The Effects of Existential Salience on State Anxiety

Joseph Morger
Eastern Illinois University

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THE EFFECTS OF EXISTENTIAL SALIENCE ON STATE ANXIETY

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Joseph Morger

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The Effect of Existential Salience on State Anxiety

Joseph E. Morger, B.A.

Eastern Illinois University
Abstract

Existential anxiety is theorized to result from one’s knowledge of human existence. Four givens of life have been identified that result in existential anxiety: death, freedom, isolation, and meaninglessness (Yalom, 1980). Terror management theory purposes the knowledge of one’s own death to be a great source of distress. The theory posits that to cope with these distressing thoughts, one is motivated to adhere to a cultural worldview. Adhering to a cultural worldview allows one to view the world as a structured place, in addition to raising one’s self-esteem. Terror management research has shown that making mortality salient results in harsher criticism against those who oppose one’s worldview, increased positive regard for those who uphold a similar worldview, as well as influence over various behaviors. Uncertainty management theory suggests that the distress resulting from acknowledging one’s own mortality is due to the uncertainty that surrounds death. Research has provided mixed results as to whether mortality or uncertainty salience produces larger effects. The current study examined the effect of both mortality and uncertainty salience on state anxiety levels compared to a control condition. Results indicated that both uncertainty and mortality salience yielded higher levels of state anxiety compared to the control condition. Additionally a significant main effect of self-esteem was found, such that higher self-esteem resulted in lower levels of state anxiety, regardless of salience condition. Results demonstrate the relevance of existential concerns in the young target population’s lives.
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The Effects of Existential Salience on State Anxiety

Anxiety, an emotion that is evident to some degree in all human beings, is characterized by tension, worry, and marked by physical changes, such as increased heart rate, rapid breathing, increased perspiration, and dilation of the pupils (American Psychological Association, 2014). Evolutionary psychologists argue that anxiety arose out of the need to escape threats in one's environment. A potential threat would activate changes in an individual's autonomic nervous system, specifically one's fight-or-flight response. In the 21st century, individuals are faced with less tangible threats. Barlow (2002) uses this differentiation of tangible and less tangible threats to differentiate fear from anxiety. Others view the distinction between anxiety and fear to be a matter of the duration of the reaction. For example, a fear response would be short lived, while anxiety persists after the stimulus is no longer present (Hartley & Phelps, 2012). Wicker, Payne, Roberson, and Garcia-Falconi (1985) surveyed nonclinical populations and found that when compared to fear, anxiety was more future-oriented, lasted longer, and was associated with higher temporal uncertainty.

In addition to the physiological changes that anxiety produces, there is also a major impact on one's cognitive processes. The presence of anxiety has been shown to decrease reaction times when individuals are instructed to identify a threatening stimulus. This decreased response time would have advantages when one is faced with a threat to one's self. Studies have also shown that anxiety interferes with an individual's ability to learn, process information and regulate emotions (Hartley & Phelps, 2012). An example of how anxiety interferes with an individual's ability to process information was illustrated with a modification of the Stroop Task. In the original Stroop Task,
participants were presented with a list of the names of colors, displayed in either a consistent, or inconsistent ink color. For example, the word blue could be presented in blue ink, or orange ink. Individuals were asked to state out loud the color of the ink and ignore the actual word. Participants took a longer amount of time to respond to inconsistently paired color word and ink color stimuli. Researchers attributed the longer response times to a longer time spent processing the information (Williams, Mathews, & MacLeod, 1996). In a modified version of the Stroop Task, individuals were presented with a list of words that were either anxiety-related or neutral. Each word was presented in different color ink. Individuals who had been diagnosed with an anxiety disorder were found to take a longer amount of time stating the color of the words that were anxiety-related. Similar results have also been found in regard to socially related words for individuals with social phobia and trauma related words for individuals who have been diagnosed with Posttraumatic Stress Disorder (Williams et al., 1996). Researchers speculate that this time response differential represents a longer period of time focusing on the content of the word (Barlow, 2002).

Anxious individuals have also been shown to have a tendency to interpret neutral stimuli as negative, or threatening. Examples include the rating of ambiguous facial expressions as being more threatening, interpreting scenarios that could be interpreted in various ways as being more negative, and being more likely to have negative judgments of ambiguous future life events (Barlow, 2002; Hartley & Phelps, 2012).

Anxiety disorders occur when one’s inability to control their anxious response results in significant distress and impairment. Anxiety disorders are estimated to affect around 18% of American adults above the age of 18. The median age of onset for
anxiety disorders is in the mid-twenties, and has been tied to a variety of problems that lead to a lower quality of life. Aspects of one’s life that are negatively affected by the presence of an anxiety disorder include interpersonal difficulties, lower educational achievement, and various medical problems. One study, conducted in the 1990’s, estimated that the annual cost of anxiety disorders in the United States was $42 billion (Kessler, Rusico, Shear, & Wittchen, 2009). In an online Harris poll, which was conducted on behalf of the APA (2014), 34% of adolescents, age 13 to 17 who were polled, believed that their stress levels would increase within the next year.

Existential psychology, rooted in philosophy, views anxiety as a logical response to human existence, in addition to the knowledge that one has about the world. Frederick Nietzsche and Soren Kierkegaard are often referred to as the predecessors of existential thought. Martin Heidegger, who was influenced by Kierkegaard’s work and Edmund Husserl’s phenomenology, introduced many topics of existential philosophy in his book Being and Time. In Being and Time, Heidegger introduced the concept of Dasein, or Being-in-the-world. (Crowell, 2010). Ludwig Binswanger and Medard Boss, two psychiatrists, drew inspiration from both Heidegger and Husserl and developed daseinanalysis (Smith, 2010). Binswanger and Boss are often viewed as bridging the gap between existential philosophy and psychotherapy (Marshall, 1989).

