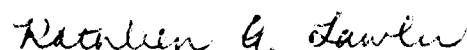


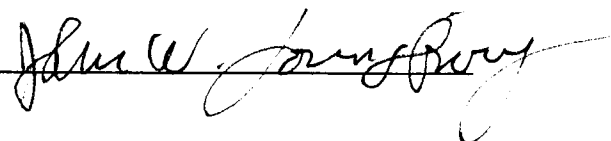
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I am submitting herewith a thesis written by Steven E. Newell entitled "Procrastination: Development of a Scale". I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.


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Associate Vice Chancellor and
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**PROCRASTINATION:
DEVELOPMENT OF A SCALE**

**A Thesis
Presented for the
Master of Arts
Degree
The University of Tennessee, Knoxville**

**Steven E. Newell
December 1997**

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DEDICATION

This thesis is dedicated to my family, especially to my parents, Edward Ferris Newell and Barbara Marie Crawford Newell, for their love, support, and patience.

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ABSTRACT

Procrastination is a pervasive and recalcitrant problem. It is especially endemic to academic settings. This research reviews the major findings in the research literature and develops a procrastination scale that addresses some of the limitations found in previous self-report measures of procrastination.

Results support the Procrastination Scale's reliability and validity as a measure of procrastination. Also, the results replicate and extend information about the personality characteristics which appear to accompany and possibly facilitate the development of procrastination. These include social anxiety, public self-consciousness, passive-aggressiveness, and (inversely) self-esteem.

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1. INTRODUCTION

According to Merriam-Webster's Ninth New Collegiate Dictionary, to procrastinate is to "put off intentionally or habitually...to put off intentionally the doing of something that should be done" (1986). Procrastination is a familiar and widespread everyday experience. It is especially endemic to academic settings. Soloman and Rothblum (1984), for example, found that almost half (46.0%) of their university student sample had procrastinated on writing term papers and over one quarter (27.6%) had procrastinated in studying for their exams. In addition, over one fifth (21.2%) of the study's participants felt that their procrastination was a problem. Procrastination is not limited to academic situations. Harriot and Ferrari (1996) report that approximately 20% of their adult samples drawn from the general population consider themselves chronic procrastinators.

Not only is procrastination widespread and perceived as problematic for a significant number of people, it also results in negative consequences. Beswick, Rothblum, and Mann (1988) report that procrastinators have lower grades. Hewitt, Mittelstaedt, and Wollert (1989) among others maintain that the failure associated with procrastination lowers self-esteem. Lower self-esteem may then promote future task incompletions and lead to repeated cycles of failure. At the

same time, other people who depend on a procrastinator for the timely completion of tasks or projects are at a disadvantage. Thus, further insight into the phenomenon of procrastination would be helpful at both the individual and the collective level.

Empirical work on procrastination is only in its beginning phase. Before reviewing the limited number of articles available in the psychological research literature, alternate ways of conceptualizing and discussing procrastination should be noted. There are three common approaches. The first approach views procrastination as poor time management. The focus is on developing better scheduling techniques, study habits, or business skills. This approach is often encountered in the popular literature, self-help psychology books, study aids, and articles intended to increase business efficiency. The day-planner is a tool that exemplifies a solution for this view of procrastination.

The second approach is from the educational literature and addresses self-paced learning. A major problem for this method of personalized self-instruction (PSI) is student procrastination (Bijou, Morris, and Parsons, 1976). A majority of these articles examine a variety of educational methods, their application, and their success at reducing procrastination in this learning context. For example, Lamwers and Jazwinski (1989) found that instructor-student contracts were more effective in reducing student

procrastination than instructor-imposed deadlines. An examination of PSI and procrastination was beyond the scope of this paper. However, it is hoped that results from this paper and other psychological research will be helpful in addressing practical issues such as reducing student procrastination in a PSI context.

