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THE EFFECT OF PRIMING DEATH ANXIETY ON
FUTURE TIME ORIENTATION AND PROCRASTINATION

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DEDICATION

I dedicate this thesis to my parents, Ken and Yvonne Deyling, who have supported me in every possible way. I could not have become the person I am today without their love, patience, and encouragement. Thank you Mom and Dad...I love you both more than words can say.

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ABSTRACT

The purpose of this study was to investigate the relationship between death anxiety and future time orientation among procrastinators. Eighty-five students from Cleveland State University participated in the experiment. Participants first completed the Aitken Procrastination Inventory then one of three questionnaires (Revised Death Anxiety Scale, Taylor Manifest Anxiety Scale, or control), depending on the randomly assigned condition. Then all participants completed the Future Time Orientation Scale, a manipulation check, a goal exercise, and a demographic questionnaire. An exit questionnaire, used as a behavioral assessment of procrastination, was handed out at the end of the experiment. The results showed that future time orientation scores varied significantly with procrastination level ($p = .001$); however, the hypothesized interaction between procrastination level and experimental group was not significant. When extreme procrastination and non-procrastination scores were analyzed, the interaction between extreme procrastination level and experimental group showed a trend towards significance ($p = .061$). Additional analyses showed a significant negative correlation between future time orientation and procrastination ($p < .001$). Priming for death anxiety did not significantly increase future time orientation scores for procrastinators. Reasons for this result are discussed, as well as areas for future research.

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CHAPTER I

INTRODUCTION

Procrastination involves knowing that one is supposed to complete a task or activity, yet failing to motivate oneself to perform the task or activity within the desired or required time frame (Senécal, Koestner, & Vallerand, 1995). Academic procrastination is defined as the “tendency to (a) always or nearly always put off academic tasks, and (b) always or nearly always experience problematic anxiety associated with this procrastination” (Rothblum, Solomon, & Murahami, 1986, p. 387). This literature review examines both types of procrastination, focusing on academic procrastination.

In a study by Schraw, Wadkins, and Olafson (2007), individuals reported that they procrastinated for adaptive reasons and rarely felt procrastination had a negative impact on learning. However, procrastination has potentially damaging consequences for the individual and can cause underperformance on tasks (Dewitte & Schouwenberg, 2002). Additionally, procrastination produces stress and may have adverse effects on health and feelings of well-being (Schraw et al., 2007).

With the negative effects caused by procrastination, it is surprising the high incidence among students and adults. In a study by Solomon and Rothblum (1984, as cited in McCown, Petzel, & Rupert, 1987), approximately 50% of university students

surveyed reported problems with procrastination. Approximately 25% of those students believed that procrastination significantly interfered with their academic standing, ability to master classroom material, and the quality of their lives. Moreover, a significant negative correlation has been found between self-reported procrastination and grade point average, indicating that procrastination is related to poorer academic performance (Rothblum et al., 1986).

Blatt and Quinlan (1967) reported that punctuality and procrastination are highly stable and enduring character traits. In general, procrastinators show a lack of confidence, have anxiety, and have feelings of guilt and inferiority (Wessman, 1973). Among student procrastinators, approximately 40% reported procrastinating on exams to the point of experiencing considerable anxiety (Rothblum, Solomon, & Murahami, 1986). Aitken (1982, as cited in McCown et al., 1987) found that impulsivity, outgoingness, and anxiety are common personality characteristics of chronic procrastinators. Solomon and Rothblum (1984, as cited in Rothblum et al., 1986) found significant positive correlations between procrastination and clinical factors, including depression and trait anxiety, and a negative correlation between procrastination and self-esteem. As a whole, procrastinators tend to have more maladaptive behavior patterns and personality traits than non-procrastinators (Specter & Ferrari, 2000).

Senécal et al. (1995) advised that “anxiety, depression, and low self-esteem can be conceptualized as personality factors reflective of fear of failure” (p. 609). In fact, fear of failure and task aversiveness are two main factors as to why students procrastinate (Solomon & Rothblum, 1984, as cited in Rothblum et al., 1986). Other factors include intrinsic versus extrinsic reasons for goal attainment. A study by Rothblum et al. (1986)

showed that high procrastinators are more likely to attribute success to external and fleeting circumstances than low procrastinators. Similarly, Senécal et al. (1995) found that students who had intrinsic reasons for studying were less likely to procrastinate, while students who had extrinsic reasons were more likely to procrastinate.

Future time orientation

Another possible reason individuals procrastinate involves time: time management, time perspective, and time orientation. Past research has found that procrastination is related to failing to allocate enough time for task completion (McCown et al., 1987). Additionally, Vodanovich and Seib (1997) found a high negative correlation between procrastination and structure, subjectively meaningful time use.

According to Blatt and Quinlan (1967), “attitudes towards time and the use and experience of time, such as the relative capacity for delay, anticipation, and planning, are basic features of general modes of adaptation or character style” (p.169). Time perspective refers to the processes used in dealing with temporally relevant information, whereas temporal orientation involves “a behavioral predisposition to be more likely influenced by thoughts, emotions, and motivations for a distinct region of time” (Lasane & O’Donnell, 2005). For the purposes of this review, time orientation and time perspective are used interchangeably, which is common within the time literature.

