (Kasser & Ryan, 1996) uses 30 items to measure extrinsic (e.g. material success, fame, image) and intrinsic aspirations (e.g. self-acceptance, relationships, community). Responses are given using a 5-point scale consisting of *not at all,* to *very* in which participants indicate how much various statements represent their feelings. Sample items include: "I will choose what I do, instead of being pushed along by life," and "My name will be known by many people." Validity and reliability have been supported by multiple studies and show strong alpha coefficients (intrinsic = .86,extrinsic = .94) as well as a significant negative correlation between both factors (r = -.67, *p* < .001; V*ansteenkiste*, Duriez, Simons, & Soenens, 2006). In addition the extrinsic aspiration sub-scale has been shown to

have significant positive correlations between other materialism measures such as Richins and

Dawson's (1992) materialism scale and Ger and Belk's (1996) measure of materialism (Kasser &

Ahuvia, 2002). The alpha coefficient for this measure in the present study for intrinsic and

extrinsic aspirations were α = .93 and .89, respectively.

Meaning in Life Questionnaire. The Meaning in Life Questionnaire (Steger et al., 2006)

consists of 10 items and uses a 7-point scale ranging from *absolutely untrue* to *absolutely true*

for respondents to rate how true various statements are for themselves. Sample items include:

"My life has a clear sense of purpose" and "I am always searching for something that makes my

life feel significant." Validity and reliability have been supported through multiple studies and

shows high correlations to other similar measures such as the Purpose in Life Test and the Life

Regard Index (.61-.66; Steger et al., 2006). The alpha coefficient for scores on this measure in

the present study for presence of and search for meaning were α = .87 and .89, respectively.

Self-Report Altruism Scale. The Self-Report Altruism Scale (Rushton et al., 1981) is a 20-

item measure which uses a 5-point scale ranging from *never* to *very often* to rate the frequency

which a respondent has engaged in various activities. Example items include: "I have donated

goods or clothes to a charity," and "I have delayed an elevator and held the door open for a

stranger." Internal consistency was reported at an alpha level of .89 and the scale was

significantly correlated with other measures such as the Social Responsibility Scale and the

Emotional Empathy Scale. In addition peer ratings of a respondents level of altruism were

compared to the respondent score which further supported the scale's validity $r(86) = .35$ ($p <$

0.001) (Rushton et al., 1981). The alpha coefficient for scores on this measure in the present

study was α = .78.

Materialism Scale. The Materialism Scale (Richins & Dawson, 1992) consists of 18 items and measures the degree of importance one places on material goods. The scale uses a 5-point scale ranging from *strongly disagree* to *strongly agree* for respondents to rate how they would describe their feelings about various statements. Example items include: "I like to own things that impress people," and "I put less emphasis on material things than most people I know." Internal consistency ranged from .82 to .87 and validity was supported through significant correlations with other measures such as self-centeredness and envy (Richins & Dawson, 1992). The alpha coefficient for scores on this measure in the present study was $\alpha = .84$.

Procedure

Students who wished to participate were e-mailed a secure online link which they used to access and complete the experiment. The first question on the survey pertained to informed consent to which students had to agree before continuing (see Appendix A). This online agreement ensured that participants had a general understanding of the nature of the survey, and that it will involve reflection on their lives and the positive and negative things that might arise when doing so. Given the potential for some discomfort participants might feel as they reflected on life and death it is important to note that this study was approved by the Colorado State University IRB.

Following informed consent, participants were prompted to provide basic demographic information and respond to a set of scales to assess the above mentioned five factors of personality, experiential avoidance, spirituality and self-esteem. After this information was collected students were then randomly assigned to the control condition or experimental

condition and presented with either the neutral or death reflection manipulation used and validated by Cozzolino et al. (2004).

Participants in the control condition were presented with a scenario in which they imagine themselves waking up in a city apartment to the sound of the clock radio and the pleasant smell of coffee. The following control scenario has been edited somewhat from the original in an attempt to make it a more neutral condition by not referencing relationships which could potentially prime participants in a certain way:

Imagine that you are visiting a new city and staying in a time-share apartment on the 20th floor of an old, downtown apartment building. You are awakened from a deep sleep by the sound of a clock radio and the pleasant smell of coffee. You slowly make your way out of bed and into a comfortable robe. You enter the kitchen and prepare your favorite freshly cooked breakfast. After a pleasant breakfast, you get ready to head out into the city to do some sightseeing. Your go to all the city's famous locations, including stores and museums. You spend much of the day walking and as the day goes by, you start to tire. Eventually, you find your way back to your apartment where you work on a fancy dinner. After finishing the meal, you settle in to watch a movie that you have never seen before. The movie is very funny and you enjoy some time afterwards recalling your favorite moments. Finally, you head off to bed. As you lie in bed contemplating the day, you realize how special your visit is and realize you have another great day to look forward to tomorrow.

After reading and imagining the control condition scenario, participants were asked to answer the following questions:

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1. Please describe in detail the thoughts and emotions you felt while imagining the scenario.

2. Have you ever experienced an event like the one described in the scenario?

3. Imagining an event like the one described did happen to you, reflect on and describe the life you led up to that point.

4. Again imagining this event did happen to you, describe the thoughts and emotions of a friend or family member who you told about your day.

Participants in the experimental condition were presented with a scenario in which they imagined themselves waking up to smoke in their friend's apartment, and having no escape route:

Imagine that you are visiting a friend who lives on the 20th floor of an old, downtown apartment building. It's the middle of the night when you are suddenly awakened from a deep sleep by the sound of screams and the choking smell of smoke. You reach over to the nightstand and turn on the light. You are shocked to find the room filling fast with thick clouds of smoke. You run to the door and reach for the handle. You pull back in pain as the intense heat of the knob scalds you violently. Grabbing a blanket off the bed and using it as protection, you manage to turn the handle and open the door. Almost immediately, a huge wave of flame and smoke roars into the room, knocking you back and literally off your feet. There is no way to leave the room. It is getting very hard to breathe and the heat from the flames is almost unbearable. Panicked, you scramble to the only window in the room and try to open it. As you struggle, you realize the old window is virtually painted shut around all the edges. It doesn't budge. Your eyes are

barely open now, filled with tears from the smoke. You try calling out for help but the air

to form the words is not there. You drop to the floor hoping to escape the rising smoke,

but it is too late. The room is filled top to bottom with thick fumes and nearly entirely in

flames. With your heart pounding, it suddenly hits you, as time seems to stand still, that

you are literally moments away from dying. The inevitable unknown that was always

waiting for you has finally arrived. Out of breath and weak, you shut your eyes and wait

for the end (Cozzolino, 2004).

After reading the experimental condition scenario, participants were asked to answer the

following questions:

1. Please describe in detail the thoughts and emotions you felt while imagining the

scenario.

2. If you did experience this event, how do you think you would handle the final

moments?

3. Again imagining it did happen to you, describe the life you led up to that point.

4. How do you feel your family would react if it did happen to you?

Following these scenarios and writing prompts all participants were given the

dependent variable measures. After this, participants read a debriefing statement online and

were reminded that there was a one month follow-up component of the study that they would

be asked to complete.

Four weeks after the initial intervention participants were emailed a link to the follow-

up survey. As mentioned previously 344 of 432 participants (80%) completed the follow-up.

The follow-up asked participates to again complete the measures used at post-manipulation

(The 30-item Aspirations Index, the Meaning in Life Questionnaire, the Self-Report Altruism

Scale, and the Materialism Scale). After this, they were presented with a more thorough

debriefing statement about the purpose of the study.

Analysis

Results were analyzed using both qualitative and quantitative approaches to gain a

deeper and broader understanding of the responses and data collected during the study.

Qualitative Document Analysis (QDA) to examine the written responses to the four questions

following the manipulation in the experimental group. QDA was selected due to its open,

exploratory nature which makes it ideal for examining themes in data or for uncovering new

information (Altheide, 1978). The four qualitative questions serve as part of the manipulation,

as they stimulate reflection on the passage that participants read as well as providing data on

the response participants had in the experimental condition to the death reflection

manipulation. Since the manipulation was based on components of near death experiences, the

qualitative questions were designed to help participants process the scenario deeply, reflect on

their own lives and take the perspective of others (Cozzolino et al., 2004; Ring & Elsaesser

Valarino, 1998). Aside from the role these open-ended questions played in the manipulation,

the experimental responses are important as they provide valuable data regarding if and how

participants engaged with the material in ways that quantitative measures may not detect.

One trained undergraduate research assistant and the present author examined the opened

ended responses to each of the questions for themes that capture the general essence of the

responses. Responses were initially examined and coded separately and then shared and

discussed together until consensus was reached. Initial codes were then grouped by similarities

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and then given a theme name that attempted to capture the general essence of the grouping of labels.