The third approach explains procrastination in psychoanalytic terms. Drawing upon the ideas of Freud, Birner (1993) views repetitious procrastination as an example of rituals established in childhood to avoid sexual gratification. Delay and avoidance in completing certain actions acquires a positive value and becomes a substitute for unacceptable impulses. Carried into adulthood, chronic procrastination is described as a symptom of earlier unresolved developmental issues and illustrates a passive response to the requirements of maturity.

Missildine (1964) finds the source of procrastination in either overindulgent or overdemanding parents. The overindulgent parent encourages a child to be an underachiever, while the overdemanding parent creates procrastination in the child as a rebellious response to parental demands. In a similar vein, Smith and York (1981) view procrastination as a psychodynamic issue where the individual is trying to "get back" at one's parents. Blatt and Quinlan (1967) describe procrastination as a way to avoid an unconscious death anxiety. By procrastinating, the

individual expresses rebellion at the finality of his or her existence.

Ellis and Knaus (1977) offer a more contemporary therapeutic interpretation based on Rational-Emotive Therapy. According to these authors, procrastination is based on irrational beliefs and involves self-downing, a low frustration tolerance, and hostility. Rorer (1983) suggests some procrastination is due to a fear of success and its consequences. These psychoanalytic and other therapeutic sources offer intriguing possibilities in explaining procrastination. However, the theories are either too difficult to verify or attempts to test the hypotheses have been inadequate by empirical research standards.

In 1983, Burka and Yuen published *Procrastination*. Based upon anecdotal evidence, their own clinical observations, and some of the previously cited therapeutic outlooks, they suggested that the causes of procrastination were essentially based on fears. These were a fear of failure and a fear of success; a fear of autonomy and a fear of separation. Associated with each of these fears were a number of reasons for procrastination that could be empirically tested. For example, they suggested that procrastination could be due to evaluation anxiety, perfectionism, rebellion against control, or unrealistic perceptions concerning the difficulty of a task. Burka and Yuens' book contains a rich source of insights into the nature of procrastination and remains a

common citation among empirical researchers in the area. Although their work helped define the parameters of later investigation into procrastination, a systematic program of empirical research was necessary to affirm or disconfirm their suggestions.

Literature Review

Rothblum research group

Soloman and Rothblum (1984) was the first systematic empirical study to go beyond time management and psychodynamic conceptualizations of procrastination. This research empirically assessed the frequency of procrastination for certain academic behaviors in a sample of 342 university students.

In addition, their research examined a number of possible reasons and potential correlates of procrastination. To do so, they developed the Procrastination Assessment Scale for Students (PASS). The first section of this scale asked participants to rate on a 5-point Likert-type scale the degree to which they procrastinated on three different academic tasks and the extent to which procrastination on the task was a problem. These tasks were writing a term paper, studying for an exam, and keeping up with weekly readings. These ratings were then summed to provide an overall procrastination score.

In the second section of the PASS, a number of possible reasons for procrastination were provided and students were asked to rate on a 5-point Likert scale which of these reasons applied to them when they had last delayed writing a term paper. These reasons had been derived from a pilot study using input from undergraduate students and clinical psychology faculty as to why they procrastinated on academic tasks.

As behavioral measures to check the validity of their self-report procrastination scale (the PASS), they recorded the times that students in their sample took self-paced quizzes and attended experimental sessions. To assess the relationship between academic performance and procrastination, they recorded the student's final grade in their psychology class. Finally, a number of other self-report scales that measured a variety of cognitive, affective, and behavioral attributes hypothesized to be related to procrastination were compared to the overall PASS score. Many of these attributes had been suggested by the work of Burka and Yuen.

Results showed that people who reported a high degree of procrastination on the PASS scale did, in fact, procrastinate on academic tasks. They took self-paced quizzes and attended experimental sessions later than those with lower procrastination scores. However, results did not show a significant relationship between procrastination scores and the final course grade. The authors suggested that, since the

PASS scale assessed procrastination on general academic tasks, one course grade may have been inadequate in assessing overall academic performance.