The tendency to emphasize a particular temporal frame is a relatively stable trait; therefore, there is also a tendency to develop a consistent temporal bias (McGrath & Tschan, 2004). Some individuals tend to be more past-oriented, more present oriented, or more future-oriented.

Gjesme (1983, as cited in Martz & Livneh, 2003) defined future time orientation as the extent of involvement with the future, which includes thoughts or actions. It is related to the cognitive enhancement of needs in plans, intentions, and tasks which have either more or less complex temporal structure (Gjesme, 1979). Future time perspective consists of two aspects (DeVolder & Lens, 1982). The first is the dynamic aspect of future time perspective, where attention is given to goals in the distant future. The second is the cognitive aspect of future time perspective, where the long-term consequences of behavior are understood.

According to Martz and Livneh (2003), “future time orientation is modified by personal reasons or motivations that individuals have for maintaining specific orientations” (p. 1025). Future time orientation increases with age beyond adolescence but then decreases for elderly individuals (McGrath & Tschan, 2004). Degree of future orientation can be influenced by social and life situations. In general, most Western industrialized societies are regarded as future oriented due to the strong cultural emphasis on a conceivable and controllable future (McGrath & Tschan, 2004).

Research has shown that there are trait and personality differences between individuals with a present time orientation and individuals with a future time orientation. McGrath and Tschan (2004) assert that “in general, people with higher scores on future orientation exhibit more considered behavior, whereas people with higher present orientation scores tend to engage in more risky and unhealthy behaviors” (p. 42). Lasane and Jones (2000) suggest that present-oriented individuals derive enjoyment from present activities, are more sociable, and are cognitively focused on the present. In contrast,

future-oriented individuals set subgoals to help attainment of a larger goal, are persistent in academic work, and are cognitively focused on future activities.

An extensive amount of research has investigated time orientation and academic achievement. Teahan (1958) found that achievers would have a more predominant and extensive future time perspective than did low achievers. Teahan concluded that low achievers have a short-range future orientation, while high achievers have a longer-range orientation. DeVolder and Lens (1982) found that when students give higher attention to goals in the future and when the long-term consequences of studying hard to reach a goal are understood, they are more persistent in studying and obtain better academic results. Lasane, Jones, and Loebe (1999, as cited in Lasane & Jones, 2000) noted that present-oriented students and future-oriented students do not differ in the value they place on long-term achievement goals but differ in the goal-setting behaviors that lead to achievement.

In general, the research suggests that future-time oriented individuals focus more on future goals, are more persistent in academic work, and are higher achievers than past- or present-oriented individuals.

Procrastination and Future Time Orientation

Since researchers observed a connection between time orientation and academic achievement, it is not surprising that time orientation and procrastination has also been examined.

A study conducted by Specter and Ferrari (2000) assessed temporal orientation in chronic procrastinators compared to non-procrastinators. Participants completed a scale that assessed the tendency to put off decisions and another scale that assessed behavioral

tendency to delay tasks. Additionally, participants completed a temporal orientation scale.

The results showed that decisional and avoidant procrastination tendencies were significantly related. Additionally, both procrastination tendencies were significantly positively related to past orientation and negatively related to future orientation. The researchers reasoned that individuals with either decisional or behavioral procrastination tendencies report focusing more on the past and less on the future. In conclusion, procrastination in making decisions and delaying beginning or finishing tasks was negatively correlated to future-time orientation, positively correlated to past-time orientation, and not correlated to present-time orientation.

In a two part study by Jackson, Fritch, Nagasaka, and Pope (2003), the association between procrastination and time orientation were examined. In study one, the contribution of past, present, and future time orientation on the prediction of trait procrastination was assessed. Participants were given a procrastination scale as well as a time perspective inventory. The results found that higher levels of procrastination were negatively associated with future time orientation. Additionally, procrastination was associated with contemplation and regrets about the past and acceptance about the present.

In study two, the associations between procrastination and time orientation were assessed after controlling for negative affect. Additionally, the extent to which individuals viewed their time as structured and purposeful was assessed. Participants were given a procrastination scale, time perspective inventory, positive and negative affect scales, and a time structure questionnaire. The results showed, after controlling for

negative affect, “trait procrastination was associated with relatively more negative perceptions of one’s past, higher levels of fatalism in one’s present life, and a reduced focus on one’s future...” (p. 23-24). Additionally, procrastinators had difficulties structuring their time and viewed their use of time as less meaningful.

From these two studies, Jackson et al. (2003) concluded that procrastinators’

relatively more negative views of the past and fatalistic attitudes about the present suggest that chronic procrastinators inhibit goal-directed behaviors, in part, because past and more recent actions had been followed by aversive consequences. Such experiences may also foster expectations of negative consequences for future behaviors, thus perpetuating an avoidance of future goal-setting and the tendency to procrastinate (p. 26).

In a study conducted by Lasane and Jones (2000), students were selected on the basis of their extreme present-time orientation or future-time orientation. They were then given the Choices Questionnaire, which measures the degree to which students engage in academic procrastination. The Choices Questionnaire uses vignettes that involve situations with high social content but no relevance to academic goal-setting versus events with low social content but high relevance to academic goal-setting. The results confirmed that present-time orientated students had a significantly higher level of academic procrastination across all the vignettes. The researchers concluded that “not only, FuTOs engage in less academic procrastination than PrTOs, but they report that goal factors are the most important influences on their decision-making with significantly greater frequency than PrTOs” (p. 83).