Very often existential psychologists and philosophers viewed a similar, yet different, part of existence to be the cause of anxiety. Paul Tillich, a theologian, saw knowledge of one’s own death, thoughts that life is meaningless, and the idea that one has not lived up to one’s moral code to be sources of anxiety (Weems, Costa, Dehon, & Berman, 2004). Rollo May, a psychologist who was highly influenced by Kierkegaard,
focused on one’s freedom, or the ability to choose within life’s natural and self-imposed limits, as being the source of existential anxiety. In May’s theory the actual ability to choose, in and of itself, is not the cause of anxiety; instead it is the knowledge that one is responsible for one’s actions and decisions (Schneider & Krug, 2010). Irvin Yalom (1980) defines existential anxiety as “a conflict that flows from the individual’s confrontation with the givens of existence” (p. 1); these givens being death, freedom, meaninglessness, and isolation. Yalom (1980) notes that these givens are separate concepts, but are closely related and interdependent. The impact that one of the givens has on an individual’s life would be extremely different if one of the four did not exist. The current study will focus on the givens of death and freedom.

Death

Yalom (1980) cites death as a major influence on one’s psychological health. The finality of life can have many different effects on an individual’s life. One could respond by experiencing death anxiety, which manifests in avoidance of situations in which one comes into contact with reminders of death (Kastenbaum, 2000). Death can also act as a catalyst, moving an individual to lead a more goal-oriented and “meaningful” life. Posttraumatic growth theory posits that facing one’s own mortality can lead to positive changes in individuals, such as a more profound appreciation of life and new life priorities (Lykins, Segerstrom, Averill, Evans, & Kemeny, 2007). Death can have a wide variety of meanings in society. Death, as a socially constructed concept, has the possibility to elicit different reactions from different people. How a person dies has an impact on how the person is viewed. For example, people speak of a “coward’s death”,
or people being heroic if they “stand up” to death. Death is viewed as unfortunate for some, and a task to be completed by others (Kastenbaum, 2000).

Death anxiety results from the existential concerns that one has about their own death or the death of another. Studies have shown that death anxiety is relatively stable over time; however, older individuals tend to report lower death anxiety when compared to those who are younger (Sliter, Sinclair, Yuan, & Mohr, 2014). Studies have also found that a fear of death is common in non-clinical populations. Higher levels of education and socioeconomic status were related to lower levels of death anxiety. Surprisingly, higher levels of religiosity and participation in religious practices were not related to lower levels of death anxiety (Furer & Walker, 2008). Some researchers claim that attitudes toward death are multidimensional. Florian and Kravetz (1983) developed a scale to measure anxiety related to one’s own death titled *Fear of Personal Death Scale*. Using factor analysis, researchers found 6 factors, loss of social identity, consequences to family and friends, transcendental consequences, self-annihilation, and punishment and the hereafter, to be associated with individual’s fear of personal death (Florian & Kravetz, 1983). Significant life events, such as the early or recent loss of a family member, have been shown to impact these 6 factors differently (Florian & Mikulincer, 1997).

There is a large difference in reactions to death in general, and one’s own death. Denial of one’s own death is not uncommon (Yalom, 1980). Yalom (1980) refers to a number of ways that people avoid thinking about their own death. Denial can occur either through the belief that one is special, belief in life after death, or living symbolically after death by leaving behind a legacy. The belief that one is special plays an important part in
how one views death. Everyone knows that other people die, but often have a very
difficult time accepting the concept of their own mortality. People have been known to
adapt an “It won’t happen to me” attitude toward the possibility of their own death. They
engage in reckless behavior, potentially fatal activities, knowing that there is potential
death, yet at the same time denying that this could really happen to them (Yalom, 1980).

Often, the incomprehensible aspect of one’s own death is concept of one’s
nonexistence. When we die the world will go on, yet we will not exist anymore (Yalom,
1980). Yalom (1980) cites cases in which many people cannot comprehend the fact that
the world will exist, but they will not. People feel angry that others will get to experience
the world, and they will be no more. The truth of the matter remains that compared to the
scope of time, one is only alive for a very small duration. To deal with the existential
anxiety that death brings about, people focus on “getting ahead, achieving, accumulating
material wealth, leaving works behind as imperishable monuments...which effectively
conceals the mortal questions churning below.” (Yalom, 1980 p. 121).

Ernest Becker (1973) viewed death, specifically the fear of one’s own death, to be
the reason the motivation behind all human activity. Becker (1973) pointed out that
humans possess a biological drive to live, along with the knowledge that they would
ultimately die. This paradox causes the organism to experience “terror” (p. 15). In line
with Yalom’s theory discussed above, Becker believed that people sought to alleviate this
terror brought on by death by adhering to a cultural worldview; one which allowed an
individual to make sense of the world as a structured place (Kastenbaum, 2000).

Adherence to this worldview serves as a buffer against the thoughts of one’s own death,
and the subsequent anxiety that these thoughts would cause. (Becker, 1973). Adhering to
a specific cultural worldview bolsters one's self-esteem. Due to a cultural worldview only offering an individual a sense of protection from the terrors of death to those who meet or live up to the individual’s cultural standards, one is motivated to defend their own worldview, while discounting those who oppose it (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

**Terror Management Theory**

Terror management theory is based on Ernest Becker’s theory that humans are uniquely aware that they are going to die. This knowledge separates humans from the rest of the animal kingdom, and in turn, causes humans a great deal of anxiety. There is a biological drive to live, but humans know that ultimately they will die (Pyszczynski, Greenberg, Solomon, & Maxfield, 2006). Terror management theory states that this knowledge has a major impact on the way that human beings go about living their lives. In order to deal with these thoughts of death, humans have developed a cultural anxiety buffer, most notably comprised of things like cultural worldview and self-esteem. In line with Becker’s previously mentioned theory, Terror management theory posits that the cultural anxiety buffer works to keep these thoughts of one’s own death out of conscious thought (Solomon, Greenberg, & Pyszczynski, 2004). An individual’s cultural worldview provides a framework for the world to be a structured place, free from anxiety related to one’s impending fatality. (Rosenblatt et al., 1989).