Results also showed PASS scores to be negatively correlated to a punctuality and organized study habits measure. This is consistent with the time management conceptualization of procrastination. In addition, procrastination scores correlated significantly with both affective and cognitive measures. Affective measures of anxiety and depression correlated positively with procrastination. The cognitive measure of irrational cognitions also correlated positively with procrastination scores and there was a significant negative correlation between self-esteem and procrastination scores. These findings supported the study's hypothesis that procrastination involves more than just poor time management. Affective and cognitive components play a role in the phenomenon of procrastination as well.

Finally, a factor analysis and frequency tabulation were performed on the reasons given for procrastination. Two groups of respondents could be distinguished. The first group, although small (i.e. 6.3% endorsed all of the relevant reasons and 14.1% endorsed at least one of the reasons), was consistent in their reasons for procrastinating. They endorsed items relating to a fear of failure factor which accounted for 49.4% of the variance. The reasons included in

this factor were evaluation anxiety (concern over meeting other's expectations), perfectionism (concern over meeting one's own expectations), and a lack of self-confidence. Results also indicated females were more likely to endorse items that reflected this factor.

The second group of procrastinators was larger (with 19.4% endorsing all of the reasons and 47.0% endorsing at least one of the reasons), but more heterogenous in their responses as to why they procrastinated. Reasons endorsed by this group of participants were largely related to the aversiveness of the task and laziness. Since this task aversiveness factor only accounted for 18% of the variance, participants were also endorsing a variety of other reasons as well.

Correlations were performed between these two factors (fear of failure and task aversiveness) and the other cognitive, affective, and behavioral self-report measures. Each of these factors was significantly related to irrational beliefs, depression, punctuality, and study habits. However, only those students who procrastinated for reasons related to a fear of failure also reported high anxiety and low self-esteem.

In a follow-up to their initial investigation, Rothblum, Soloman, and Murakami (1986) focused less on clinical and more on academic factors thought to be related to procrastination. The authors asked two questions to operationalize

procrastination. These were the frequency of procrastination in studying for an exam and the anxiety which this provoked. Each of these questions was self-rated on a 5-point Likert-type scale. These two ratings were totaled to become the procrastination score of the simplified PASS. To determine the simplified PASS scores relation to actual academic behavior, they were compared to the time it took participants to take the tenth of 23 self-paced quizzes. To determine procrastination's relation to academic performance, the PASS scores were compared to student's overall grade point average for the semester.

This PASS or procrastination score was also compared to scores on cognitive, affective, and behavioral trait measures.

The cognitive trait measure assessed attributions of success and failure on exams. The affective trait measure assessed test anxiety. The behavioral trait measure assessed self-control.

In order to assess procrastination behavior over time, students were also assessed each week for the three weeks before a midterm examination. Procrastination scores were then compared to cognitive, affective, and behavioral state measures.

One cognitive state measure was rating the perceived importance and difficulty of the exam as the exam date approached. The other cognitive state measure was to rate the importance of certain factors that could hinder effective

study. These factors were the same reasons for procrastinating that constituted the fear of failure and task aversiveness factors found in Solomon and Rothblum (1984).

The affective state measure was to self-rate anxiety and anxiety-related physical symptoms at the three weekly intervals before the exam date. The behavioral state measure was to self-rate on a Likert-type scale the frequency of procrastination and the amount of study behavior.

Results showed that subjects with a high procrastination score on the shortened version of the PASS also delayed taking the self-paced quiz. Thus, the shortened PASS was a valid measure for this academic procrastination behavior. Self-reported procrastination was also significantly correlated with a lower overall grade point average for the semester. This result indicated procrastination was related to poorer academic performance.

In terms of affective trait measures, high procrastinators reported greater test anxiety. For the cognitive trait measure, procrastinators attributed success on examinations to more external and transitory factors. However, there was no difference between high and low procrastinators on attributions for failure. For the behavioral trait measure, high procrastinators scored lower on self-control.