In review, the research suggests that procrastination is positively related to past-time orientation and negatively related to future-time orientation. Additionally, procrastinators have negative views of the past, a fatalistic view of the present, and a reduced focus on the future.

Death Anxiety

One possible reason procrastinators have a reduced focus on the future is because the future involves the possibility of death. Focusing on the future or the possibility of death can cause death anxiety. Death anxiety is the awareness of not being or existing, also called the threat of death (Martz & Livneh, 2003).

Initially, it would seem that death anxiety and procrastination involve conflicting views about death. With death anxiety, time appears to be contracting while with procrastination, a task is seen as time-consuming. However, death anxiety and procrastination “share the similarity of judging future time to be unsatisfactorily short” (Donovan, 1995, p. 468). According to Donovan (1995), individuals who are high in death anxiety should have difficulty completing tasks in a timely manner. “This lack of motivation, in other words, which has its roots in unrepressed awareness of personal death, could reveal itself behaviorally as chronic procrastination” (p. 467).

In a study by Donovan (1995), the relationship between procrastination and death anxiety was investigated. Participants completed a death anxiety scale, as well as a procrastination scale. The results found a weak but significant correlation was found between the Death Anxiety Scale and procrastination. Specifically, procrastinators scored higher on the DAS than non-procrastinators. This implies that death anxiety is related to procrastination, insomuch as procrastinators’ death anxiety possibly could impede completion of tasks or setting of goals.

Future Time Orientation and Death Anxiety

There is also a connection between time orientation and death anxiety. Dickstein and Blatt (1966) advised that “it is only when we become aware of the passage of time

that we appreciate the temporal limits of our lives” (p. 13). However, an individual might be temporally limited by the anticipation of his/her death (Wohlford, 1966). Specifically, one might not want to consider what will happen in the future, which limits his/her time orientation. Martz and Livneh (2003) advised that “a truncated or foreshortened sense of the future acts as a defense mechanism against death anxiety, since the future inevitably will include one’s eventual death” (p. 1026).

Limited research has been conducted looking at the relationship between death and time orientation. Dickstein and Blatt (1966) found that a heightened death concern is related to a diminished time perspective. Specifically, individuals who are highly concerned with death “seem to live more in the present than in the future” (p. 15). They advised that a limited view of the future acts as a defense mechanism against death anxiety.

Additionally, Wohlford (1966) found that negative affect diminished the frequency of cognitions concerning the future and increased the frequency of cognitions concerning the past. Martz and Livneh (2003) studied death anxiety as a predictor of future time orientation among individuals with spinal cord injuries. They found that being fearful of one’s own death is directly related to a foreshortened sense of the future.

One research study investigated the connection between time orientation, procrastination and death anxiety. Research conducted by Blatt and Quinlan (1967) found that students who were punctual (also called ‘Early Volunteers’) had less preoccupation with death and had a higher future time perspective as compared to ‘Late Volunteers.’ The significantly higher death-concern scores of student procrastinators supported a relationship between death concern and time perspective. From these results, the

researchers concluded that procrastination is an attempt to avoid unconscious death anxiety. “By being continually late, the procrastinator is expressing rebellion at the finality of his or her existence. Individuals with more death anxiety, Blatt and Quinlan argue, need this psychic ventilation more frequently” (McCown, Petzel, & Rupert, 1987, p. 781).

In review, the research suggests that a concern or anxiety about death causes a foreshortened view of the future. Procrastinators have higher death anxiety which relates to a reduced view of time.

Death Anxiety and Mortality Salience

Death anxiety is related to mortality salience, a term commonly found within terror-management theory literature (e.g., Pyszczynski, Greenberg, & Solomon, 1997). Being aware of one’s own mortality (mortality salience) can cause death anxiety. The mortality salience hypothesis states “that if a psychological structure provides protection against anxiety, then reminding people of the source of this anxiety should increase the need for that structure” (Pyszczynski et al., 1997, p. 3). In other words the structure of goals and not procrastinating on achieving those goals guards against anxiety. Reminding people of procrastination and death (through death anxiety) should increase the need for structure and should increase future time orientation.

The present study

The purpose of this study was to look at the relationship between mortality salience (using death anxiety) and future time orientation among procrastinators. It was hypothesized that increasing mortality salience will increase the future time orientation of procrastinators. Specifically, inducing procrastinators to focus on death would increase

mortality salience. This salience of death produces a focus on the future in general. Focusing on the future should aid procrastinators in setting reasonable goals and accomplishing those goals. Therefore, in general, increasing mortality salience should decrease procrastination.

To control for the anxiety caused by mortality salience, this study had two experimental conditions (death anxiety and anxiety) and one control group. It was hypothesized that death anxiety would have a significant affect on future time orientation, whereas general anxiety would have a lesser affect.

In general, it was hypothesized that priming, either death anxiety or general anxiety, would not affect non-procrastinators. They were anticipated to have a high future-time orientation score, regardless of the prime.

CHAPTER II

METHOD

Participants

Eighty-five students (34 males and 51 females; mean age = 22.21) at Cleveland State University participated in this research for course credit. All testing occurred in one session and took participants approximately 40 minutes to complete. 7 participants were excluded because of missing data. Therefore, 78 participants were used in the analyses: 27 in the death anxiety group, 26 in the anxiety group, and 25 in the control group.