These themes which emerged from qualitative analysis provided a way to determine the degree to which participants in the experimental condition did process the scenario deeply, reflect on their lives and take the perspective of others. In addition to providing support for the manipulation performing as expected the themes which emerged provided a more in-depth means of examining how participants reacted to the death reflection manipulation. Although it is difficult to draw too many conclusions from these themes, there are themes we might expect to emerge if the manipulation resonated at a deep enough level, but as the manipulation is not the same as a near death experience, this area is approached in an exploratory manner. These responses are also compared to the findings of past research on death reflection, near-death experiences and posttraumatic growth. Responses also provide another means of establishing how invested participants were in the experiment and if they allowed themselves to process the scenario deeply or remained distant or removed from it. As the death reflection aims to have a deep impact on participants, it is important to examine how effective the intervention seemed to be in terms of the emotional engagement of participants. It is possible that some respondents would reject the scenario altogether, or treat is as a story about another person, or instead feel a bit anxious about it and then retract or defend from it; much like how one might respond to the mortality manipulations in Terror Management Theory research. For the death reflection to be effective, it is vital for the awareness and engagement to be at a deeper level, more similar to an actual event rather than someone else's story. As qualitative responses were analyzed with level of engagement in mind, there was a small group of responses that

were rated as not being engaged in the experimental group who received the manipulation. These responses were coded into the theme of *Deny Death* in the first and second qualitative question. This group of unengaged participants was then compared to the rest of the experimental condition participants on the dependent variables to examine differences using ANOVAS to see if qualitatively rated level of engagement had a quantitative impact on the manipulation outcomes (see Table 7). It was hypothesized that, given the importance of depth processing there would be differences between these sub-groups in the same direction as would be expected in the original hypothesis of experimental versus control group outcomes.

Building on the qualitative analysis, quantitative measures were used to add to the initial results found by Cozzolino et al. (2004) who used content analysis and a greed experiment to suggest the effectiveness of the death reflection manipulation. ANOVAS were used to compare effects of the manipulation between groups as there were four dependent variables, some with subscales for a total of six total variables. Box plots and QQ plots were examined and showed that errors appeared to be independent and normally distributed and that each group had equal variance. Given this the assumptions of equal variance, error independence and normal distribution of data was supported. Chronbach's alphas were also calculated for scores on each measure to ensure internal consistency. Results suggested the measures performed reliably (See Table 5). Outliers were also removed from each measure to test whether they impacted the results. Outliers were identified as data points that were above or below 1.5 times the interquartile range on each outcome for each condition (Hoaglin, Mosteller & Tukey, 1983). The number of outliers ranged from 2 to 15 depending on condition as can be seen in Table 6 by looking at degrees of freedom. Given the differences we found

within the experimental group, based on qualitative level of engagement, it was decided to

compared the control and experimental group again, this time controlling for the sub-group of

participants who didn't appear to be engaged in the manipulation. An ANOVA was again used

to make this comparison between groups to test if the less engaged participants in the

experimental condition had a significant impact on the overall scores (see Table 8). In addition,

ANOVAS were used to make comparisons of scores on the same measures, and in the same way

as listed above at the one-month interval to analyze potential changes between groups over

time. Because participants filled out the same set of dependent variable measures, the process

was identical to what was conducted during the initial comparison of groups. Analysis of

potential changes on these measures from post-manipulation to follow-up were used to

provide some insight into the death reflection's impact over a one-month interval.

Finally, the following factors were tested as potential moderators to the effects of the

manipulation on outcomes: personality (Extraversion, Agreeableness, Conscientiousness,

Emotional Stability, Openness), experiential avoidance, intrinsic spirituality, and self-esteem. In

a series of regression analyses, the interaction between condition and moderator variables was

examined. Data were not centered as centering has no impact on the significance of the

interaction and is only useful in interpreting lower order effects. As those effects were already

examined in the ANOVAs it did not make sense to adjust the variables. Because there were 6

follow-up measure categories and 8 moderator factors, a total for 48 moderation comparisons

were made utilizing regression analyses.

RESULTS

Qualitative Analysis

The qualitative portion of this study served as part of the manipulation in the experimental group, but also allows for some understanding of how participants related to the material. The outcomes of the experimental condition responses are organized by the broad themes which were created through individual coding and peer examination. Each broad theme was established by combining and organizing similar labels which emerged from the original data in a response-by-response fashion. The broad themes and labels are listed below in order of how frequently they were represented in the data. Because the purpose of the qualitative portion of this study is to explore the ways participants interacted with the manipulation, there was a focus on themes within the data, making precise numerical representation of responses unnecessary for this process using QDA (Altheide et al, 2008). Within each theme's section, the peer-examined and agreed-upon labels will be presented, along with selected quotations from participant responses, to help elucidate how the labels and the themes emerged. The following sections correspond, in order, to the four open-ended response questions used (see methods section). These sections also explore and address research questions one through four.

Question 1: Thoughts and emotions while imagining the scenario.

The primary object of the first question, "Please describe in detail the thoughts and emotions you felt while imagining the scenario" was to help participants experience the scenario they read more deeply and corresponds with the research questions labeled RQ1 and RQ4. Responses to this question varied from a few sentences to a detailed paragraph. Some

responses contained multiple ideas which were coded into multiple labels while others were

more specific to just one label. From the initial 14 labels, five primary themes emerged. The

themes, in order of frequency in the data, are as follows: *Negative Emotion, Positive*

Relationships, Deny Death, Value Life and *Accept Death* (see Table 1).

　　Negative Emotion. As might be expected, the most frequent response regarding

thoughts and emotions was one that referred to having a range of powerful negative emotions.

Of these emotions fear and helplessness were very prevalent. For example, Participant 56

responded: "While imaging the scenario, a rush of being terrified and panic took over my body.

Also being helpless or not being able to leave that fire." Similarly, Participant 380 stated: "I felt

helpless and scared. I felt like I couldn't breathe as I read it. I felt in a state of panic." A smaller

portion of participants cited feeling upset and disturbed by reading and imagining the passage.

Participant 90 said: "I feel emotionally upset. The thought of dying does not sit well with me,

and thinking about this incident puts me in a depression state." Finally, some participants

responded with feelings of anger. Participant 362 answered: " A little upset, but mostly angry

and desperate and dedicated to making it out. I felt angry at myself in that scenario, the self

that gave up towards the end, I was sort of yelling at it to get up. I also felt a bit panicky but

focused on finding a way out."

　　Positive Relationships. This second theme showed that participants reading the death

reflection scenario also cited positive relationships as something that came up for them when

imagining their final moments. These relationships were often focused around friends and

family but also cited a relationship with God as being salient. For example, Participant 47

responded: "As I read I felt extremely sad. I was sad because I didn't know if I would be able to

say I love you to my family again... I was worried was because I wondered what my family would do without me." Additionally, Participant 311 stated: "I felt resignation and a peace at knowing that it was God's decision for me to go... My greatest regret would not being able to say goodbye to my loved ones, but the fact that I realized it was God's will for me to go would give me the strength until my final moments."

Deny Death. A smaller portion of participants responded in a way that seemed to suggest that they didn't really accept the scenario and imagined situation. The majority of these responses were focused on continuing to escape, with a few responses that suggested even more distance from the situation altogether. Examples of these are: Participant 81: "My thoughts during this scenario are that I should have never opened the door because if the door knob was that hot that meant there were enormous flames outside my door. If the window didn't open I should have kicked it out and done everything I could to escape the room." Participant 295 wrote: "I pictured it the whole time as a movie. When the girl ran to the door to try and open it, not thinking out of panic she touched the door handle, and then opened it with a blanket right after. My thoughts were that she wasn't thinking about how fire moves and spreads. She was thinking out of fear for her life and I would of too. "

Value Life. Some participant responses grouped to form a theme of valuing life in a very direct way. Responses and the labels constructed from those responses varied from appreciating the past, thinking of the future, regrets, and a sense that each day and each life is valuable. Examples of these labels are: Participant 121: "Going through this scenario it made me feel very anxious. It made me think back to my life and what I could have done better, the things I still wanted to do and the things I wanted to change." Participant 176: "I felt intense

panic, and greatly saddened that I would not get to live any longer. I felt there was so much I could do that I haven't done yet in life, and that also greatly saddens me." And, Participant 52: "At this moment in time I would feel like I would have many regrets especially if I was fighting with a family member or have not forgiven someone that I liked or didn't like. I felt like this is not how I want to die and this made me realize I need to live everyday like it is my last."

Accept Death. This final theme was also present among responses to the first question. Responses in this group focused on treating the situation as if it were real and rather than trying to escape, they instead accepted the scenario. Some examples of responses coded into this theme are: Participant 10: "At first I felt panicked because there was nothing I could do to save myself in the situation, feeling completely out of control. But as the smoke became heavier, I began to accept I was dying and became calm." Furthermore, Participant 244 wrote: "I felt as though I had to accept what has clearly become my fate. It's a disturbing feeling being close to death, but in that scenario, I felt I had no choice but to let go."

Given the responses, there is strong support for RQ1 which was "Will analysis of written responses in the experimental group contain elements which suggest participants treated the scenario as if it were real?" This is explored in more depth in the discussion section, but aside from the theme, *Deny Death*, responses suggest that participants were engaged and imagined the scenario as if it were an real event. The themes which emerged and which address RQ4 are presented in the table below and explored in more detail in the discussion section.

Table 1. *Thoughts and Emotions while imagining the scenario.*

_____

Theme	**Label**
Negative Emotion	Terrified/Fear
	Hopeless/Helpless
	Upset/Disturbed
	Angry
Positive Relationships	Family/Friends
	God/Religion
Deny Death	Escape/Save self
	Not my story
Value Life	Appreciate past
	Lost future/Potential
	Regrets
	Each day is important
	Only have one life
Accept Death	Try to be calm in the end
	Curious, what's next?

_____

Question 2: How final moments would be handled.

Similar to question 1, the purpose of the question "If you did experience this event, how do you think you would handle the final moments?" was also to prompt participants to think of the death reflection scenario as being more like an actual event and corresponds with research questions labeled RQ1 and RQ4. Responses again varied in length and detail and were coded in the same manner with five themes emerging from nine labels. Not surprisingly, themes closely matched the responses from question one, although they had a different configuration due to responses focusing more on relationships and valuing life when participants were not asked to

focus on thoughts and feelings specifically. The themes, in order of frequency in the data, are as follows: *Positive Relationships, Value Life, Negative Emotion, Deny Death, and Accept Death* (see Table 2).