In terms of affective state measures, high procrastinators reported higher state anxiety each week prior

to midterm examinations. They also reported more anxiety-related physical symptoms than non-procrastinators. These differences were mainly due to female high procrastinators reporting more weekly anxiety and anxiety-related physical symptoms. There was no significant difference on these measures between male high and low procrastinators.

On cognitive state measures, there were no significant differences between high and low procrastinators. However, all participants in the study viewed exams as more difficult, important, and anxiety-provoking initially. These perceptions decreased as the exam date approached. In addition, all participants reported that fear of failure and task aversiveness factors hindered their study preparation more initially than it did as the examination time approached.

For the behavioral state measures, all participants reported less procrastination and more study behavior as the exam date approached. While high procrastinators reported higher weekly procrastination overall, there was no significant difference between high and low procrastinators on the reported amount of study behavior.

To summarize, this study found that the main difference between procrastinators and non-procrastinators was not so much the actual study behavior or cognitions relating to the academic task, but the amount of anxiety experienced. While procrastinators differed significantly on affective, cognitive, and behavioral trait measures (test anxiety,

attributions of success, and self-control, respectively), the differences between high and low procrastinators on state measures were less extreme.

In another article by this research group, Beswick, Rothblum and Mann (1988) examined three different theoretical explanations for procrastination. According to Janis and Mann (1977), procrastination is a way of dealing with difficult decisions or conflicts concerning the proper course of action in solving a problem. To test this theory, the researchers used Mann's Decision-making Questionnaire (1977).

Ellis and Knaus (1977) believe procrastination is due to irrational beliefs. An example of an irrational belief would be "I must do well to be a worthwhile person". Their theory contends that when failure occurs, a loss of self-esteem follows. The person will then procrastinate to avoid further confirmation of personal inadequacy. This second theory of procrastination was operationalized and tested using Ellis' Scale of Irrational Cognitions (MacDonald and Games, 1972).

The third theory of procrastination is Burka and Yuens' (1983) suggestion that delay in doing tasks serves as a buffer for the procrastinator's vulnerable sense of self-esteem. This theory was operationalized and tested by using Rosenberg's Self-Esteem Scale (1979).

Scores on the three scales used to represent theoretical explanations of procrastination were compared to scores on the PASS (the self-report procrastination measure) and to the main

behavioral measure of procrastination (time taken to submit a term paper). These procrastination measures were also compared to an anxiety and a depression measure.

To assess the relationship between procrastination and academic performance, the times that a term paper outline, term paper, and the research questionnaire were turned in and the grade received for the outline, term paper, and the course were recorded. This data was also compared to the PASS scores.

Results showed that self-reported procrastination (PASS scores) correlated significantly with two of the three behavioral measures: time taken to submit the term paper outline and the term paper. PASS scores did not correlate with the non-academic behavioral measure-handing in the research questionnaire. It should also be noted that the sample for this research was 245 students in Australia. Thus, while PASS scores generalized to Australian students in predicting academic procrastination, they were not successful in predicting non-academic procrastination behavior.

PASS scores did correlate negatively with the grade for the outline, term paper, and the course. The only behavioral measure of procrastination to have a significant negative correlation with grades was time taken to submit the term paper outline.

In comparing the three theories of procrastination, results supported Janis and Manns' theory that procrastination

was a coping pattern for dealing with decisional conflict. Both the PASS and the main behavioral measure of procrastination (time taken to submit the term paper) correlated significantly with the decisional procrastination measure.

Results did not support Ellis and Knaus' view that procrastination is an outcome of irrational beliefs. While there was a small but significant correlation between the irrational beliefs measure and self-reported procrastination, there was no correlation between irrational beliefs and the behavioral measure of procrastination.

Results did support Burka and Yuens' theory that procrastination is a means of protecting a vulnerable sense of self-esteem. Both procrastination measures were significantly correlated with the self-esteem measure.