Instruments/Questionnaires

The Aitken Procrastination Inventory (API: 1982, as cited in Ferrari, Johnson, & McCown, 1995) was developed to distinguish chronic procrastinators from non-procrastinators. The coefficient alpha is .82 and the one month test/retest reliability is .71. The scoring for the API was revised so that the 19 items are rated on a 5-point scale from *Strongly Disagree* (1) to *Strongly Agree* (5) (see Appendix A for scale questions).

The Revised Death Anxiety Scale (RDAS: Thorson & Powell, 1994) was developed to discriminate low death anxious individuals from high death anxious individuals. This scale was used as an experimental condition to prime death anxiety. The Cronbach alpha of reliability is .83. The scoring for the RDAS was revised so that the 24

items are rated on a 5-point scale from *Strongly Disagree* (0) to *Strongly Agree* (4) (see Appendix B for scale questions).

The Taylor Manifest Anxiety Scale (TMAS: Taylor, 1953) was used as another experimental condition to prime general anxiety. A high score indicates high anxiety. The test-retest coefficient at four weeks is .88. The questionnaire consists of 20 items. The scoring for the TMAS was revised so that the items are rated on a 5-points scale from *Strongly Agree* (1) to *Strongly Disagree* (5) (see Appendix C for questionnaire).

A Love of Food questionnaire was developed to be used as a control condition. The questionnaire consists of 20-items rated along a 5-point scale from *Strongly Agree* (1) to *Strongly Disagree* (5) (see Appendix D for questionnaire).

The extended Future Time Orientation Scale (FTOS: Gjesme, 1979) was used to assess the degree of concern, engagement, and involvement in the future. The coefficient alpha is .62. The FTOS consists of 14 items rated on a revised four-point scale from *Strongly Disagree* (1) to *Strongly Agree* (4) (see Appendix E for scale questions).

As to way to check the manipulation, two questions were presented: how anxious are you at this moment and how anxious about death are you at this moment. The items were rated along a 5-point scale from Not Anxious at All (1) to Extremely Anxious (5). This manipulation check was given to all three groups (see Appendix F).

A goal exercise was handed out in order to lower anxiety caused by the priming. Participants wrote out short term goals and the steps to achieve the goals (see Appendix G for exercise).

A demographic questionnaire was included in order to obtain some basic information. Additionally, the questionnaire included four questions pertaining to personality traits (see Appendix H for questionnaire).

An exit questionnaire was used as a behavioral assessment of procrastination. The participants were asked to fill out the questionnaire and send it back (see Appendix I for exit questionnaire). The length of time it took the participants to return to the questionnaire was noted, with the participants given a maximum of two weeks to return the questionnaire.

Procedure

The experiment occurred within a controlled setting at Cleveland State University. Participants were tested in groups no larger than 20 individuals. After giving their consent, participants were handed a packet of scale material to be completed. The participants were randomly assigned to one of the three conditions: death anxiety priming, anxiety priming, or neutral priming.

The participants first completed the Aitken Procrastination Scale. After the procrastination scale was finished, the participants completed one of three condition scales. In the death anxiety priming condition, individuals completed the Revised Death Anxiety Scale. For the anxiety priming condition, individuals completed the Taylor Manifest Anxiety Scale. The individuals in the neutral priming condition completed the Love of Food Questionnaire.

After the priming condition, the participants completed the Future Time Orientation Scale, the manipulation check, the goal exercise and the demographic questionnaire. At the end of the experiment, the participants were given the exit

questionnaire and the directions were explained. The importance of sending the questionnaire back was stressed. The subjects were not fully debriefed due to the exit questionnaire. Instead, the participants were asked to contact the experimenter with any questions or concerns. The contact information was at the bottom of the exit questionnaire.

CHAPTER III

RESULTS

An alpha level of .05 was used for all statistical tests. Prior to analysis, a median split of procrastination scores was performed, thereby making two groups, low procrastinators (procrastination score of 31-50) with 41 participants (48.2%) and high procrastinators (procrastination score of 51-72) with 39 participants (39%).

A two-way, between subjects analysis of variance was then performed on future time orientation scores. The independent variables were procrastination score (high and low) and experimental group (death anxiety, anxiety, and control). The results, presented in Tables 1 and 2, showed that future time orientation scores varied significantly with procrastination level, with $F(1,72) = 11.878, p = .001$. However, there was no statistically significant main effect of experimental group ($F(2,72) = .209, p > .05$). Additionally, the interaction between procrastination level and experimental group was not significant ($F(2,72) = 1.952, p > .05$)

In order to assess whether extreme procrastinators and non-procrastinators would vary significantly on future time orientation, procrastination scores were separated into two groups: Extreme non-procrastinators (scores 31-46) with 30 participants and extreme procrastinators (scores 55-72) with 30 participants.