Positive Relationships. The most common responses to the prompt of how one would handle her or his final moments were focused around relationships. Within this theme family and friends were most often cited, followed by some mention of God or reference to praying. An example coded under the first label, by Participant 24, was "I would think about all the people I love and hope that I had made it clear to them that they meant the world to me." The second label was composed of responses that referenced God such as Participant 29: "I would end my final moments talking to my creator. I would be sad to be ending my time on earth with my family and friends but overjoyed to go to heaven to meet my god face to face."

Value Life. This second theme was composed of responses that suggested participants were thinking of the importance of life in various ways. Responses often referred to reflecting on the past or future and also included responses of regret. Some statements which were coded into this theme are as follows: Participant 47 wrote "In my final moments I would try my hardest to remember all the good in my life... I would remember the biggest aspects of life; such as, graduating school, getting a degree. I would remember I love life and try to remind myself I did everything in life that I could." Participant 262 responded "Everything that I haven't gotten to do in my life and I would think of all the people that I love. I would also think about things I wish I had done in my past." And finally participant 376 stated "... I would be sad knowing that I didn't get the chance to live the life that I had always dreamed of. I also didn't

get to tell my family and those that are important to me that I love them and appreciate

everything they have ever done for me throughout my life."

Negative Emotion.   Despite this second question being a more general prompt of how

one might handle her or his final moments, negative emotions were understandably still

commonly mentioned in the responses. Examples also closely resembled ones seem in

response to the first question, most commonly citing fear, panic and sadness. A typical answer

coded into this theme from Participant 418's response is "I would not handle them well, I would

scream and cry and lose control. I would probably have a panic attack."

Deny Death. Responses which were coded into this theme were again mainly focused

around escaping and not accepting death, or not accepting the death reflection manipulation as

plausible. An example of escape from Participant 408 is "I would NOT handle it well at all. I'm a

fighter, I want to get what I want all the time, and that is not the way I want to die. I would fight

and find some way to get out of that fire and house, even if that meant jumping." A response

that fit into the label of "Not my Story" by Participant 107 is "For starters, I wouldn't have

woken up in a situation where obviously a fire was present and grabbed the door handle. And I

especially wouldn't have opened the door knowing the fire was right outside since the knob

burnt my hand. I would have tried to get out as well instead of sit on the floor and I would have

put more effort into getting the window open any way I could, including breaking it."

Accept Death. This final theme emerged again through participant responses that

typically included an element of trying to just be calm and peaceful at the end of life and accept

the scenario. Examples of responses that were coded in this them are: Participant 108 "I think I

would accept the fact that there was no way out and become at peace with it. Struggling would

just make everything worse, so keeping calm would be the way to go." Participant 395:

"Accepting, no regrets. Calm and peaceful. It would be ok with me because I know everyone has

to die at some point, and I'd just be grateful I got to have what I did."

Table 2. *How final moments would be handled.*

Theme	Label
Positive Relationships	Think of relationships Pray/God/Religion
Value Life	Reflect on good memories Regret lost life Reflect on Lost Potential
Negative Emotion	Feeling Panic/Fear/Sadness
Deny Death	Escape/Save self Not my story
Accept Death	Try to be calm/Peaceful

Similar to the first question, this second question served as another prompt to help

participants process the scenario more deeply. Given the nature of the themes, results show

more support for RQ1 suggesting participants did treat the scenario is if it were a real event

aside from responses coded into the *Deny Death* theme. The themes which emerged and

which address RQ4 are presented in the above table and explored in more detail in the

discussion section.

Question 3: Describing life led up to the present moment.

This question served as a prompt to help participants reflect on their own lives, and

therefore differs from the first two questions that aimed to make the scenario feel more

salient. Results from this question correspond to the research questions labeled RQ2 and RQ4.

Response labels and themes emerged from analysis of the following question: "Again imagining it did happen to you, describe the life you led up to that point." Four themes emerged through peer discussion of the initial nine labels. Listed in order of prevalence; they are as follows: *Positive Life, Unfinished/Neutral, Positive Relationships, Altruistic* (see Table 3). Three of the four themes can be seen has having some positive aspect, with one being comprised of responses that suggested a mix of positives and negatives as well as regrets. Unlike the previous two questions, no themes emerged that had to do with participants failing to accept the scenario. This difference was not surprising as this question asked participants to reflect on their own lives and is therefore more difficult to reject.

Positive Life. The most commonly cited labels emerging from analysis of responses to this question were related to describing life as having been fulfilling, happy, filled with good experiences and that participants felt blessed. An example coded under the label of being fulfilling and having positive experiences, by Participant 148, was "I have led a life that I do not regret any part of. Even all of the bad situations I have gotten myself into have taught me a valuable lesson and helped form me as I am today. It would also be a life that I have lived to the fullest, taking advantage of any opportunity, whether resulting positively or negatively. It would also be a life that is full of experimental experiences, some that others never have tried or been through." Some responses fell into a label of feeling blessed, such as Participant 174's answer: "I led an extremely happy life with very few struggles. I was surrounded by love and I was blessed in many ways and I would have no complaints about how my life went."

Unfinished/Neutral. This theme emerged from response labels that focused on some sense of being unfulfilled, having regrets, not being fully content, or a specific regret of not taking enough risks. An example of unfulfilled potential by Participant 63 was: "I would feel unsatisfied with my own contributions to the world. I have not yet had the opportunity to give back like I want to. I would feel like I've only taken from others and not yet had the chance to give back to them. I have had an almost fairytale life with amazing family and friends, a nice house, and a cozy middle class neighborhood. I feel like because I have grown up with such privilege, that I should have done more to help others. I hope that I can still make this dream a reality given that I am still alive." Some responses were also coded into the label of having some regrets, such as Participant 141: "I was sad a lot. I had a lot of regret because of missed opportunities. I felt that if I had had more money I would have been able to do better for my children. Not for me, but for them. Yet I have made them so sad from my emotional problems. And I am angry at myself for that." An example of feeling as though life had both ups and downs by Participant 196 is as follows: "I would see all the things that I have accomplished in my life but I would note on how I got to them. I would remind myself that it was a struggle to have achieve what I had, whether it was love, money, or happiness. I would think of the people that help me get there; my mom, my dad, my sister and all the teachers that I had over the year. I would think of the people that tried to bring me down. The people that did not want to see me be successful in life." Finally, some respondents cited the specific regret of not taking risks or engaging in life as much as they wished. Although this is also a form of regret we decided to keep it separate as it offers a unique existential theme related to regret. An example of a responses coded into this theme by Participant 225 was: "My life wouldn't be as eventful as

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most people. Most people I know are exciting and they go out all the time and have these amazing stories to tell but in high school my life was really quiet. Since I was very quiet in high school I didn't have too many friends ... so I was alone for most of my summers and after school. It wasn't until college that I started coming out of my shell and I started making my own stories. Ending it now would be extremely sad to me because I feel as though I was in an exciting part of my life."

Positive Relationships. It was not uncommon for participants to mention positive relationships as they reflected on their lives thus far. Participant 264 stated: "My life has been very happy because of my family and my friends. I would not change a thing about my life. I do not have any regrets."

Altruistic. Finally, some responses to this prompt contained elements of altruism. These responses typically made some reference to hoping or feeling that the participant had made a positive impact on others. And example coded into this theme from Participant 121 was: "Imagining it did happen, I would describe my life as unique and one of a kind. Growing up with my father being terminally ill has made me a stronger person, it has allowed me to grow up faster than the average teenager. My natural instincts kicked in to just be helpful to others. Which is the reason I want to be a social worker. I want to make a difference in this world and I would only hope that if this did happen people would look back and say that I made a difference. "

Responses and themes from responses to this third question show strong support for RQ2, suggesting that participants did reflect on their own lives. The types of themes that

emerged from this question are presented in the Table 3 and address RQ4. These results are

examined in more depth in the discussion section.

Table 3. *Describing life led up to the present moment.*

Theme	Label
Positive Life	Fulfilling/Happy/Proud
	Positive experiences
	Felt Blessed
Unfinished/Neutral	Unfulfilled potential/leaving too soon
	Some regrets
	Ups and downs/Okay life
	Wished I'd taken more risks
Positive Relationships	Good relationships/Loved ones
Altruistic	Feel/Hope I've made a positive impact

Question 4: Reflecting on how one's family would react.

This final question was created to prompt participants to take on the perspective of

others, in this case their family and pertains to the research questions labeled RQ3 and RQ4.

The question reads as follows: "How do you feel your family would react if it did happen to

you?" As has been typical, many responses were coded into multiple categories due to

containing various themes within the same response. The four main themes that emerged from

an initial fifteen peer reviewed labels, listed in order of prevalence are: *Negative Emotion,*

Difficulty coping, Hope Positive for them, and *Unsure/Self Thoughts* (see Table 4)*.*

Negative Emotion. The most common response participants listed when reflecting on

how their family would react to their passing were related to negative emotions. Among these,

most participants listed devastation, trauma and grief as the most likely reactions. However,

some also listed feelings like blame and disappointment which also contributed to this negative

emotion theme. Examples of responses fitting these labels are:

"Devastated/Traumatized/Upset," Participant 2: "My family would be absolutely devastated. I

am very close with my family, and I feel that any event like this would leave a horrible scar on

any family. It would be extremely traumatizing." "Grief," Participant 129: "Heartbroken. Filled

with grief, and questioning why something like this had to happen to our family." "Anger,"

Participant 313: "They would be very upset and it would cause them great pain for many years.