One’s cultural worldview is socially constructed, and by nature, susceptible to threats from new information. People often rely on a social consensus to justify their beliefs in a cultural worldview. People can be exposed to a large number of individuals who endorse a vast array of lifestyles on any given day. Each exposure to an individual
with a lifestyle that differs from one’s own is a potential threat to one’s own worldview. Based upon this idea and consistent with Becker’s theory, individuals would then be motivated to defend their own worldview and criticize cultural worldviews that opposed their own harshly. Holding this position that one’s worldview is correct and other’s are wrong allows an individual to view himself or herself as a valuable member of a structured and meaningful world, instead of a vulnerable mortal who could perish at any moment (Rosenblatt et al., 1989). Terror management research provided the first empirical evidence that fear of one’s own mortality could affect a wide variety of behaviors (Pyszczynski et al., 2006).

Early experiments on Terror Management Theory were accomplished by inducing mortality salience (Solomon et al., 2004). Mortality salience is defined as the recognition and realization of one’s own mortality (Greenberg et al., 1990). Individuals were told that they were participating in research that compared personality styles and interpersonal judgments and randomly assigned to either mortality salience or control conditions (Solomon et al., 2004). When assigned to a mortality salience condition, participants were asked to answer the following questions: “describe the emotions that the thought of their own death arouses in them” and “imagine what will happen to them physically as they die” (Hayes, Schimel, Arndt, & Faucher, 2010, p. 701). Research has shown that participants in mortality salience conditions judged people who violated the participant’s cultural norms more harshly and those who endorsed the participant’s cultural norms more positively (Rosenblatt et al., 1989; Greenberg et al., 1990). For example, Rosenblatt and colleagues (1989) found that municipal court judges who had been exposed to a mortality salience prime set higher bail for alleged prostitutes compared to
those exposed to a control condition. Another experiment in the same study provided evidence that mortality salience would lead to more favorable judgments of those who upheld one’s cultural worldview. This was evidenced by participants giving a higher reward to an individual who assisted in apprehending of a criminal. The harsh criticism was specific to those who violated the cultural norms, and not generalized ratings of other individuals, including the experimenter. Researchers attributed this criticism to be the result of negative reactions to violations of their own cultural worldview. Likewise, the positive reaction was a result of a person upholding their cultural worldview (Rosenblatt et al., 1989).

More recent research has examined the effect of mortality salience on worldview, in bicultural individuals. Evidence has been shown that individuals who were exposed to a mortality salience prime renounced their worldview when they were made to believe that such a worldview would reflect poorly on the self. Bicultural immigrants who read an article identifying the incompatibility of their two cultures, were less likely to endorse their ethnic identity, compared to those who read an article identifying the compatibility of their two cultures (Gonclaves Portelinha, Verlhiac, Meyer, & Hutchison, 2012).

Research has shown that mortality salience can be primed in a wide variety of ways. Examples of mortality salience priming include having the participant watch automobile accident footage, conducting the experiment near a funeral home, and subliminally priming for thoughts of death (Solomon et al., 2004). To answer the question of whether or not the effects were the cause of an adverse stimulus, or specific to thoughts of one’s own death, researchers compared mortality salience to a wide variety of adverse situations including public speaking, worries after college, failure, becoming
paralyzed as a result of a car crash, or physical pain. These adverse stimulus conditions failed to produce the same effects of mortality salience (Greenberg, Solomon, & Pyszczynski, 1997).

Terror management theory views self-esteem as another existential buffer. Self-esteem is the belief that one is not just an animal that is going to die, but will have a sense of purpose or value to the world. As was stated above, this is accomplished through adherence to a cultural worldview (Routledge et al., 2010). A belief that one has a purpose or a sense of meaning acts as an anxiety buffer against death-thoughts. Research has shown individuals with higher self-esteem, or who were able to bolster their self-esteem through false positive feedback, were less likely to make harsh judgments of those who violated cultural norms after being primed with mortality salience (Solomon et al., 2004). Individuals were also shown to display increased behavior that they thought to be source of self-esteem after being exposed to mortality salience. For example, participants who viewed driving ability to be relevant to one’s self-esteem engaged in more risky driving behaviors when exposed to a mortality salience condition, compared to those who did not endorse driving ability as a source of self-esteem (Taubman – Ben-Ari, Floria, & Mikulincer, 1999). Additionally, individuals were also found to be more likely to believe information about them that increased their self-esteem, for example, information from horoscopes, after being exposed to thoughts about their own death (Dechesne et al., 2003).

While Terror Management Theory has shown that mortality salience induction can lead to harsher judgments on conflicting cultural worldviews, research has also explored the cognitive basis for how mortality salience affects one’s worldview defenses.
Greenberg, Pyszczynski, Solomon, Simon, and Breus (1994) hypothesized that when faced with thoughts of one’s own death, the mind attempts to suppress these thoughts. This hypothesis was based upon Wegner’s theory of thought suppression. Wegner’s theory of thought suppression states that there is a rebound effect when individuals attempt to suppress thoughts. Wegner demonstrated this by instructing participants to verbalize their stream of consciousness while being instructed to either suppress or express thoughts of a white bear. Participants who were initially told to suppress, then express thoughts of a white bear more frequently mentioned the white bear as time passed, as measured by mentions in one-minute intervals. For those who were initially told to express, and subsequently suppress thoughts of a white bear, mentions of the white bear decreased over time (Wegner, 1987). The state in which a thought is not actively conscious, but still continues to influence conscious thoughts and behaviors is called deep activation (Wegner & Smart, 1997). Terror management researchers have provided support for the claim that mortality salience affects one’s unconscious mental processes, by providing evidence that one’s affect, as measured by the Positive Negative Affect Scale, is not negatively impacted upon mortality salience induction (Simon et al., 2007). However, some researchers have disputed this claim, citing improper measurement of participant’s affect (Lambert et al., 2014).