TABLE 1

Mean Future Time Orientation Scores and Number of Participants

ProcrastRecode Group	Experimental Group	Mean	SD	N
1	Death	39.18	3.683	11
	Anxiety	41.40	5.248	15
	Control	42.15	3.051	13
	Total	41.03	4.258	39
2	Death	38.50	4.050	16
	Anxiety	36.73	4.860	11
	Control	37.08	5.071	12
	Total	37.56	4.558	39
Total	Death	38.78	3.846	27
	Anxiety	39.42	5.515	26
	Control	39.72	4.809	25
	Total	39.29	4.716	78

TABLE 2

Two-Way ANOVA on Future Time Orientation Scores with Median Split of Procrastination Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	314.191	5	62.838	3.236	.011	.183
Intercept	117236.656	1	117236.656	6037.822	.00	.988
ProcrastRecode	230.629	1	230.629	11.878	.001	.142
Group	8.134	2	4.067	.209	.812	.006
ProcrastRecode*Group	75.823	2	37.912	1.952	.149	.051
Error	1398.027	72	19.417			
Total	122151.000	78				
Corrected Total	1712.218	77				

A 2-way analysis of variance was again performed on future time orientation scores, with the independent variables, procrastination score (extreme non-procrastinators and extreme procrastinators) and experimental group (death anxiety, anxiety, and control). The results are shown in Tables 3 and 4. As expected, future time orientation score again varied significantly with extreme procrastination level, with $F(1,54) = 17.654, p < .001$. The main effect of experimental group was still not significant ($F(2,54) = .342, p > .05$). The interaction effect of extreme procrastination level and experimental group, while not significant, showed a trend towards significance ($F(2,54) = 2.954, p = .061$).

Supplementary Analyses

Pearson correlations were then performed looking at future time orientation score, procrastination score, death anxiety score, and anxiety score (Table 5). The correlation between future time orientation score and procrastination score was significant, $r = -.415, p < .01$: As future time orientation scores increase, procrastination scores decrease. Non-significant correlations were found between future time orientation score and death anxiety, $r = -.105, p > .05$, future time orientation score and anxiety score, $r = .167, p > .05$, procrastination score and death anxiety score, $r = .104, p > .05$, and procrastination score and anxiety score, $r = .008, p > .05$.

As part of the demographic questionnaire, participants were asked to rate themselves on a five point scale on four statements: I am very religious, my friends consider me outgoing, I am more comfortable in a highly structured environment than in a loose and uncontrolled environment, and I follow and respect rules, even if the rules are hard to comply with or do not make sense. Pearson correlations were performed on these

TABLE 3

Mean Future Time Orientation Scores and Number of Participants

ProcrastRecode Group	Experimental Group	Mean	SD	N
1	Death	39.18	3.683	11
	Anxiety	43.33	3.464	9
	Control	41.90	3.071	10
	Total	41.33	3.745	30
2	Death	38.18	4.191	11
	Anxiety	36.22	4.893	9
	Control	36.40	5.317	10
	Total	37.00	4.720	30
Total	Death	38.68	3.884	22
	Anxiety	39.78	5.505	18
	Control	39.15	5.081	20
	Total	39.17	4.756	60

TABLE 4

*Two-Way ANOVA on Future Time Orientation Scores with Extreme Low and High**Procrastination Scores*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	396.205	5	79.241	4.561	.002	.297
Intercept	91596.635	1	91596.635	5272.433	.000	.990
ProcrastRecode	306.705	1	306.705	17.654	.000	.246
Group	11.899	2	5.950	.342	.712	.013
ProcrastRecode*Group	102.639	2	51.319	2.954	.061	.099
Error	938.128	54	17.373			
Total	93376.000	60				
Corrected Total	1334.333	59				

TABLE 5

Correlations Between Future Time Orientation Score, Procrastination Score, Death Anxiety Score, and Anxiety Score

		Total Anxiety Score	Total FTO Score	Total Procrastination Score	Total Death Anxiety Score
Total Anxiety Score	Pearson Correlation	1	.167	.008	
	Sig. (2-tailed)		.415	.968	
	N	26	26	26	
Total FTO Score	Pearson Correlation	.167	1	-.415**	-.105
	Sig. (2-tailed)	.415		.000	.609
	N	26	78	78	26
Total Procrastination Score	Pearson Correlation	.008	-	1	.104
	Sig. (2-tailed)	.968	.415**		.615
	N	26	.000	78	26
			78		
Total Death Anxiety Score	Pearson Correlation		-.105	.104	1
	Sig. (2-tailed)		.609	.615	
	N		26	26	26

** Correlation is significant at the .01 level (2-tailed)

variables, as well as procrastination scores. The results presented in Table 6 showed that items “I am more comfortable in a highly structured environment than in a loose and uncontrolled environment” and “I follow and respect rules, even if the rules are hard to comply with or do not make sense” were positively correlated, $r = .377, p < .01$.

Procrastination scores were negatively correlated with items “I am more comfortable in a highly structured environment than in a loose and uncontrolled environment”, $r = -.304, p < .01$ and “I follow and respect rules, even if the rules are hard to comply with or do not make sense”, $r = -.295, p < .01$.

The results of the behavioral assessment of procrastination showed that 68 of the 85 participants (80%) returned the exit questionnaire. 65 ($\approx 96\%$) returned the questionnaire on the same day as the experiment. The return rate between the groups was not significant: 24 participants in the death anxiety group returned the exit questionnaire, compared to 22 participants in the anxiety group and 22 participants in the control group.