To ascertain whether each theory made a unique contribution in explaining procrastination or the theories overlapped in their explanation, a multiple regression analysis was performed. For the behavioral measure of procrastination (time taken to hand in the paper), self-esteem accounted for 5% of the variance. For self-reported procrastination, self-esteem accounted for 12% of the variance and indecision accounted for 3%. The unique contribution of these factors is significant yet small. This suggests that a number of other psychological factors are involved in procrastination.

Finally, the study found a significant correlation between age and procrastination. Older students self-reported less procrastination and took less time to hand in their term paper outlines. Thus, increased age was correlated with decreased procrastination.

Altogether, the Rothblum group of studies was successful in demonstrating that procrastination goes beyond poor time management. Procrastination had an affective component. It was consistently correlated to the measures of depression and anxiety. Procrastination had a cognitive component. It was consistently correlated with the measures of self-esteem and indecisiveness. Procrastination also had other behavioral components. It was inversely related to a measure of self-control. Major reasons for procrastinating were concern over meeting other's expectations, concern over meeting one's own expectations, and low self-confidence. These constituted a fear of failure factor. Reasons related to task aversiveness and a low energy level or laziness constituted another major factor for procrastinating. These findings would be further replicated in other studies and help serve as the foundation for future research in the area.

Lay's studies

Another of the prolific scholars on procrastination is Dr. Clarry Lay. This research program was designed to examine person-task characteristics of procrastination behavior. A

20-item, true-false personality scale was developed and administered in each of the studies comprising this research program. This scale was intended to measure general procrastination and, unlike Solomon and Rothblums' scale, was not limited to instances of academic procrastination. A sample item was "I am continually saying I'll do it tomorrow".

In the first study (Lay, 1986), scores on the procrastination scale were compared to two behavioral measures and three measures of academic achievement. For the behavioral measures, two independent samples were asked to return an inventory which included the procrastination scale. Inventories were returned within a specified number of days. Results showed that respondents with high procrastination scores were significantly more likely to return their inventories late. This supported the construct validity of Lay's procrastination scale.

The three measures of academic achievement were overall G.P.A., the final exam grade in a psychology course, and the time taken to complete the final exam. After analysis, none of these academic achievement measures were related to procrastination scores.

The inventory containing Lay's procrastination scale also included a number of additional scales. These scales measured constructs that the literature had suggested would be related to procrastination. The scales were drawn from Jackson's Differential Personality Inventory (Jackson, 1967). Results

showed that procrastination was positively correlated with neurotic disorganization and negatively correlated with organization. Procrastination was also positively correlated with rebelliousness and negatively correlated with social desirability. In addition, Lay found that his procrastination measure was unrelated to Jackson's measures for achievement need, energy level, and self-esteem. This last finding that procrastination was unrelated to self-esteem was particularly surprising given the Rothblum group's consistent finding of a significant correlation between procrastination and low self-esteem.

With an independent sample, Lay also compared procrastination scores with responses from the Little Personal Projects Questionnaire (Little, 1983) with an independent sample. Personal projects were described as "everyday activities or concerns that people have at different stages of their life". Participants were asked to choose ten examples from their own life that they would be working on in the next month. Participants then rated their projects along 18 different dimensions. An advantage to using the Personal Projects Questionnaire was that it allowed Lay, instead of focusing on one or two tasks, to examine procrastination's role on a wide variety of tasks that were relevant to the participant. Based upon their responses to the Personal Projects Questionnaire, Lay found a number of differences between high and low procrastinators.

First, high and low procrastinators differed on the types of projects they selected. Low procrastinators chose more projects relating to estate concerns (such as cleaning the house or repairing the lawnmower) and family matters (such as visiting relatives or getting closer to one's spouse). High procrastinators chose more projects that related to hobbies or vocational concerns (such as deciding which career to pursue). Lay notes that these differences may reflect what participants selectively chose to list rather than any actual differences in projects in which they were actively engaged. Still, the difference in focus is interesting. While low procrastinators chose more practical projects dealing with home and family matters, high procrastinators chose projects relating to their extracurricular activities and what they were going to do with their lives.