Terror management theory views thoughts of one’s own death as needing to be avoided, or suppressed, in order to buffer the person from the terror that accompanies the knowledge of one’s own death. In theory, after being primed for mortality salience, one would initially suppress these thoughts, but thoughts of one’s own death would become increasingly accessible as time went on (Greenberg et al., 1994). When an individual
attempts to suppress a thought, the thought is ironically activated, as demonstrated by the white bear task described above (Wegner, 1987). Attempts to suppress unwanted thoughts will result in deep activation of these unwanted thoughts (Wegner & Smart, 1997).

Terror management research has supported this hypothesis, in that mortality salience effects have been shown to be larger after a delay task. A typical delay task includes requiring the participant to complete a word search puzzle that contains only neutral words, or reading a passage that is not related to the subject matter. Additionally, death thoughts have been shown to be more accessible as time passed after the mortality salience induction (Greenberg et al., 1994).

As was stated earlier, there are a variety of ways in which mortality can be made salient. Researchers of Terror Management Theory hypothesized that because death serves as a motivational factor, death thought activation could occur as a result of very subtle, even unconscious, reminders. To test this hypothesis, participants were subliminally primed with the words “dead” or “death” or with the control word “pain”. In Terror Management Theory research, the word “pain” is often used as a control to demonstrate that the effect is a result of mortality salience, and not just a result of an aversive stimulus. Participants that were exposed to the mortality salience condition, compared to participants who were exposed to an aversive stimulus condition, were found to have increased death-thought accessibility (Arndt, Greenberg, Pyszczynski, & Solomon, 1997). Death thought accessibility was also increased by subliminally having the person view the letters “WTC” or the numbers “9/11” shortly after the World Trade
Center Bombings, and by interviewing participants in front of a funeral parlor (Landau et al., 2004).

Terror management research has shown that mortality salience can affect a wide variety of behaviors, including those of individuals with anxiety disorders. Anxiety disorders are thought by many to be unsuccessful attempts to cope with anxiety. Through the lens of Terror Management Theory, anxiety disorders may be an unsuccessful attempt to cope with existential fear (Strachan et al., 2007). To test this hypothesis, Strachen and colleagues (2007) induced mortality salience in participants who had been diagnosed with an animal phobia and obsessive-compulsive tendencies. Participants who had been assessed to have a spider phobia displayed increased avoidance and perception of a spider threat after having mortality salience induced, compared to a control group and non-phobic participants. Strachen and colleagues (2007) also found that exposing participants who displayed high and low obsessive-compulsive behaviors to a mortality salience induction resulted in both groups spending more time washing their hands. Routledge and colleagues (2010) demonstrated that mortality salience did increase the state anxiety scores on the State-Trait Anxiety Inventory of participants who were shown to have low self-esteem as a measured by scores on the Rosenberg Self-Esteem Scale. Individuals who were rated as having higher self-esteem showed no effects as a result of the induction of mortality salience.

**Freedom and Uncertainty**

As was mentioned previously, freedom is an existential given of life. On the surface, many would think of freedom as a source of psychological well-being. The more options that one has to choose amongst, the more likely it is that a person will be able to
make an optimal choice (May, 1981). Rational Choice Theory identifies the choices that individuals make as an attempt to optimize the benefits one will receive from that particular choice (Hernstein, 1990). Through the lens of Rational Choice Theory, more choices should equal more options and potential for optimal satisfaction. Statistically, the increase in the availability of choices increases the likelihood that one will be able to select an optimal choice. Additionally, one could choose not to take advantage of being able to choose, a freedom of no choice (Schwartz, 2010).

The freedom to choose among many options is not a simple issue - with freedom also comes responsibility. Since a person has the freedom to choose how to act, think, or make choices, they must also take full responsibility for these actions. Even though many things are out of a person's control, for example one's genetics or life circumstances, they are still responsible for their actions within their limitations (Rollo May, 1981; Schneider & Krug, 2010). This freedom and subsequent responsibility have tremendous implications (Maglio, Butterfield, & Borgen, 2005). People can never exactly be certain of the effect a choice is going to make. For example, an individual often decides on his or her career early on in life. A career choice has a major impact on one's life, but one can never be certain if this is the optimal choice. One choice could lead to a multitude of other options, but at the same time, thousands of other possibilities are no longer available. Due to this relinquishing of possibilities, people often express a fear of making the wrong decision. There is lack of further choice once a decision has been made. People seek to avoid the regret associated with less than optimal decisions (Schneider & Krug, 2010; Magilio et al., 2005).
Lucas (2005) describes regret as a desire to go back and change past decisions. She goes on to state that when people realize the finality of one’s choices, they tend to focus on previous choices and the inability to change them, even at the expense of future decisions that could alleviate the consequences of past choices. An example of this is the student who focuses on past procrastination and the resulting poor grades instead of focusing on getting what work they can accomplished to bring up their poor grades (Lucas, 2005). Gilovich and Medvec (1995) examined regret in individuals across the lifespan and found that a majority of people expressed regret about inaction compared to action, and that regret over inaction tends to be long lasting. More specifically, people expressed higher levels of regret about inaction related to major life decisions such as education or career. When individuals did express regret over actions or things they did, like making a purchase, the regret was short-term.