They would be shocked and angry because they would've thought I deserved a more peaceful

way to die." "Guilt/Blame," Participant 92: " My family would react quite poorly if I died. There

would be a lot of sadness, guilt, and blame being spread around." "Disappointment,"

Participant 153: "They would be hurt, and be disappointed that I wasn't able to make it out of

the room. I feel like they might be mad that I didn't try harder to get out, or that I was ignorant

and opened the door, bringing in the flames."

Difficulty coping. Another frequently listed response participants gave while reflecting

on how their family would react focused on family members having a difficult time coping and

accepting the situation. These responses often contained elements of negative emotion as

well, but also specifically mentioned dealing with or accepting the loss which leads to this

theme being unique. The most common answers within this theme mentioned that family

members, or a particular family member, would be changed forever from the experience. An

example response which was coded into this first label, from Participant 422, was: "If I was

indeed killed by the fire, my family would be completely devastated. They wouldn't believe it

and would mourn forever." An example for the label "Questioning/Why me?" from Participant

129 is as follows: "Heartbroken. Filled with grief, and questioning why something like this had to happen to our family." Finally, a response coded into the theme "Would struggle to accept" by Participant 10 was: "I feel my family would be devastated if I died in this fire. They love and care about me so much, they would have a hard time accepting and understanding my death."

Positive thoughts for others. This theme contained responses with a more positive feeling, mostly around hope that the participant's family wouldn't suffer as much or be okay in the end, but also some statements that seemed more confident rather than just hoping. The labels that emerged from this data and examples of each are listed. Hope they wouldn't suffer, Participant 33: "I imagine they would be devastated. Although I would hope that they wouldn't be terrible sad over what happened." "Hope they still live fully," Participant 6: "My family would be heartbroken I think. As any family would if they lost a son. They would be sad and hopefully live life fullest for me knowing that the most important thing is to be happy." "They would support each other," Participant 367: "I think they would be devastated, and it would be tragic, but I also know they would support each other and find the strength to be able to carry on everyday life and somehow find a meaningful purpose to me dying." "Spirituality would make it easier," Participant 235: "My family would all be devastated, heartbroken, but knowing that in some way good would come out of it. They would also be happy that I would be in heaven." "Hope they would be proud of me," Participant 107: "…I would hope that they could stay strong and get through this together. I think they would look back and be proud of what I have done and smile on the good times we have had."

Unsure/Self Thoughts. This final theme was made up from only a few responses that differed in that participants did not really respond or responded by focusing on their own

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feelings. Examples of the two labels that made up this theme are: "Unsure," Participant 36: "I

have no idea. They would be sad. Maybe they would be mad at the fire department. I am

honestly not sure." "Feel bad for causing family to suffer," Participant 26: "…I would not be able

cope because I care too much about other people's emotions. I would feel worse for them

because I caused their suffering."

Overall these theme provide strong support for RQ3 regarding whether participants

were able to take the perspective of others. Aside from the final theme, which contained

responses not related to taking the perspective of others, participants focused on how hard it

would be for their family to lose them as well as having positive thoughts in hopes their family

wouldn't suffer too much. These theme show support for RQ3 and indicate that the

manipulation was in general able to function in this dimension as was hoped for. Again, the

theme and labels which emerged, presented below, provide data which address RQ4 (i.e. What

themes will emerge from an in-depth analysis of written responses?) These research questions

are explored further in the discussion section.

Table 4. *Reflecting on how one's family would react.*

_____

Theme	Label
Negative Emotion	Devastated/Traumatized/Upset
	Grief
	Anger
	Guilt/Blame
	Disappointment
Difficulty coping	Change them forever
	Questioning/Why me?
	Would struggle to accept
Positive thoughts for others	Hope they wouldn't suffer
	Hope they still live fully
	They would support each other
	Spirituality would make it easier
	Hope they would be proud of me
Unsure/Self Thoughts	Unsure
	Feel bad for causing others to suffer

_____

Quantitative Analysis

The first quantitative analysis involved testing whether the experimental and control group significantly differed on six outcome measures. In order to do this a series of analysis of variance (ANOVA) were conducted. Separate ANOVAs rather than a single MANOVA were conducted as changes in specific subscales were predicted and of primary interest in the current study. In addition, intercorrelations and reliabilities for each scale are presented in Table 5. Outliers (identified as data points that were above or below 1.5 times the interquartile range on each outcome for each condition) were removed from the analyses (Hoaglin, Mosteller & Tukey, 1983). The number of outliers ranged from 2 to 15 depending on condition as can be seen in Table 6 by subtracting the degrees of freedom from the original 430.

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Table 5. *Means, standard deviations, correlations matrix of study variables.*

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Extraversion	9.92	2.69	(.71)													
2.Agreeable	10.19	2.14	.12	(.73)												
3. Conscientious	11.20	2.22	*.13	*.15	(.74)											
4. Emotion Stab.	9.77	2.64	*.17	*.26	*.22	(.64)										
5. Openness	10.89	2.16	*.33	*.24	.07	*.23	(.69)									
6. Exp. Comfort	51.07	9.99	*.27	*.15	*.28	*.55	*.22	(.88)								
7. Spirituality	28.30	18.41	.02	*.16	.04	.04	-.04	.00	(.95)							
8. Self-Esteem	21.95	7.73	*-.23	-.11	*-.29	*-.48	*-.19	*-.68	.00	(.92)						
9. I. Aspirations	65.55	6.66	.09	*.29	*.22	.11	*.26	*.21	.11	*-.24	(.93)					
10. E. Aspirations	43.44	10.87	.05	-.07	.08	-.08	.09	-.07	*-.13	.02	.11	(.89)				
11. M. Presence	24.38	6.18	.11	*.18	*.19	*.26	.11	*.41	*.31	*-.40	*.32	.00	(.87)			
12.Mean.Search	25.47	6.11	.00	.05	-.04	*-.14	*.15	*-.23	.07	*.17	*.28	*.21	-.09	(.89)		
13. Altruism	56.39	11.55	*.22	.11	.00	*.13	*.20	-.01	.04	-.09	*.20	.01	*.13	.12	(.78)	
14. Materialism	49.65	9.72	.01	*-.16	-.05	*-.15	-.02	-.10	*-.14	*.14	*-.17	*.54	*-.23	*.18	-.09	(.84)

Note. N = 432. Reliability estimates (α) are shown in parentheses on the diagonal for each complete measure. For measures containing multiple scales the mean of the measure is provided. * *p* < .01

Results of the ANOVA indicated there was not a significant difference of the experimental

manipulation on any of the dependent measures at the $p<.05$ level. The means, standard

deviations, effect size and p values are presented in Table 6.

Table 6. *ANOVA - Experimental Group compared to Control Group on outcome measures.*

Dependent Variable	Mean (SD) Control	Mean (SD) Experiment	Deg. of Freedom	Cohen's *d*	F-value	P-value
Aspirations						
Extrinsic	44.22(11.13)	42.34(10.13)	1, 428	.18	3.38	.07
Intrinsic	67.57(5.10)	66.78(5.84)	1, 419	.14	2.21	.14
Meaning						
Presence	24.68(5.88)	24.49(5.84)	1, 425	.03	.11	.73
Search	25.64(5.2)	26.49(5.83)	1, 415	-.15	2.35	.13
Altruism	55.15(10.2)	55.90(10.41)	1, 418	-.07	.38	.54
Materialism	49.71(9.39)	49.54(9.30)	1, 426	.02	.03	.86

These findings were essentially identical in supplementary analyses that adjusted for

level of engagement (i.e., participants self-report on how seriously they participated and were

involved in the tasks). The p values, while controlling for self-report engagement, were:

Aspirations Extrinsic .17, Aspirations Intrinsic .38, Meaning Presence .37, Meaning Search .06,

Altruism .68, and Materialism .76. Based on the themes that emerged in the qualitative

analysis another rating of engagement was created by separating out those participants who

were rated into the *Deny Death* theme on the first and second qualitative questions. As

illustrated in the qualitative section above, this theme was comprised of participants who

appeared to focus more on escape or were in some way critical of the scenario, not thinking it

could apply to them. This rating compared to the self-report rating of engagement were

thought to likely measure something very different, as a person might not be aware of being

defensive to the manipulation and might still rate themselves as being very engaged in the study in general. Of the 215 participants in the experimental condition, 35 were rated as not being engaged in the death reflection manipulation (i.e. part of the *Deny Death* theme), compared to 180 who appeared to be engaged. When this group of 35 participants rated as being less engaged in the experimental group were compared to the other 180 experimental group participants on the six dependent variables significant differences were found (See Table 7).

Table 7. *Comparison of sub-groups within Experimental Condition. Engaged versus Not-Engaged*

Dependent Variable	Mean (SD) Engaged	Mean (SD) Not-Engaged	Deg. of Freedom	Cohen's *d*	F-value	P-value
Aspirations						
Extrinsic	41.76(10.46)	47.17(10.04)	1, 214	-.53	7.94	.005
Intrinsic	66.71(6.24)	64.54(7.83)	1, 214	.31	3.22	.074
Meaning						
Presence	24.46(6.17)	22.54(6.83)	1, 214	.30	2.73	.100
Search	26.26(5.74)	24.97(6.51)	1, 214	.21	1.41	.236
Altruism	56.20(11.68)	59.34(10.98)	1, 214	-.28	2.16	.143
Materialism	48.94(9.68)	52.63(9.11)	1, 214	-.36	4.32	.039

As can be seen, small to medium effect sizes for all variables and despite the small number of participants rated as less engaged, these differences showed significance between groups. Given these results an analysis of variance was run again, now controlling for the new qualitative engagement measure. The outcomes are presented below in Table 8.