TABLE 6

Correlations Between Demographic Questions and Procrastination Score

		I am very religious	My friends consider me outgoing	I am more comfortable in a highly structured environment than in a loose and uncontrolled environment	I follow and respect rules, even if the rules are hard to comply with or do not make sense	Total procrastination score
I am very religious	Pearson Correlation	1	-.164	.089	.085	-.158
My friends consider me outgoing	Pearson Correlation	-.164	1	-.163	-.077	.054
I am more comfortable in a highly structured environment than in a loose and uncontrolled environment	Pearson Correlation	.089	-.163	1	.377**	-.304**
I follow and respect rules, even if the rules are hard to comply with or do not make sense	Pearson Correlation	.085	-.077	.377**	1	-.295**
Total procrastination score	Pearson Correlation	-.158	.054	-.304**	-.295**	1

** Correlation is significant at the .01 level (2-tailed)

CHAPTER IV

DISCUSSION

Procrastination is a very common personality trait, affecting almost every individual over the course of a lifetime. However, some individuals are considered chronic procrastinators and experience negative effects from their procrastination. Past research has shown that procrastinators, as compared to non-procrastinators, have a foreshortened sense of the future. Additionally, procrastinators have higher death anxiety than non-procrastinators. The purpose of this experiment was to investigate relationship between death anxiety, future time orientation and procrastination. It was hypothesized that priming death anxiety would increase future time orientation among procrastinators.

The results show priming for death anxiety did not significantly increase future time orientation of procrastinators. Moreover, when just extreme procrastination scores were analyzed, the interaction between extreme procrastination level and experimental group on future time orientation only showed a trend towards significance. Therefore, it can be concluded from the results of this study that priming death anxiety does not significantly increase future time orientation scores for procrastinators.

There are three possible reasons that priming death anxiety did not significantly increase future time orientation among procrastinators. First, it is possible that the death

anxiety prime was not strong enough. Perhaps using a scale does not adequately prime death anxiety. Second, it is probable that the sample size was not large enough to show a significant difference between the groups. Finally, it could be that there is no relationship between death anxiety and future time orientation among procrastinators. However, since there was a trend towards significance using extreme procrastination scores, the lack of a significant finding is thought to be caused by either a weak prime and/or a small sample size. It should also be noted that the results of the current experiment were comparable to the results of other studies within the field, thereby confirming the validity of the current study.

Only one previous study looked at the relationship between death anxiety and future time orientation among procrastinators (Blatt & Quinlan, 1967). The results of that research study and the current experiment cannot be compared directly because the two studies used different methodologies. In the Blatt and Quinlan study, only individuals who were punctual and late (the two extremes) were included in the experiment. This is similar to the second analysis where only extreme non-procrastinators and extreme procrastinators were analyzed. However, unlike the current experiment, Blatt and Quinlan did not use a questionnaire or scale to measure procrastination. Instead, the researchers selected participants on basis of when they completed a mandatory course requirement. Twenty-nine individuals (14 in the punctual group and 15 in the late group) were selected to participate in Blatt and Quinlan's study, while the current experiment had 30 participants in each of the groups (extreme non-procrastinators and extreme procrastinators). Additionally, in the Blatt and Quinlan study, the degree of death concern between punctual and late participants was significantly different at a .03 alpha level,

while the degree of future time perspective between the groups was significantly different at a .01 alpha level. Finally, different measures were used to evaluate death anxiety and future time orientation in the two studies. Therefore, it is hard to compare the results of these two dissimilar studies.

Past research has shown that procrastination and future time orientation are significantly and negatively correlated (e.g., Specter & Ferrari, 2000; Jackson, Fritch, Nagasaka, & Pope, 2003; Lasane & Jones, 2000). Similarly, the current experiment found that as future time orientation increases, procrastination decreases. And since the scales in general were significantly correlated, it is not surprising that many of the individual items from the two scales correlated with each other.

In a study by Dickstein and Blatt (1966), a negative relationship was found between death anxiety and future time orientation. Specifically, the researchers found that high death anxiety was related to a diminished future time orientation. However, the results of this experiment found a non-significant correlation between death anxiety and future time orientation. Again, the main cause of this difference is probably due to different methodologies between the two studies, specifically the use of different measures of death anxiety and future time orientation.

In a study by Donovan (1995), a significant correlation between procrastination and death anxiety was found, insomuch that procrastinators had higher death anxiety scores than non-procrastinators. The current study did not find the same relationship, showing a non-significant correlation between death anxiety and procrastination. However, Donovan's results and the results of the current experiment cannot be directly compared, since the two studies used different death anxiety measures. Donovan used

Templer's Death Anxiety Scale, while this study used Thorson and Powell's (1994) Revised Death Anxiety Scale. The differences between these two scales could be a major factor as to why similar results were not found.

The results of the exit questionnaire, which was intended to be a behavioral assessment of procrastination, proved to be a major disappointment. First, a large percentage of the participants returned the questionnaire, most of them on the same day as the experiment. Second, the return rate between the groups was not significantly different, with individuals in the death anxiety prime group returning the questionnaire in the same proportion as the anxiety prime and the control groups. This shows that the exit questionnaire was not successful in assessing behavioral procrastination. One potential reason for this result is that participants were not given a time frame in which to return the questionnaire. If given a concrete time frame, it is possible that procrastinators would have waited longer to turn in the questionnaire than non-procrastinators. Additionally, it is probable that procrastinators who were primed with death anxiety would have turned the questionnaire in the same time frame as non-procrastinators.

The limitations of this study point to several possible research opportunities to explore. One potential follow-up experiment would involve using a different method to prime death anxiety. This could include using sentence completion, word lists, or an implicit-explicit priming task. Another option is re-running experiment with larger sample size. It is possible that just having more participants would cause a significant interaction between death anxiety and future time orientation among procrastinators. A final avenue of research involves pre-testing for procrastination and selecting individuals

with extreme scores. Participants would then be randomly assigned into the three conditions.