In present day, the number of choices that one is able to make is enormous. For example, today’s high school senior is faced with an ever-increasing amount of options on what to do with their life. They could choose to go to college, a technical school, enter the workforce, or join the military. For the student who wishes to attend college, they must then select which institutions to apply to. Once they have been accepted to a college or university they must then choose a major. A New York Times article reports there were over 1,500 academic programs reported to the Department of Education by colleges and universities in 2010 (Konnikova, 2013). The implications of choosing a major are far-reaching, and could influence things such as life satisfaction, where one lives, and how much money one makes (Porter & Umbach, 2006).
Even among rather constrained decisions, such as what cereal to buy, there is a broad range of options to choose from (Schwartz, 2004). In a series of experiments, Iyengar and Lepper (2000) found evidence that providing someone with more choices does not always lead to more satisfaction. In one experiment, individuals who were presented with limited options, six, were more likely to purchase a jam compared to those who were given more options, thirty. In another experiment, students were more likely to complete an extra credit assignment, and turned in better written assignments when given six potential topics, compared to students who were given thirty potential topics. In a final experiment, participants reported higher levels of regret and less satisfaction with their choice when given the possibility of choosing from thirty chocolate bars, compared to those who were allowed to choose from six chocolate bars. The authors go on to suggest that people were not simply unhappy with their choices, but were unsure and “burdened by the responsibility of distinguishing good from bad decisions” (Iyengar & Lepper, 2000, p. 1004).

Research has shown that after a choice has been made, and the decision is final, individuals are more likely to view the outcome as positive. This is true even if they did not initially indicate the specific choice as a preference (Gilbert & Ebert, 2002). Researchers demonstrated this effect by having individuals rank universities before and after they had been accepted. Once a university had rejected participants they ranked that university lower, and universities that they had been accepted to as higher (Lyubomirsky & Ross, 1999). This effect of increasing one’s satisfaction with the outcome of an event appears to be especially strong in events that have permanent outcomes. Individuals were found to be more satisfied with a poster they purchased ten days after making a choice.
when the decision was final, compared to those who were able to change their choice in poster. Authors suggest the effect was due to leaving the possibility of a better option available (Gilbert & Ebert, 2002). The ability to change one's mind is often thought of as a positive aspect of a decision (Schwartz, 2010). The above-mentioned research has shown that this may not be the case, and individuals may not be satisfied when they are left with more possible options. (Gilbert & Ebert, 2002).

Much of the research on choice and freedom has focused on minor economic issues, such as the purchasing of jars of jam or the purchase of a poster. However, many of life's decisions are much more profound, and have far greater consequences. In modern society, the number of choices, even among life's most important decisions, is increasing every day. In the past, one was often confined to the region they grew up in, or to a limited list of potential occupations. Present day allows for much more freedom in regard to potential careers and places of living (Schwartz, 2010).

**Uncertainty Management Theory**

Uncertainty Management Theory, which arose from existing research being conducted on judgments of fairness, is based upon Fairness Heuristic Theory. The Fairness Heuristic Theory states that in the absence of actual solid information, people make fairness-related judgments based upon a heuristic. This heuristic then guides an individual's interpretations of future events (Van den Bos, 2001a). The theory was developed so as to better understand why fairness is important to people. Research has shown that when people were not provided with information about whether or not an authority figure could be trusted, they displayed a greater need for procedural fairness information (Van den Bos, Wilke, Lind, & Vermunt, 1998). Procedural fairness pertains
to the process of how one is treated. For example, in a court trial, the process and manner in which the trial was conducted would be considered elements of procedural fairness (Van den Bos, Vermunt, & Wilke, 1997). When individuals were given information about whether or not an authority figure could be trusted, they did not display as large a need for procedural fairness information. In other words, if the participant was given information on whether or not the authority figure could be trusted, they did not pay as much attention to the process by which the authority figure determined the judgment (Van den Bos et al., 1998). Van den Bos and colleagues (1997) illustrated this process by manipulating the information that participants were given pertaining to a decision made by an authority figure. In the experiment, participants were given scenarios in which they were told they would be applying for a fictional job that consisted of a certain number of duties. Hiring decisions about this job were presented so that individuals were told either that performance on all duties, or a limited number of duties would be used to make the hiring decision. Participants who were told that a limited number of duties were used in the hiring decision reported more negative affective reactions toward the way they were treated compared to those who had all duties evaluated (Van den Bos et al., 1997).

Van den Bos (2001b) proposed that uncertainty played a crucial role in people’s perceptions of fairness. Previous research on the Fairness Heuristic Theory provided evidence that people relied less on procedural fairness when they had more information, or were more certain, about the authority figure. In an experiment designed to assess the effect of uncertainty salience on reactions toward procedural justice, participants were required to complete a number of tasks. After completing the tasks, the participant was informed that another individual, referred to as Other, performed exactly as well as the
participant. Then uncertainty salience or control conditions were induced. Participants were then informed they would or would not be allowed to voice how many tickets the Other should receive compared to themselves. Individuals who were exposed to an uncertainty salience prime and not allowed to voice their opinion were more likely to endorse negative affective responses, in regard to procedural fairness, compared to those who were allowed to voice their opinion, as well as those participants in the control condition (Van den Bos, 2001a).

Studies have shown that mortality and uncertainty salience produce similar effects. Studies which examined procedural fairness by manipulating one’s ability or inability to voice how many tickets another receives (in the same manner as was described in Van den Bos and colleagues (2001a) experiment above) have shown that people who were exposed to a mortality salient condition displayed a greater need for fairness information, compared to those who were exposed to a control condition (Van den Bos & Miedema, 2000).

Uncertainty Management theory posits that one’s level of uncertainty has a major impact on one’s reactions toward cultural norms. Much like Terror Management Theory, the theory proposes that belief in one’s cultural worldview, as well as the self-esteem derived from adherence to said cultural worldview, serves to reduce the anxiety that one feels when they are uncertain (Yavuz & Van den Bos, 2009). It is important to note that in these studies comparing uncertainty and mortality salience, the variables manipulated remained as close to those in previous Terror Management Theory studies as possible. For example, the uncertainty salience manipulation was induced by prompting the participant to “please briefly describe the emotions that the thought of your being
uncertain arouses in you” and “please write down, as specifically as you can, what you think physically will happen to you as you feel uncertain”, thus only replacing the word death with the word uncertain (Van den Bos, 2001b).