Second, in terms of the ratings of the various dimensions to their projects, high procrastinators reported spending less time and spending less adequate time on their projects. There were no significant differences between high and low procrastinators for the overall averages of the other sixteen dimensions. These results also supported the construct validity of Lay's procrastination scale.

Third, there were revealing differences between high and low procrastinators when correlations between the dimension ratings were compared. For low procrastinators, if a project was rated as stressful, it was also perceived as being a

greater challenge, having more impact on other projects, and more absorbing. More time was also spent on projects rated as stressful by the low procrastinator. Other's view of the importance of a project also motivated the low procrastinator. Low procrastinators spent more time, spent more adequate time, and made more progress on projects that others viewed as important.

For high procrastinators, the stress of a project was not a motivating factor for spending more time on a project. In fact, if a project was rated as stressful, it was also rated as being less likely to be completed. High procrastinators spent more time on projects they rated as enjoyable or typical of themselves. The visibility of a project affected the high procrastinator's attitude toward a project. Those projects rated as more visible were also seen as providing a greater challenge and having a greater impact on other projects.

These findings suggest two different approaches by the two groups to personal projects. Low procrastinators chose projects that tended to be practical and could be accomplished within a set period of time. They responded to the stress of a project with an attitude of getting it done and spent more time on it. High procrastinators chose projects that were more open-ended. These projects related more often to vocational concerns or on-going hobbies. They were less willing than low procrastinators to act on unpleasant or

stressful projects. Whereas low procrastinators spent more time and made more progress on projects that others viewed as important, the high procrastinator felt that highly visible projects were more challenging and had greater impact. Despite this attitude toward highly visible projects, high procrastinators were not more likely to spend more time on those projects that were highly visible to others.

In a second study, Lay (1990) examined two explanations of procrastination that were initially proposed by both Ellis and Knaus (1977) and Burka and Yuen (1983). These authors had suggested that people generally procrastinate on tasks that are perceived as unpleasant and those that are seen as likely to fail. They hypothesized that trait procrastinators were especially responsive to these person-task characteristics and were more likely than non-procrastinators to delay on tasks that are perceived as aversive or likely to fail.

To test these hypotheses, Lay used the Lay Procrastination Scale (1986) and the Personal Projects Questionnaire (Little, 1983). As expected, results showed that procrastinators were more likely than non-procrastinators to delay working on both short-term and open-ended projects without a deadline.

For short-term projects, all subjects were more likely to procrastinate when a task was aversive. This was true for both trait procrastinators and non-procrastinators. While procrastinators rated tasks as more aversive, there was not a

significant interaction between trait procrastination and task aversiveness. That is, procrastinators did not increase their rate of procrastination any more than non-procrastinators when a task was perceived as unpleasant. In addition, for long-term open-ended projects, the aversiveness of the task had no effect on dilatory behavior for procrastinators and non-procrastinators alike. These results indicate, contrary to the initial hypothesis, that procrastinators are not more susceptible to the person-project characteristic of task aversiveness than non-procrastinators.

For the person-project characteristic of likelihood of failure on the project, there was also a mixture of expected and unexpected results. For short-term projects, all subjects were more likely to procrastinate if the project was perceived as likely to fail. Also, procrastinators were more likely to delay on projects whether they were perceived as likely to fail or not. However, there was no trait procrastination by fear of failure interaction. For short-term projects, procrastinators did not increase their delay behavior more than non-procrastinators when a project was perceived as likely to fail.

For open projects, there was a significant and unexpected interaction. While non-procrastinators spent less time on projects likely to fail and more time on projects likely to succeed, the opposite was true for trait procrastinators. Trait procrastinators tended to delay on projects likely to

succeed and spend more time on projects likely to fail. To explain this counter-intuitive finding, Lay suggests that procrastinators are using a self-handicapping strategy in order to maintain a fragile sense of self-worth. According to this explanation, procrastinators put more effort into difficult tasks because, even if they fail, their excuse can be the task's difficulty. By putting less effort into tasks that are likely to succeed, they can rationalize possible failure and maintain their self-worth by attributing the failure to their procrastination.