Table 8. *Experimental Group, controlling for engagement, compared to Control Group.*

Dependent Variable	Mean (SD) Control	Mean (SD) Experimental	Deg. of Freedom	Cohen's *d*	F-value	P-value
Aspirations						
Extrinsic	44.13(11.11)	41.39(9.90)	1, 385	.26	6.56	.01
Intrinsic	67.54(5.09)	67.08(5.56)	1, 392	.09	.69	.40
Meaning						
Presence	24.66(5.87)	24.78(5.71)	1, 390	-.02	.04	.84
Search	25.64(5.19)	26.59(5.20)	1, 382	-.18	3.20	.07
Altruism	55.08(10.25)	55.44(10.59)	1, 384	-.03	.12	.73
Materialism	49.70(9.43)	48.94(9.25)	1, 390	.08	.64	.42

When compared to the results from Table 6, some differences are apparent, particularly stronger effect sizes for Extrinsic Aspirations and Meaning Search. However, these variables still did not yield significant results at the adjusted Bonferroni level of .008, although Extrinsic Aspirations was very close with .01. Overall, these results suggest that the death reflection manipulation did not have a significant measurable impact on intrinsic aspirations, presence or search for meaning, altruism or materialism between groups and therefore did not find support for hypothesis H1, H2, H3, and H4 (i.e. higher intrinsic aspirations, lower extrinsic aspirations, higher presence and search for meaning, higher altruism, and lower materialism). However, given the differences found within the experimental group, particularly on extrinsic aspirations and materialism, and the near significance between groups on extrinsic aspirations it would appear that the death reflection, if taken seriously, may have some impact on participants, and in the direction that was expected (i.e. those who participated in the manipulation and were engaged show lower levels of materialism and less extrinsic aspirations). In this way H1 and H4 were partially supported by these results although would need further testing to confirm these apparent outcomes.

The second analysis examined potential differences between groups after one month and follow the same approach as used in the first analysis. Although significant differences did not exist directly following the manipulation, ANOVAs were run to compare groups using the follow-up data to test for possible latent effects. Results of the ANOVA also did not differ appreciably when we compared groups at the 30 day follow-up on any of the dependent measures (see Table 9). These results suggest that there were no dormant effects that could have possibly arisen over time after the manipulation, at least during the time interval that was tested. Given these outcomes no support for RQ6 was found other than to say that there didn't appear to be any latent effects, and if anything the one near significant difference found post-intervention was no longer close to being significant at follow-up testing (i.e. Extrinsic Aspirations).

Table 9. *Experimental Group and Control Group on outcome measures at 4 week follow-up.*

Dependent Variable	Mean (SD) Control	Mean (SD) Experimental	Deg. of Freedom	Cohen's *d*	F-value	P-value
Aspirations						
Extrinsic	42.48(10.66)	41.40(9.78)	1, 343	.11	.96	.33
Intrinsic	65.62(5.61)	65.58(5.59)	1, 336	.01	.01	.95
Meaning						
Presence	22.94(4.70)	22.70(5.50)	1, 336	.05	.19	.66
Search	25.81(5.20)	26.50(4.75)	1, 335	-.14	1.59	.21
Altruism	52.68(10.23)	53.65(9.81)	1, 333	-.10	.78	.40
Materialism	49.31(10.00)	48.95(8.50)	1, 338	.04	.13	.72

In addition to comparing groups after 4-weeks groups it was also decided to compare means from time one to time two for each conditions (see Table 8 and 9 for means). Both conditions showed significant decreases on Intrinsic Aspirations, decreases on Meaning

Presence, and decreases on Altruism. The p values for the control condition were: Aspirations Extrinsic .04, Aspirations Intrinsic .0001, Meaning Presence .0002, Meaning Search .66, Altruism .002, and Materialism .39. The p values for the experimental condition were: Aspirations Extrinsic .98, Aspirations Intrinsic .0003, Meaning Presence .0001, Meaning Search .81, Altruism .02, and Materialism .99. It is difficult to what exactly these differences mean, but it is interesting to note that for both conditions significant decreases in means existed on the same variables. It is possible that simply participating in the study, filling out measures and reflecting on their lives lead all participants to show some increases in Intrinsic Aspirations, Meaning Presence and Altruism regardless of condition. It could also be based on time in the school year or other factors, without more evidence it is difficult to say.

Interaction analyses

As a follow-up, interactions between group and eight pre-measures (including five personality factors, experiential avoidance, spirituality, and self-esteem) on the six outcome measures were conducted. A product term for each interaction was created (i.e. condition x moderator) and was entered into the model along with the moderation variable and condition variable. Multiple linear regression was then used to test each interaction effect to see how much they may contribute to the model's fit for the dependent variable. Standardized beta coefficients were examined to see if the interaction term contributed significantly to how well each model described each of the dependent variables. This resulted in forty-eight multiple regression analyses. Adjusting the alpha for the number of analyses conducted to control for family-wise error resulted in an Bonferroni corrected *p*-value of .001. Of the forty-eight analyses, none were significant at $p<.001$. Only one interactions were significant at an alpha of

.05; given this alpha and the number of analyses that were conducted slightly more than two

interactions (2.4) would be expected to be significant by chance alone. Given these factors,

attempting to conclude anything from the one interactions that was significant at the p<.05

level makes little sense. A table containing the measured significance of each of the regression

analysis is presented in Table 10. R squared ranged from .009 to .02, with Betas ranging from

0.11 to -.58 for interactions.

Table 10. *Interaction - Linear Regression Analysis 6x8*

Variable	Aspiration Intrinsic	Aspiration Extrinsic	Meaning Presence	Meaning Search	Altruism	Materialism
1.Extraversion	0.54	0.76	0.14	0.96	0.75	0.71
2. Agreeableness	0.17	0.74	0.35	0.76	0.93	0.23
3. Conscientiousness	0.15	0.68	0.85	0.05*	0.93	0.64
4. Emotion Stability	0.89	0.53	0.37	0.39	0.12	0.81
5. Openness	0.92	0.95	0.15	0.37	0.60	0.43
6. Exp. Comfort	0.74	0.62	0.61	0.63	0.88	0.54
7. Spirituality	0.66	0.33	0.08	0.96	0.55	0.33
8. Self Esteem	0.26	0.09	0.77	0.62	0.38	0.61

Note. P - Values of interaction listed. * p =< .05. Average observed power of interactions = .70 R
squared ranged from .009 to .02, with Betas ranging from 0.11 to -.58 for interactions.

Given these outcomes, support for the interaction hypotheses were not supported for

having a stronger manipulation effect (i.e. H8a, H8b, H8c, and H8d (i.e. higher levels of

openness, higher levels of spirituality, lower levels of neuroticism, and lower levels of

experiential avoidance). In addition, no information was found regarding the research question

RQ5 aside as to what other interactions may have strengthened or weakened the manipulation

effect (i.e. extraversion, agreeableness, conscientiousness, and self-esteem).

DISCUSSION

The purpose of this study was to help gain a deeper and better understanding of existential awareness. This was attempted by administering a condition to the experimental group that was hoped to bring about a deeper sense of existential awareness that would in turn have an effect on certain characteristics of the participants. To better understand this awareness the study investigated three primary questions that were measured qualitatively and quantitatively. These methods were utilized to gain a deeper understanding of how the death reflection manipulation would work with more specificity than in previous research. The three primary questions were simply: "Will the death reflection manipulation work?", "For whom might it work better or worse?" and provided it does work, "Will the effects last over time?"

It was hypothesized (i.e. H1, H2, H3, H4) that the death reflection manipulation would show differences between the experimental and control groups measured by four scales: the 30-item Aspirations Index, which examines value orientation (Kasser & Ryan, 1996), the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006), Self-Report Altruism Scale (Rushton, Chrisjohn, & Fekken, 1981), and the Materialism Scale (Richins, & Dawson, 1992). Qualitative data also was analyzed to address research questions that examined if the intervention functioned as intended by ensuring that participants were engaged in the study (RQ1), were able to reflect on their lives (RQ2), and were able to take the perspective others (RQ3). As mentioned earlier these three factors were taken from near death experience work done by Elsaesser and Valarino (1998) and are part of the death reflection intervention itself as they serve the role of causing participants to do more than simply read a passage. In addition

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the fourth research question, RQ4, was addressed through the construction of themes that emerged from the data. This question served the purpose of gaining a better understanding of how participants interacted with and responded to the manipulation in ways that would add to what was gathered from quantitative outcomes.

The second overarching question was if certain individual characteristics may make the death reflection intervention have a greater impact on some participants compared to others. It was hypothesized that higher levels of openness (H5a), higher levels of spirituality (H5b), lower levels of neuroticism (H5c), and lower levels of experiential avoidance (H5d), would be associated with a stronger manipulation effect. As there was lacking evidence for other moderators that were tested, they were framed as a research question, RQ5, which examined if there was also interaction effect for extraversion, agreeableness, conscientiousness, and self esteem. To test this, the following factors were examined for potential moderation effects: personality (five factors), experiential avoidance, spirituality, and self-esteem.