The results of this study do not support the conclusion that priming death anxiety significantly changes an individual's time orientation from past time oriented to future time oriented, nor does the change of time orientation decrease an individual's procrastination. However, more research would need to be completed in order to answer these questions definitively.

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APPENDIX

APPENDIX A

Aitken Procrastination Inventory (1982, as cited in Ferrari, Johnson, & McCown, 1995)

For each for the items below, please indicate the extent to which you STRONGLY DISAGREE (1) or STRONGLY AGREE (5) with the statement. Read each statement carefully; remember, there are no right or wrong answers. **PLEASE DO NOT WRITE ON THIS SCALE; RECORD YOUR ANSWERS ON THE ANSWER SHEET.**

1 = Strongly Disagree 2 = Disagree 3 = Neither Disagree nor Agree
4 = Agree 5 = Strongly Agree

1. I delay starting things until the last minute.
2. I'm careful to return library books on time.
3. Even when I know a job needs to be done, I never want to start it right away.
4. I keep my assignments up to date by doing my work regularly from day to day.
5. If there were a workshop offered that would help me learn not to put off starting my work, I would go.
6. I am often late for my appointments and meetings.
7. I use the vacant hours between classes to get started on my evening's work.
8. I delay starting things so long I don't get them done by the deadline.
9. I am often frantically rushing to meet deadlines.
10. It often takes me a long time to get started on something.
11. I don't delay when I know I really need to get the job done.
12. If I had an important project to do, I'd get started on it as quickly as possible.

13. When I have a test scheduled soon, I often find myself working on other jobs when a deadline is near.
14. I often finish my work before it is due.
15. I get right to work at jobs that need to be done.
16. If I have an important appointment, I make sure the clothes I want to wear are ready the day before.
17. I arrive at college appointments with plenty of time to spare.
18. I generally arrive on time to class.
19. I overestimate the amount of work that I can do in a given amount of time.

APPENDIX B

Revised Death Anxiety Scale (Thorson & Powell, 1994)

For each for the items below, please indicate the extent to which you **STRONGLY DISAGREE** (0) to **STRONGLY AGREE** (4). Read each statement carefully; remember, there are no right or wrong answers. **PLEASE DO NOT WRITE ON THIS SCALE; RECORD YOUR ANSWERS ON THE ANSWER SHEET.**

0 = Strongly Disagree 1 = Disagree 2 = Neither Disagree or Agree

3 = Agree 4 = Strongly Agree

1. I fear dying a painful death.
2. Not knowing what the next world is like troubles me.
3. The idea of never thinking again after I die frightens me.
4. I am not at all anxious about what happens to the body after burial.
5. Coffins make me nervous.
6. I hate to think about losing control over my affairs after I am gone.
7. Being totally immobile after death bothers me.
8. I dread to think about having an operation.
9. The subject of life after death troubles me greatly.
10. I am not afraid of a long, slow dying.
11. I do not mind the idea of being shut into a coffin when I die.
12. I hate the idea that I will be helpless after I die.
13. I am not at all concerned over whether or not there is an afterlife.
14. Never feeling anything again after I die upsets me.
15. The pain involved in dying frightens me.

16. I am looking forward to new life after I die.
17. I am not worried about ever being helpless.
18. I am troubled by the thought that my body will decompose in the grave.
19. The feeling that I will be missing out on so much after I die disturbs me.
20. I am worried about what happens to us after we die.
21. I am not at all concerned with being in control of things.
22. The total isolation of death is frightening to me.
23. I am not particularly afraid of getting cancer.
24. I will leave careful instructions about how things should be done after I am gone.
25. What happens to my body after I die does not bother me.

APPENDIX C

Taylor Manifest Anxiety Scale (Taylor, 1953)

The following questions have no “right” and “wrong” answers because everyone has the right to his/her own views. Try to answer them exactly and truly. **PLEASE DO NOT WRITE ON THIS SCALE; RECORD YOUR ANSWERS ON THE ANSWER SHEET.**

When you answer, keep these points in mind:

1. You are asked not to spend time pondering. Give the first natural answer as it comes to you. Of course, the questions are too short to give you all the particulars you would sometimes like to have.
2. Be sure not to skip anything, but answer every question, somehow. Some may not apply to you very well, but give your best guess. Some may seem personal, but remember that the answer sheets are kept confidential and cannot be scored without a special key. Answers to particular questions are not inspected.
3. Answer as honestly as possible what is true of you. Do not merely mark what seems “the right thing to say” to impress the examiner.

1 = Strongly Agree

2 = Agree

3 = Neither Agree nor Disagree

4 = Disagree

5 = Strongly Disagree

1. I believe I am no more nervous than most others.
2. I work under a great deal of tension.
3. I cannot keep my mind on one thing.
4. I am more sensitive than most people.

5. I frequently find myself worrying about something.
6. I am usually calm and not easily upset.
7. I feel anxiety about something or someone almost all the time.
8. I am happy most of the time.
9. I have periods of such great restlessness that I cannot sit long in a chair.
10. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
11. I find it hard to keep my mind on a task or a job.
12. I am not unusually self-conscious.
13. I am inclined to take things hard.
14. Life is a strain for me much of the time.
15. At time I think I am no good at all.
16. I am certainly lacking in self-confidence.
17. I certainly feel useless at times.
18. I am a high-strung person.
19. I sometimes feel that I am about to go to pieces.
20. I shrink from facing a crisis or difficulty.