Some supporters of Uncertainty Management Theory have even gone as far as to say that the effect of mortality salience is due in part to the uncertainty that surrounds death. Evidence for this claim was found when examining what participants wrote when asked the salience inducing questions. Those asked to write about death sometimes wrote about the uncertainty that surrounds death, while those who were instructed to write about uncertainty never mentioned death. Furthermore, an analysis showed those who wrote down thoughts of uncertainty while in the mortality salience condition displayed stronger effects when making judgments of an essay that went against their cultural worldview (Yavuz & Van den Bos, 2009).

Other experiments comparing uncertainty and mortality salience conditions have provided conflicting results. As was mentioned above, research has provided some evidence for uncertainty salience primes producing greater effects compared to mortality salience primes (Van den Bos, 2001b; Yavuz & Van den Bos, 2009). Other studies have provided evidence that mortality salience primes have resulted in larger effects on various dependent variables. In an experiment conducted by Landau and colleagues (2004), participants were measured for personal need for structure and subsequently exposed to a mortality or uncertainty salience condition. Participants were then asked to rate their liking for an individual who was depicted as having either consistent or inconsistent personality characteristics. In the study, participants with a high personal need for structure and were subsequently exposed to a mortality salience condition reported liking
the individual with inconsistent personality characteristics less, compared to participants who were exposed to an uncertainty salience condition. Another study conducted by Routledge, Arndt, and Goldenberg (2004) compared the effects of mortality and uncertainty salience conditions on individuals’ willingness to buy suntan lotion. The researchers found that individuals who were exposed to a mortality salience prime, compared to individuals who were exposed to an uncertainty salience prime, were more likely to endorse buying sun-tanning products after viewing an ad featuring an attractive suntanned woman. These findings are in line with previous research that demonstrated individuals when exposed to a mortality salience prime will endorse activities that could be potentially harmful, if the individual views the activities as relevant to their self-esteem. The authors attributed being tan with elevating self-esteem. It should also be noted that in the study, there were no differences in the number of sun-tanning items endorsed by individuals who were exposed to a control ad featuring a beach ball (Routledge et al., 2004).

One important aspect to consider is that the studies that have found uncertainty salience to produce stronger effects compared to mortality salience were conducted in the Netherlands. Studies that have found the opposite to be true have been conducted using individuals in the United States; therefore, a cultural confound could be present (Van den Bos & Lind, 2010; Pyszczynski et al., 2006). Researchers have also noted that the wide variety of variables being measured could account for the difference in mortality and uncertainty salience effects. For example, studies examining the effects of uncertainty and mortality salience on procedural fairness have found that uncertainty salience produces larger effects. In contrast, studies examining the effects of uncertainty and
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mortality salience on cultural worldview defense have found mortality salience to produce larger effects (Pyszczynski et al., 2006).

Van den Bos and Lind (2010) proposed that perhaps mortality and uncertainty are two of many possible existential motives behind behavior, and different experimental methods and measurements of different dependent variables will be needed to uncover the potential effects of both mortality and uncertainty. Van den Bos (2009) proposes a “hypothesis that personal uncertainty may be a very important motive underlying process of self-regulation, meaning-making, and especially worldview defense” (p. 256).

Present Study

The present research examines the effects of mortality salience and uncertainty salience on state anxiety. Prior research conducted on mortality and uncertainty salience has provided mixed results, with either mortality or uncertainty salience eliciting stronger effects (Pyszczynski et al., 2006; Yavuz & Van den Bos 2009; Routledge et al., 2004). Experiments have looked at the effect of either uncertainty or mortality salience against a control condition on social judgments, fairness judgments, or negative affect. Few studies have been conducted that focus on the effects of mortality or uncertainty salience on emotional states (Strachen et al., 2007). The present study attempts to explore the relationship between mortality salience and uncertainty salience on one’s state anxiety based upon participant’s levels of self-esteem.

Based upon previous research, it is hypothesized that both mortality and uncertainty salience conditions will result in higher levels of state anxiety in individuals with low self-esteem. Additionally, previous research suggests individuals assigned to the mortality salience condition sometimes indicated they were thinking about the
uncertainty that surrounds death. Based upon these findings, and the high prevalence of uncertainty in the target population’s life, the uncertainty salience condition will yield higher levels of state anxiety compared to the mortality salience condition.

Method

Participants

One hundred and seventeen undergraduate Introductory Psychology students (42 males, 75 females) participated in exchange for course credit in a study described as examining the relationship between personality characteristics. Four participant’s responses were not included in the analysis due to not answering all of the questions or only circling an answer of one. After giving informed consent, participants were given a packet of materials and told to complete a number of tasks. Participants were given instructions to answer the questions to the best of their ability, complete the packet in order, and not to go back and change answers after they had completed a page. Materials were presented in the following order.

Materials

Rosenberg Self-Esteem Scale. Participants filled out the Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale is a self-report measure of one-dimensional self-esteem (Rosenberg, 1965). Participants are required to endorse statements based upon how the statement reflects one’s self. The scale is constructed such that higher scores indicate higher levels of self-esteem. The scale consists of ten items, which are answered in a Likert-scale form from 1 (Strongly Disagree) to 5 (Strongly Agree). Items are both positively and negatively oriented. Negatively oriented items were reversed.
scored. The ten items were averaged to give a single measure. Examples of positively
questions include “On the whole, I am satisfied with myself.” Examples of negatively
oriented questions include “At times I think I am no good at all” (Rosenberg, 1965).