The final primary research question was more exploratory in nature, and measured whether group differences would exist one month after the experiment took place. The research question, RQ6, was posed to see if effects which did exist following the intervention would also persist over time and still be present in some fashion during our follow-up one month later. Again as explored in the introduction, those who have experienced a significant existential wake-up call through trauma or near death experience often report being changed from that point on. From a counseling standpoint, awareness and growth made during therapy are thought to persist over time with hopes that things don't just go back to exactly how they were once treatment is discontinued. However, this area has not been researched in the

context of a manipulation as used in this study. To truly achieve lasting change from a short intervention would be ideal, but perhaps the effects would be fleeting and dissipate over time. As good as a manipulation and follow-up questions may be, could they be expected to compare to something much more potentially life changing and traumatic as a near death experience? Given the unknowns of this area this question of lasting impact was approached from the standpoint of a research question.

Overall, the qualitative data was suggestive that most participants were engaged in the death reflection manipulation and many of the themes which emerged were congruent with what might be expected from a deeper level of existential reflection (focus on relationships, meaning etc.). The qualitative data from the experimental condition, when rated on level of engagement, also yielded interesting quantitative differences in dependant variables between the larger group that seemed to be engaged versus a smaller sub-group who seemed to not let the manipulation impact them. These differences within the experimental group were significant for extrinsic aspirations and materialism at the $p = .05$ level. Although, when comparing between the control and experimental group on the quantitative dependent variables, results did not support our hypothesis at the adjusted p-values needed to draw any serious conclusions. Interestingly, when the unengaged sub-group was controlled for in the experimental condition, and the control group was again compared to the experimental group results were very close to significance on one of the six dependent variables (i.e. extrinsic Aspirations). Given this, and the significant difference between engaged and unengaged participants within the experimental group, and the direction of the relationships, it would seem that something may be going on with extrinsic aspirations and the manipulation when it

is taken seriously. However, as no significant differences were found between the experimental

and control group, even after controlling for other factors, at the current time all hypotheses

for differences between control and experimental groups must be rejected (i.e. H1, H2, H3, H4).

Furthermore, no significant interaction effects were detected for the variables tested, so

hypotheses H5a,H5b, H5c and H5d must also be rejected.

Death Reflection Manipulation - Was it successful?

The present study sought to examine the *Death Reflection* manipulation created by

Cozzolino et al. (2004) and see if significant results for this manipulation would be found as

compared to a control group. The present study utilized the same manipulation as Cozzolino et

al. (2004) but attempted to measure effectiveness in a more detailed manner in addition to

administering the manipulation online.

The qualitative responses provided a more in-depth way to analyze whether participants

approached and interacted with the manipulation as intended. Although these responses

cannot be treated and compared in the same was as other dependent variables, they do

provide a way to examine the manipulation from an different angle. If participants were truly

engaged or affected by the material it would be expected that the responses to the qualitative

survey questions would be what might be expected of someone truly experiencing a difficult

event.   As is presented in the results section above, it was found that in general participants did

seem to be engaged in the experiment as evidenced by responses of feeling emotion and

providing detail and specificity that showed thought and effort. Recalling the formulation of the

questions it was intended that the qualitative questions would serve to bring about three

responses: imagining the scenario as real, reflecting on one's life, and taking the perspective of others.

When looking over the labels and themes found by analyzing the data from question one and two it seemed as though the majority of participants did imagine themselves in the scenario and treated it as if it were real (i.e. 180 out of 215, 35 being rated in the *Deny Death* theme, i.e. not accepting the scenario). This was indicated by participants focusing on emotions they would feel, or did feel while imagining the scenario. Some participants did focus on escaping the situation, or suggested that the situation could never happen to them, usually because they felt they were smart or perceptive enough to not ever be trapped in a building that had caught on fire. As reported in the results section, when outcomes were compared to the rest of the experimental group small to medium effect sizes on all variables were found, especially for materialism and extrinsic aspirations. Specifically, those who appeared to be engaged in the manipulation as rated by their acceptance and engagement in the death reflection scenario showed lower levels of extrinsic aspirations, and lower levels materialism following the experiment. This was an interesting difference, and appears to be tapping into something different than the self-report engagement question asked of participants following the initial study. It was reasoned that participants might feel like they were very engaged in the study overall, and that whatever barriers prevented them from really being involved in the death reflection manipulation might not be something they were aware of or would report. The self-report item likely measured how much they felt like they were engaged in the study overall, including filling out the various measures and so on, whereas they way they responded

to the experimental manipulation gave an indication of whether or not participants got into the death reflection scenario itself.

Examination of the themes and labels emerging from responses to question three (i.e. "Again imagining it did happen to you, describe the life you led up to that point") show that participants were also able to engage in reflection of their own lives and provided thoughtful answers about the lives they lived before. This section contained very few responses that indicated that participants did not reflect on their own lives, and didn't contain any of the elements found in the first two questions of participants rejecting the situation or questions. Given the nature of the prompt it is not surprising that participants may have found less to disagree with and something easier to answer.

Finally, examination of the themes that emerged from the fourth question, "How do you feel your family would react if it did happen to you?", reveal that the majority of participants were able to take the perspective of others. Some participants reference their own feelings or their hopes which could be argued to be not really taking the perspective of another person, however these responses were in the minority and did not suggest a lack of being engaged in the situation as had been seen previously with participants who focused on escape and so on despite the scenario clearly stating that wasn't an option. Overall, participants provided answers suggesting they were able to think of how their family members would feel devastated and be deeply impacted if had they been in the tragic accident they read about.

In summary, the qualitative responses in the experimental condition provide support for the existence of the three near death experience components as was intended in the manipulation design and provide an answer to RQ3 (Cozzolino et al., 2004; Elsaesser and

Valarino, 1998). In addition, these responses indicate that despite the experiment being online the majority of participants seemed to be active and thoughtful, and that the manipulation was successful in meeting this basic goal of engagement. These results in turn suggest that this may in fact be a viable modality for delivery for the study of this manipulation, at least from a qualitative level of engagement standpoint.

In addition to the manipulation's ability to meet the three components of imagining the scenario as real, reflecting on one's life, and taking the perspective of others, the specific themes that emerged made up the other qualitative research question, RQ4. Recalling back to the near-death experience and posttraumatic growth literature we might expect to find themes emerge that would suggest participants may have felt concern for others, increased appreciation of life, reduced interest in material possessions, reduced selfishness, decreased extrinsic values, increased focus on relationships and intrinsic values, greater acceptance of death, reduced death anxiety and importance on meaningful life (Greyson, 1992; Groth-Marnat & Summers, 1998; Heffron, Grealy & Mutrie, 2009; Martin & Kleiber, 2005; Ring, 1984; Tedeschi & Calhoun, 1996; Tedeschi & Calhoun 2004; Thibodeau, 1999).

Themes from the first qualitative questions *(thoughts and emotions while imagining the scenario* - see Table 1) include a focus on positive relationships, valuing life, and accepting death, all of which align closely with the above findings of increased focus on relationships, increased appreciation of life and greater acceptance of death. Table one also includes the theme of negative emotion, which would be expected and as stated earlier in some way predicts engagement in the scenario, especially as the question asks participants to report their thoughts and emotions. Finally, the theme of not accepting death did in fact seem to be a sub-

group of participants who didn't engage in the same way and who had different outcomes on the measured dependent variables following the manipulation. Overall, themes from Table 1 show strong support for the death reflection manipulation as themes very closely aligned with those reported in the literature mentioned above.

The themes which emerged from the second question (*how final moments would be handled* - see Table 2) include a focus on positive relationships, valuing life, negative motions, not accepting death, and accepting death. Very similar to the first question, themes aside from negative emotion and not accepting death are very closely overlap with themes from the literature suggesting that an increased appreciation for relationships, for life in general, and acceptance of death are commonly reported for those experiencing real life existentially impacting events (Groth-Marnat & Summers, 1998; Martin & Kleiber, 2005; Ring, 1984; Thibodeau, 1999).

An examination of the third question (describing life led up to the present - see Table 3) led to the themes of positive life, unfinished/neutral life, positive relationships, and altruism. Within the theme focused around positive life, participants most commonly cited experiences that had been fulfilling or a sense of appreciation for the life they were able to live. This seems to align with the same appreciation for life theme seen earlier as well as a component of meaningful life. The second theme contained themes centered around regrets, unfulfilled potential and wishes to have taken more risks. The content of these were usually focused around social interactions, relationships and risks that would have likely yielded personal growth. Regrets were never centered around not being able to purchase a certain material item or not being able to buy a 5000 square foot home for example, which was interesting

when we think about goals people may have in life. Finally, the common theme of positive

relationships as well as a new theme of altruism also align very closely with what might be

expected given the literature on valuing relationships and decreased selfishness or self

indulgence (Heffron, Grealy & Mutrie, 2009; Tedeschi & Calhoun, 1996; Tedeschi & Calhoun

2004).

Finally, the themes which came about from responses from question four (*reflecting on

how one's family would react* - see Table 4) were negative emotion, difficulty coping, positive

thoughts for others and unsure/self thoughts. The themes of negative emotion and difficulty

coping might be expected from anyone reflecting on how someone might handle the loss of a

loved one, but the theme of positive thoughts for others was particularly interesting. This

theme contained labels such as hoping their family wouldn't suffer, hoping they would support

each other, and hoping they could still live full lives. These labels are very un-selfish as well as

having an altruistic sense of wanting the best for someone else rather than focusing on their

own hypothetical loss. The theme of unsure/self thoughts contained some responses that were

unsure how family might react. It is difficult to know if this came from a place of not wanting to

think about something painful or if it really was because the participant truly wasn't sure. The

final label of feeling bad for causing others to suffer again contains an unselfish and altruistic

sense.