APPENDIX D

Love of Food Questionnaire

For each for the items below, please indicate the extent to which you **STRONGLY AGREE** (1) or **STRONGLY DISAGREE** (5) with the statement. Read each statement carefully; remember, there are no right or wrong answers. **PLEASE DO NOT WRITE ON THIS SCALE; RECORD YOUR ANSWERS ON THE ANSWER SHEET.**

1 – Strongly Agree 2 – Agree 3 – Neither Agree or Disagree
4 – Disagree 5 – Strongly Disagree

1. I love spicy food.
2. I know how to boil an egg.
3. If forced to make my own meals, I would starve.
4. I am a vegetarian.
5. I love to try new foods.
6. When I go to a restaurant, I get the same meal every time.
7. I love Chinese food.
8. Pizza makes a good breakfast.
9. I am very picky with what I will eat.
10. I love exotic cuisine.
11. I always eat breakfast.
12. I have food allergies.
13. I eat out often.
14. I love to watch cooking shows on television.

15. I cannot remember the last time I cooked for myself.
16. I would love to have a personal chef.
17. I love to try new recipes.
18. I love Italian food.
19. I make it a point to try out new restaurants.
20. I try to eat as healthy as possible.

APPENDIX E

Future Time Orientation Scale (Gjesme, 1979)

For each for the items below, please indicate the extent to which you STRONGLY DISAGREE (1) to STRONGLY AGREE (4). Read each statement carefully; remember, there are no right or wrong answers. **PLEASE DO NOT WRITE ON THIS SCALE; RECORD YOUR ANSWERS ON THE ANWER SHEET.**

1 – Strongly Disagree

2 – Disagree

3 – Agree

4 – Strongly Agree

1. I always seem to be doing things at the last moment.
2. I have been thinking a lot about what I am going to do in the future.
3. I find it hard to get things done without a deadline.
4. I need to feel rushed before I can really get going.
5. Half a year seems to me a long time.
6. I think about the future only to a very small extent.
7. I am most concerned about how I feel now in the present.
8. I am not so very much concerned about things a little ahead in time.
9. It's really no use worrying about the future, because what will be, will be.
10. I reflect a great deal about the future, and I feel it is rapidly approaching.
11. It often seems like that day will never end.
12. I often find myself looking for ways to kill time.
13. The future seems very vague and uncertain to me.
14. Usually I feel time is going too fast.

APPENDIX F

Manipulation Check

1. How anxious are you at this moment?

1	2	3	4	5
Not at all anxious	Not very anxious	A little anxious	Very anxious	Extremely anxious

2. How anxious about death are you at this moment?

1	2	3	4	5
Not at all anxious	Not very anxious	A little anxious	Very anxious	Extremely anxious

APPENDIX G

Goal Exercise

Think of goals you need to achieve over the next couple of months. The goals can be personal, academic, or professional. List as many goals that you want to achieve as possible. If you do not have three goals for the short term, just list as many as you have.

1. What is your first goal?

1a. What are the steps you need to follow in order to achieve this goal?

2. What is your second goal?

2a. What are the steps you need to follow in order to achieve this goal?

3. What is your third goal?

3a. What are the steps you need to follow in order to achieve this goal?

APPENDIX H

Demographic Questions

1. Age: _____

2. Gender (circle one): Male Female

3. When do you have most of your classes? (circle your answer)

Monday/Wednesday/Friday Thursday/Thursday Everyday of the Week

For each for the items below, please indicate the extent to which you STRONGLY DISAGREE (1) or STRONGLY AGREE (5) with the statement. Read each statement carefully; remember, there are no right or wrong answers. Please circle your response.

4. I am very religious.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree

5. My friends consider me outgoing.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree

6. I am more comfortable in a highly structured environment than in a loose and uncontrolled environment.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree

7. I follow and respect rules, even if the rules are hard to comply with or do not make sense.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree

APPENDIX I

Exit Questionnaire

For each for the items below, please indicate the extent to which you agree or disagree with the statement. Read each statement carefully; remember, there are no right or wrong answers.

1 = Strongly Agree 2 = Agree 3 = Neither Agree nor Disagree
4 = Disagree 5 = Strongly Disagree

- 1. I think about death often.
1 2 3 4 5
- 2. When I think about death, I think about the things I regret doing.
1 2 3 4 5
- 3. When I think about death, I think about the things I accomplished.
1 2 3 4 5
- 4. When I think about death, I think about the things I did not accomplish yet.
1 2 3 4 5
- 5. Thinking about death makes me uncomfortable.
1 2 3 4 5
- 6. I do not think about death because it seems so far away.
1 2 3 4 5
- 7. I have not made any plans regarding my death (e.g., wills, cemetery, funeral arrangements).
1 2 3 4 5
- 8. Answering these questions about death makes me feel sad.
1 2 3 4 5
- 9. Answering these questions about death makes me feel anxious.
1 2 3 4 5
- 10. Answering these questions about death makes me think about the future.
1 2 3 4 5

If you have any questions, thoughts, or concerns about this experiment, please contact the experimenter, Elizabeth Deyling at e.deyling@csuohio.edu or 440-915-7384.