**Experimental Condition.** The experimental salience condition was then
implemented. Participants were randomly assigned to either a mortality salience,
uncertainty salience, or control condition. In the mortality salience condition,
participants were asked to “please briefly describe the emotions that the thought of your
own death arouses in you” and “please write down, as specifically as you can, what you
think physically will happen to you as you die.” In the uncertainty condition the same
questions were asked, with “your own death” replaced with “feeling uncertain” in the
first question. In the second question “feel uncertain” replaced “die”. In the control
condition, participants were asked the same question with “watching television”
replacing “your own death” in the first question, and “watch television” replacing “die”
in the second question. Watching television served as a neutral task, and has been
utilized as a control condition in previous Terror and Uncertainty Management research.
Participants were then asked to complete a word search puzzle that contained neutral
words. As with previous research in Terror Management Theory, this served as a delay
task. The delay task lasted approximately 2.5 to 3 minutes.

**State-Trait Anxiety Inventory.** Participants were then administered the STAI –
Y1 Form (state scale) of the State-Trait Anxiety Inventory, which served as the
dependent variable. The State-Trait Anxiety Inventory is a self-report of both current
anxiety in the moment and as a personality trait. For the purposes of this study, only
participant’s state anxiety was examined (Spielberger, 1983). The STAI – Y1 Form
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consists of twenty statements that could reflect how a person feels in the current moment. The questions are written at a sixth grade reading level. Participants are required to rate their anxiety on a four point Likert scale from 1 (Not at All) to 4 (Very Much So). The scores of the STAI – Y1 Form have been shown to increase when individuals are faced with a stressful event, such as a job interview or upcoming test, and decrease when relaxation techniques are implemented (Spielberger, 1983).

Internal consistency for the STAI – Y1 were high ($\alpha = .90$) for groups of working adults, high-school students, and military recruits. Test-retest reliability was less consistent, .16 to .65, but this was to be expected, as the measure can be influenced by one’s current mood. To assess the content validity of the STAI, researchers compared the scores of participants who were told to respond according to how they thought they would feel before taking an important exam and participants in a non-stressful condition. Participants who where told to answer as if they were about to take an important exam scored significantly higher (Spielberger, 1983).

**Results**

In order to test the first hypothesis, that both mortality and uncertainty salience increases state anxiety at low, but not high, levels of self esteem, a hierarchical multiple regression analysis was conducted. In the first step, the main effects of salience (mortality, uncertainty, control) conditions were entered (dummy coded). Results show that the main effects of salience condition accounted for 6% of the variance in state anxiety scores, $F(2,114) = 3.42, p = .04$.

State anxiety scores for participants in the uncertainty salience group ($M = 1.87, SD = .48$) were significantly higher than those in a control group ($M = 1.62, SD = .43$), $b$
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= .26, $SE = .10, t = 2.46, p < .025$, when taking into account a Bonferroni correction.

Furthermore, results indicate that participants in the mortality salience condition ($M = 1.82, SD = .46$) were trending toward having higher levels of state anxiety compared to participants in the control condition, but were not significant with a Bonferroni correction, $b = .20, SE = .10, t = 1.95, p > .025$

In the second step, self-esteem scores were added to determine if self-esteem to examine the main effect of self-esteem. The results indicate a significant main effect of self-esteem, $R^2$ change = .34, $F(1,113) = 62.31, p < .001$, such that higher levels of self-esteem resulted in lower levels of state anxiety. Furthermore, self-esteem accounted for 34% of the variance in state anxiety scores, $p < .001$.

In the third step, the two-way interaction terms were entered. Results indicated that there were no significant interactions, $R^2$ change = .01, $F(2,111) = 1.30, p > .05$. A summary of the results of the multiple regression analysis is found in Figure 2.

Discussion

The results of the current study add to the literature on terror management and uncertainty management theory. In line with previous terror management and uncertainty management research, both mortality salience and uncertainty salience were shown to have an effect on participants, compared to the control condition (Van den Bos, 2001b; Yavuz & Van den Bos, 2009). While results indicated that the state anxiety scores of participants in the mortality salience group did not significantly differ from those of the control condition when taking into account a Bonferroni correction ($p > .025$), state anxiety levels were trending toward a significant result (see Figure 3).
Previous research has provided mixed results, with mortality or uncertainty salience producing larger effects in different studies (Yavuz & Van den Bos 2009; Pyszczynski et al., 2006; Routledge et al., 2004; Van den Bos, 2001b). One possible explanation of the effect of uncertainty salience found in this study is that mortality and uncertainty salience affect state anxiety differently than the dependent variables examined in past studies (e.g. worldview judgments, fairness judgments). Van den Bos and Lind (2010) proposed a similar hypothesis, suggesting that mortality or uncertainty salience may result in larger or smaller effects depending upon what dependent variable is measured. Future research that examines the effect of both mortality and uncertainty salience on various dependent variables would provide more information in regard to what processes are affected by different existential motivators.

In line with previous research, results indicate a significant main effect of self-esteem, such that higher levels of self-esteem resulted in lower levels of state anxiety (Routledge et al, 2010). These findings support terror and uncertainty management’s claim that self-esteem serves as a buffer to distressing thoughts of mortality and uncertainty. Furthermore, self-esteem was by far the best predictor of state anxiety scores, more so than the salience manipulations.

The lack of a significant two-way interaction between salience condition and level of self-esteem is inconsistent with previous terror management research. As Figure 3 shows, there is an obvious trend, with participants with lower self-esteem experiencing more state anxiety, compared to those with high self-esteem, across all salience conditions. Previous terror management research has found that individuals in control conditions, regardless of self-esteem level, did not evidence an increase in state anxiety
scores (Routledge et al., 2010). The increase in state anxiety scores found for individuals in the control condition with lower self-esteem is a possible explanation for the lack of significant two-way interactions.

One should note that the group of participants, as a whole, was relatively young ($M = 19.41$ years old, $SD = 1.23$). Thoughts of death might not be as accessible or applicable to the participant’s lives, where as thoughts of uncertainty are very likely present and applicable to nearly all individuals. Formal content analysis was not performed on participant responses, however, many participants in the uncertainty salience condition mentioned aspects of their life that they were currently uncertain about (e.g. grades, life choices, relationships). In contrast, participants in the mortality salience condition tended to only mention discomfort with thinking about their own mortality or their belief in an afterlife (e.g. heaven, eternal life, etc.). Terror management theory states that one is motivated to deny one’s own mortality. Denying uncertainty is more difficult, and therefore might result in a larger effect on state anxiety. Formal content analysis in future research would allow for an examination of specific responses that might be causing state anxiety levels to rise.