Overall, the themes coming from qualitative analysis of these four questions aligned

closely with past literature and provided interesting responses that added much to the

understanding of how participants interacted with and responded to the death reflection

manipulation. Specifically, participants focused on the importance of relationships, meaningful

life experiences, an appreciation for life, a lack of selfishness or materialism, and altruistic thoughts for others.

In addition to the qualitative component of the analysis, quantitative analyses were also conducted in hopes of gaining a clearer, and more specific understand of the impact of the death reflection manipulation on a number of dependent measures. However, unlike the qualitative portion of the analysis quantitative results did not support our hypothesis on any of the six dependent measures that we examined. Although finding that a sub-group within the experimental condition differed strongly from the rest of the participants who seemed more engage in the manipulation provided one possible explanation. After controlling for this qualitative engagement discrepancy within the experimental group one dependent measure variable was significant at the .01 level (i.e. Extrinsic Aspirations). However, once p values were adjusted to account for the 6 tests run (Aspirations: Extrinsic/Intrinsic, Meaning: Presence/Search, Altruism, Materialism) none of the p values were significant at the adjusted .008 level. Based on results found in near death experience and post traumatic growth literature it was anticipated that the measures used would likely detect changes that were expected to occur for participants in the experimental group.

It remains unclear as to why the quantitative results were not stronger within the study, especially given the large sample size. One of the first questions was regarding engagements, however, given the qualitative responses, self-report engagement question, and the qualitative engagement rating this seemed to not be as significant a factor as might have been guessed. It was anticipated that as the survey was given online, students may have been distracted or in a place not conducive for the sort of depth that the death reflection

manipulation would require. Interestingly, comparing the qualitatively engaged group to the group that seemed defended or guarded in some way lead to possibly the most interesting quantitative results. As these groups seemed to differ, and given that the differences were in the direction that would be predicted for 5 of the 6 dependent variables (see Table 7) it appears as if something is going on between these groups following the manipulation. One hypothesis is that for this sub-group, the manipulation acted as a mortality salience manipulation rather than the death reflection manipulation, essentially activating these participants to respond as those who participate in TMT studies (Greenberg, Pyszczynski, & Solomon, 1986; Solomon, Greenberh, & Pyszczynski, 1991). This effect could have moved that sub group in one direction, while the those who engaged in the death reflection manipulation as intended were moved in the opposite direction (i.e. more intrinsic, less extrinsic, more search and presence of meaning, less materialistic). This explanation is just speculative at this point, but given previous research and the seemingly large different between groups it would be an interesting area to continue to explore further.   Perhaps some people are not willing to engage deeply in matters that cause discomfort, but that difference doesn't show up until they are actually put in an uncomfortable position and isn't something they are aware of themselves (or that would show up on a self-report measure).

Moderating factors - Did individual differences play a role?

As moderating factors can exist without having a main effect this area was hoped to provide some information about individual differences and effectiveness of this manipulation. It was hypothesized that certain qualities or traits of a person might make them more or less able/willing to reflect deeply on existential matters enough to be influenced by the

manipulation. However, as was found in the main effect, no significance was found when examining the potential 48 (6x8) moderation effects. One of the interactions was significant at the .05 level, but again when adjusting for the number of tests run we did not see significance at the .001 level (see Table 10). This result was surprising given how differently we would expect some participants to interact with the death reflection manipulation. One of the moderator measures that seemed to be a very promising candidate was the measure of experiential avoidance. As was evident in the qualitative engagement differences, it was expected that some participants might be less likely or willing to entertain ideas that are uncomfortable. As was mentioned above, this difference might be something that participants would not be aware of about themselves until put in a situation. It might be similar to asking a person if they are likely to be defensive, or if they like to have a fun and adventurous life. Self report might not get at the broad range for which people actually differ in these ways. As there were so many interactions measured, and given the power and sample size it seems as though it is more likely that differences exist and the study wasn't able to detect them, rather than concluding that difference don't exist (especially given our qualitative engagement differences within the experimental group). It would be interesting to have others rate a person on the various moderator variables to potentially get around the self-report blind spots that might exist.

It is also possible that despite appearing to be engaged within the qualitative section, participants were not as thorough when filling out moderator and dependent variable measures. Running a smaller sample in person would be a way to combat this, however may lack power to detect differences if the sample size was much smaller. It might also be

beneficial to just include one moderator and one dependent variable to decrease the possibility of carless responding that may occur when having to sit through a more extensive battery of measures as was used in the present study. Again, given the sub-group differences within the experimental group it would seem foolish to suggest that individuals do not differ in the way they approach the death reflection manipulation, but the present study was not able to detect those differences.

Impacts over time - Did potential difference in groups persist over time?

When comparing groups over time, using the dependent variables, again no support was found for differences between groups. This did not come as much of a surprise given the non-significance in the first two areas measured, but there was some hope that effects might potentially take time to set in and manifest. Having time to process and reflect on a thought or event could potentially give people space to integrate something new. On the other hand, like many things in life, thoughts and emotions may fade with time, and even seemingly impactful brief moments may struggle to bring about any lasting change. There are many time points that could be tested to examine this effect. The present study focused on one that could potentially add to the literature on the impact of existential awareness over time. At the one month follow-up we did not find evidence to support and lingering effects, however it would be expected that unless the manipulation was very powerful it would be more likely to fade over time rather than grow.

In order to test for effects over time it may be helpful to start more simply with a measurable result that is consistently appearing through the death reflection manipulation. Once this was established, it may be easier to track that dependent variable outcome over time

and chart how the duration after or between intervention impacts the variable. There may also be differences between individuals and how long a change persists in this way. As we have likely all experienced one friend may be deeply moved by a movie and stop eating meat or fast food from that point on, whereas others may seem equally smart and engaged in the same movie and may only pass on hamburgers that evening before going back to their normal ways. Whether it is a motivational speech, or a moving documentary, most people might be affected in the moment but the mystery of lasting personality or behavior change is much more elusive. This is probably the product of a number of things and might be difficult to tease apart, and in counseling being able to read where a person in and how a intervention will land is probably often much more important than the intervention itself. This leads to other potential issues with mass interventions such as the one utilized in the present study and is discussed more below.

Overall Examination

It is difficult to tell exactly what lead to the lack of or only partial support for what was originally hypothesized. Qualitatively, participants seemed engaged, and it seemed as though the manipulation prompted them to think and reflect on the scenario and their own lives as was intended. The themes that emerged from the qualitative analysis also aligned neatly with what might have been predicted from past literature. However, as has been discussed it is less clear why there were not clearer differences found quantitatively. It is likely a number of factors and perhaps more complex than originally anticipated at the outset of this study.

One initial idea is that the online format in which the manipulation was administered may have compromised the depth at which the information was processed and reflected upon.

Even though through self-report and by examining participant responses it seemed as though students were engaged, the depth of engagement is another issue. Online administration was chosen due to its benefits of quantity of participants (something needed to look for possible moderation effects), however quality may have been affected by allowing participants to potentially be in locations or around distractions that may have gotten in the way of the manipulation really hitting home. Although past TMT studies reported successfully using online administration (Arndt, Vess, Cox, Goldenberg, & Lagle, 2009; Beatson, Loughnan, & Halloran, 2009) , the level at which the death reflection manipulation is operating at is deeper and more personal. As was seen within the experimental group, some participants differed quite dramatically in how they answered the qualitative questions, as well as on dependent variables. It is possible that they responded more defensively in a very obvious way, but possibly others as well could have been influenced in a similar way although in a less extreme way. If some participants were reacting at the mortality level of existential awareness we would expect them to offset those who were more deeply impacted as reactions to these different levels of existential awareness are nearly opposite. If this were the case, then participants could honestly report being engaged and honest in the experiment with outcomes being difficult to detect through some scores counteracting each other. To a small degree the current study found this to be potentially happening, as a small subgroup within the experimental condition had scores that were elevated in areas that align with TMT findings.

Another possible idea is that, given the nature of the reflection, we might be more likely to see results in the qualitative responses as they may be thinking more deeply in the moment, but not have yet really integrated those thoughts into actual changes of things like altruism or

intrinsic aspirations. The jump from reflecting in the moment to actual attitude or personality

changes is likely a difficult process. The trauma of a near death experience is certainly

something that would be nearly impossible to get away from for days, weeks or more where as

our manipulation was probably more in the area of 5-10 minutes. The group differences in

Cozzolino's (2004) initial experiments were found by comparing qualitative responses and a

implicit greed measurement. Again, when being asked to rate oneself on things like

materialism and so forth, self-report is much more explicit and may not be as sensitive to

picking up on actual differences. It would be interesting to test this with the death reflection

manipulation. In some ways the themes that emerge from the qualitative data might serve as a

more accurate and implicit measure. This idea is supported by the group differences detected

through the qualitative responses being much stronger than difference found between groups

on any of the moderator variables. Terror Management studies are based much more around a

person's reaction to something that happens quickly and operates as a defense rather than

attempting to bring about an actual personality change or behavior change. In this way, those

differences might be much easier to bring about and easier to measure quantitatively. It would

be similar to comparing the almost automatic reaction most people would have to being

physically threatened by a stranger compared the type of reflection a person might engage in

while looking at the night sky and feeling very small and temporal compared to the vast

expanse of the galaxy. Both of these experiences would likely have some impact on a person in

the moment, but we would expect the reaction in the first situation to be easier to measure

and observe than the reflection that might bring about a bit more existential awareness in the

second situation.