The limitations of this study should be noted. As was mentioned above, this study lacked any formal content analysis of the responses. Uncertainty management research has shown that the content of participant responses to the salience inducing questions can affect the dependent variable, such that responses to the mortality salience questions that mentioned the uncertainty surrounding death resulted in stronger effects. Another limitation of the current study was the lack of affect measurement. A number of studies have repeatedly demonstrated that mortality salience manipulation does not result in
negative affect, as measured by the Positive and Negative Affect Schedule (PANAS), however these claims have recently been disputed in the literature (Lambert et al., 2014). Given recent claims that previous attempts to measure affect by using the PANAS have been susceptible to measurement error, future research would benefit from examining participants positive and negative affect after the mortality and uncertainty salience have been induced. Furthermore, the time of the delay task was approximated. Research has shown that measuring the dependent variable too soon after inducing mortality salience can result in not having as strong an effect on dependent variables. While the delay task that was selected for this study has been used in previous terror and uncertainty management research, no exact measure of the length of the delay task was taken. Therefore, it is possible that this affected the outcome of the study. Future research would benefit from an exact measure of time to completion of the delay task.

In summary, the present study demonstrated both mortality salience and uncertainty salience increased state anxiety. Results indicate existential concerns can be heightened by fairly simple references to mortality and uncertainty. The relatively innocuous directive to simply think about the emotions that “death” or “feeling uncertain” arouses in individuals was able to produce a substantial effect on one’s state anxiety. The observed effect demonstrates the relevance of existential concerns in the lives of relatively young individuals.
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References


EFFECTS OF EXISTENTIAL SALIENCE


Table 1

State anxiety scores for mortality salience, uncertainty salience, and control conditions (N = 117)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Salience</td>
<td>1.82</td>
<td>.46</td>
</tr>
<tr>
<td>Uncertainty Salience</td>
<td>1.88</td>
<td>.48</td>
</tr>
<tr>
<td>Control</td>
<td>1.62</td>
<td>.43</td>
</tr>
</tbody>
</table>
Table 2

*Multiple regression analysis for variables predicting state anxiety score (N = 117)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality vs. Control</td>
<td>.20</td>
<td>.10</td>
<td>.20</td>
</tr>
<tr>
<td>Uncertainty vs. Control</td>
<td>.26</td>
<td>.10</td>
<td>.26*</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morality vs. Control</td>
<td>.12</td>
<td>.08</td>
<td>.13</td>
</tr>
<tr>
<td>Uncertainty vs. Control</td>
<td>.18</td>
<td>.08</td>
<td>.18</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>-.57</td>
<td>.07</td>
<td>-.58**</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality vs. Control</td>
<td>.92</td>
<td>.60</td>
<td>.94</td>
</tr>
<tr>
<td>Uncertainty vs. Control</td>
<td>.94</td>
<td>.54</td>
<td>.94</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.42</td>
<td>.12</td>
<td>-.43**</td>
</tr>
<tr>
<td>Morality vs. Control x Self-Esteem</td>
<td>-.25</td>
<td>.18</td>
<td>-.80</td>
</tr>
<tr>
<td>Uncertainty vs. Control x Self-Esteem</td>
<td>-.23</td>
<td>.17</td>
<td>-.75</td>
</tr>
</tbody>
</table>

Step 2 $R^2$ change = .34
Step 3 $R^2$ change = .01

*p < .05

**p < .01
Figure 1

*Predicted state anxiety scores for mortality, uncertainty, and control conditions for low self-esteem (-1 standard deviation) and high self-esteem (+1 standard deviation)*
Appendix A

Rosenberg Self-Esteem Scale

Please circle the number that best represents your answer.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On the whole, I am satisfied with myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. At times I think I am no good at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I feel that I have a number of good qualities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I certainly feel useless at times</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I feel that I am a person of worth, at least on an equal plane with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. All In all, I am inclined to feel that I am a failure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I take a positive attitude toward myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix B

Mortality Salience Prime

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

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Please write down, as specifically as you can, what you think physically will happen to you when you die.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix C

Uncertainty Salience Manipulation

Please briefly describe the emotions that the thought of feeling uncertain arouses in you.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Please write down, as specifically as you can, what you think physically will happen to you when you feel uncertain.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix D

Control Manipulation

Please briefly describe the emotions that the thought of watching television arouses in you

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Please write down, as specifically as you can, what you think physically will happen to you when you watch television.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Appendix E

Word Search Delay Task

Word Search Puzzle

Circle as many words as you can in the puzzle below.

<table>
<thead>
<tr>
<th>Book</th>
<th>Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desk</td>
<td>Phone</td>
</tr>
<tr>
<td>Movie</td>
<td>Train</td>
</tr>
<tr>
<td>Paper</td>
<td>School</td>
</tr>
<tr>
<td>Grass</td>
<td>Beer</td>
</tr>
<tr>
<td>Music</td>
<td>Actor</td>
</tr>
</tbody>
</table>

S R E T U P M O C O
W P H O N E R E E B
A M U S I C P Z S N
B T N R O T C A S K
B M R K S E D E A O
R F O A G O L B R O
E L G V I Z B O G B
P A N U I N E L W Q
A G T A B E T G D O
P S C H O O L N I T
Appendix F

State-Trait Anxiety Inventory Form Y

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately so</th>
<th>Very Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel calm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel secure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel strained</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel at ease</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: Due to copyright issues, only five (out of 20) items on the State-Trait Anxiety Inventory can be reproduced.