Finally, an idea brought up earlier and one that comes from personal experience in counseling is one of compatibility of an intervention and the person receiving it. Timing and fit for a person are very key for a certain intervention to really have an impact. As this study has examined existential awareness at various levels of depth, the requirements for timing and fit are likely greater for the death reflection manipulation compared to the mortality salience manipulation used in TMT. Given this, and considering the limitations discussed above it might be somewhat unrealistic to expect any one intervention or manipulation to be able to resonate at a deep enough level to show strong positive effects on a large group of people. Perhaps for some participants in the study the timing and content were right to really impact them, but if others responded with feeling threatened, and if others still responded in some other way the differences between these sub-groups could easily be washed out by the majority not having the same reaction. A study that gave everyone the death reflection manipulation and that was focused primarily on how individuals interacted with the manipulation itself could provide answers to these questions that the present study results suggest might need answering.

Implications for Future Research & Practice/Limitations

Although mixed results were found in the present study, this is a promising area of study given the potential positive benefits that are often associated with individuals who feel they have really come to terms with their own mortality and thereby feel more free to live fully and authentically. It is difficult to pinpoint what might make the study more effective, but the suggestions explored above as well as the way in which participants were surveyed and the age of participants may be starting places. A college population of mostly first year students was an appropriate starting point for research in this area, especially as a large sample was needed to

investigate possible moderation effects. However, at this age students may be less likely to

really engage in thinking deeply about their own lives, coming out of their teen years where

they are more prone to risk taking than perhaps any other time of life. Studying a population of

graduate students, or older adults would be interesting and perhaps prove more fruitful. A few

more years of life experience and potential for reflection and evaluation of one's life may

provide the groundwork for something like the death reflection manipulation to sink in deeper.

Older participants would also have been more likely to have dealt with loss, which may have an

impact on how likely or able they are to engage in the reflection that is needed for the death

reflection manipulation to be effective. Past lost or near loss could also be studied as a

potential moderator in itself in a more specific way than by simply having older participants and

assuming more experience around loss. As the qualitative results and self-report suggested that

most participants did study and feel engaged, then maybe it is more about the depth at which

the scenario resonated with them that lead to non-significance in the quantitative analysis.

Another area of potential limitation was attempting to have the manipulation done

online, embedded in a survey. Again, this choice made sense given the need for a large number

of participants, but as explored earlier this may have also effected the quality of intervention in

exchange for quantity. Future studies could potentially use in person delivery of the

manipulation and recruit fewer students with a focus on potential differences between groups

and not worry about moderation effects. In addition, studies examining the various ways in

which people react to the death reflection manipulation may be another approach to

answering some of the potential limitations that various levels of engagement at a deeper level

may impact outcomes.

In order to actually know that the death reflection is being studied and not potential mortality salience reactions or other reactions it may be helpful to screen participants. This would limit the ability to generalize findings, but may also provide a purer way to study the manipulation itself. As the present study found sub-groups within the experimental condition to have a strong impact on results, it would be expected that careful screening might help weed out participants that wouldn't respond as intended to the manipulation. A trial scenario with some qualitative questions might be a starting point for such screening, as well as age, life experience and other potential factors. Unfortunately, much of this is just speculation as moderation variables would have been another great screening tool if the present study had detected those variables. Once the death reflection manipulation has been tested and evaluated more, then larger scale studies with in person interventions may be more warranted and continue to build from there.

As was touched on previously, the way in which changes are measured may be important to look at as well. Cozzolino et al. and the present study found qualitative data to suggest the death reflection manipulation was successful. In addition, an implicit greed measure also yielded differences between groups following the intervention. Finding ways to test for moderation and outcome variables using implicit measures, or other people's evaluations of participants may be a more sensitive and accurate way to get at potential changes between groups. These can often be more time consuming but again may be a way to secure a foundation of research on the death reflection manipulation that future studies could build on.

This manuscript began by exploring self-awareness and how it is thought to be important in many aspects of life and is especially central in psychotherapy. Those practicing therapy utilizing existential theory embrace self-awareness of one's impermanence as a difficult but powerful agent for change and growth. Unfortunately, interventions from existential theory may be less defined and less testable. The current study researched the death reflection manipulation which could easily be adapted to be used in therapy. As has been mentioned previously, timing and fit are very important to how well an intervention works, but the preliminary results of this study suggest that the manipulation did seem to cause most people who read and responded to reflect on their own lives, their relationships, the meaning they get from life as well as things they may regret or still wish to do. Evidence also suggests that those who really get engaged in the death reflection manipulation may at become less extrinsically motivated as well, although this finding was not quite significant at the adjusted p value. As this manipulation is studied more it may become a useful intervention for existential therapists who may feel that they have a solid understanding of the orientation but lack specific interventions to get clients thinking about their own lives. A version of this could potentially be given as a handout and used as homework. Provided future studies find more support for this intervention, it would be expected that in therapy it would be more useful than given to a large group of people online. The therapist's skill would help issues of fit and timing, and the therapeutic environment and ability to discuss and reflect would give more depth to the manipulation which may in turn yield more of the positive outcomes associated with deeper existential awareness. It is the hope of this author that the present study helps to inform and

promote discussion and future research in the area of the positive outcomes of existential

awareness and its application in a variety of life's domains.

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APPENDIX A

Consent to Participate in a Research Study - Colorado State University

TITLE OF STUDY: An Investigation of Existential Awareness

Principal Investigator: Bryan Dik, Psychology, Ph.D. – Bryan.Dik@colostate.edu – 970-491-3235
CO-Principal Investigator: Isaac Hunter, M.S., Graduate Student, **csuHunterStudy@gmail**.

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? As a student you are at an age and place in life where you are making a lot of decisions about your future. Some students seem to be more aware of themselves and the time they have in life to make and live out their choices. We would like to learn more about how some aspects of self awareness impact the values you hold and your outlook on the present and future.

WHO IS DOING THE STUDY? This study is being conducted by a graduate student and faculty member in the Counseling Psychology department. In addition we will have some undergrad research assistants.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of this study is to learn more about how aspects of self awareness impact how we see the world and the values we have. Specifically, we are investigating individual existential awareness – i.e., awareness that our time on earth is limited and that we are responsible to use that time to do something meaningful with it.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? This study will consist of two online surveys. We expect the first survey to take up to an hour, with the second survey taking up to 30 minutes. The second survey will be emailed 4 weeks after the first one and students must be able to take both.

WHAT WILL I BE ASKED TO DO? As part of our study you will first be asked to fill out some basic demographic information so we can know more about who you are. You may be asked some basic questions about your current mood and how you feel about your life in general, what you value and what your goals are. You will then be asked to read a passage and imagine yourself in a certain scenario. You will then respond to what thoughts and feelings might have come up as you imagined yourself in this situation. Following this section you will fill out some additional scales that will also measure things like current mood and how you feel about your life in general, what you value and what your goals are as your general outlook on your present situation and your future expectations. One month later we will again ask you to fill out some follow up questionnaires to see if any of your previous responses regarding values, your outlook on the present and outlook on the future may have changed.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? You should *Not* take part in this study if you are under the age of 18. Also you should not take part if you are currently very *depressed* or *suicidal*.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

Ø There are no physical risks associated with this online survey. Similar studies have not reported any negative outcomes and typically report neutral or positive. However, it is possible that when imagining difficult scenarios some people might feel discomfort in the moment. As these are hypothetical scenarios intended to cause existential reflection we do not anticipate more discomfort than most people experience while reflecting on new environments or new possibilities about the outcome of their lives. Again these moments, although potentially uncomfortable, often lead to growth and what we normally consider to be positive outcomes.

Ø It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? Based on past research we anticipate that some participants may feel they benefit from having more clarity or awareness about their lives. It is unclear if certain groups of people may experience these benefits more or less than others.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is strictly voluntary. If you decide not to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

There are many studies which students may sign up for, but students are still expected to complete studies if they wish to receive class credit. As this study has an initial survey and one month follow-up survey you are asked to complete both to qualify for research credit.

WHO WILL SEE THE INFORMATION THAT I GIVE? We will keep private all research records that identify you, and at no point will your name be directly associated with any survey responses. Records of this study's results will be maintained for future reference for a period not to exceed that allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from your research records and these two things will be stored in different password protected files on a private computer.

You should know, however, that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court OR *to tell authorities if we believe you have abused a child, or you pose a danger to yourself or someone else.*

Your identity/record of receiving compensation (NOT your data) may be made available to CSU officials for financial audits.

CAN MY TAKING PART IN THE STUDY END EARLY? Students must complete required surveys and must respond to the email to complete the second portion of the study. If you fail to fill out the information asked, if your answers are nonsensical, or if you fail to complete the follow-up survey then you may be removed from the study and not given credit for your partial participation.

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? Successful completion of this study will go toward your research credits for class.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? We do not anticipate any injury but *The Colorado Governmental Immunity Act* determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS? Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, **Isaac Hunter** at **csuHunterStudy@gmail.com**. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you. This consent form was approved by the CSU Institutional Review Board for the protection of human subjects in research on (Approval Date).

WHAT ELSE DO I NEED TO KNOW? - This study is online and consists of 2 separate surveys
- The first survey may take up to **1 hour and requires reading, thinking, and some writing.**
- The second survey will be emailed to you and must be complete **approximately 1 month after the initial survey is given.** It may take up to 30 minutes and may require you to fill out additional measures.

Your signature acknowledges that you have read the information stated and willingly sign this consent form.

By selecting the "I Accept" button, you are signing this Agreement electronically. You agree your electronic signature is the legal equivalent of your manual signature on this Agreement.