Finally, while the study found that trait procrastinators were not more responsive to the task characteristics of aversiveness or likelihood of failure, the study did find that procrastinators were more likely to find tasks more aversive and themselves as more likely to fail on tasks in general. Lay suggests this finding reflects a more anxious and pessimistic outlook on the part of procrastinators. This hypothesis is further investigated in the next study to be reviewed.

Lay's 1992 article replicated the finding that procrastinators view tasks as more aversive and themselves as less competent (more likely to fail) in performing tasks. This study also found that procrastinators were more likely to see these tasks as imposed by others or as having less autonomy when performing tasks compared to nonprocrastinators. These same person-task characteristics lead to procrastination

in the general population. The initial hypothesis that procrastinators were more responsive to these characteristics was not supported by this or the earlier (Lay, 1990) study. Results imply that trait procrastinators engage in more delay behavior simply because they exaggerate these characteristics in the first place.

To account for this negative exaggeration in person-task characteristics (high task aversiveness, low sense of competence and low autonomy), Lay hypothesized that procrastinators are more negative in general. To test this, Lay used measures of positive and negative affect and a measure of trait pessimism and compared these to procrastination scores and person-task characteristic rankings. In addition, time management practices were also assessed to determine their relationship to procrastination and perceptions of person-task characteristics in the naturally occurring task situation of preparing for an examination.

Trait procrastinators did score lower on positive affect, higher on negative affect, and higher on trait pessimism. Procrastinators also had a more negative outlook on life. However, after performing a hierarchical multiple regression analysis, it was determined that while general negativity and trait procrastination both contributed to negative person-task characteristic ratings, these effects were independent. Other factors must account for these lower ratings for person-task

characteristics on the part of procrastinators.

Results also showed a relationship between trait procrastination and poor time management practices. Procrastinators rated themselves as less capable at planning and scheduling, setting goals and priorities, and as having less control of time. There was, however, no significant relationship between these self-ratings on time management and procrastinator's ratings on aversiveness, competence, or autonomy. Therefore, poor time management does not contribute to these negative ratings for person-task characteristics.

Lay's results show that, in addition to a more pessimistic outlook on life, procrastinators approach their tasks with less self-confidence, more distaste, and a sense of less choice. Perceptions that lead to procrastination in the general population are especially present among procrastinators. For some reason, procrastinators have more negative perceptions when anticipating a task. As suggested by Solomon and Rothblum (1986), this may relate to their lower self-esteem.

These negative person-task perceptions on the part of procrastinators may not correspond to the procrastinator's actual experience for tasks once they are completed. One finding by Lay suggests this view. While trait procrastination was related to anticipated task aversiveness before an examination, after the examination trait procrastination was unrelated to the remembered aversiveness

of studying for the examination.

In a fourth study, Lay (1987) investigated different types of procrastinators. Given the variety of explanations provided for why people procrastinate, it would not be surprising if different groups of people delay performing tasks for different reasons. For example, Lay (1986) found that self-esteem was unrelated to procrastination. However, this finding applied to all participants who scored high on procrastination. It is possible for a sub-group to exist where there is a significant relationship between self-esteem and procrastination. This study investigated whether different groups of procrastinators existed. Each group of procrastinators would have different motivations and unique personality correlates and other attributes associated with their procrastination.

The research actually contained two separate studies. In both, Lay's (1986) Behavioral Procrastination Scale was used. In the first study, scores on the procrastination scale were compared to responses on Jackson's Differential Personality Inventory (1967). For this study, subscales measuring self-esteem, energy level, need-achievement, neurotic disorganization, organization, and rebelliousness from the Differential Personality Inventory were used. For the first study, participants also completed Little's Personal Project Questionnaire (1983). Skinner and Leis' Modal Profile

Analysis (1980) was used to sort responses and classify scores according to type.

Two types of procrastinators were distinguished. Both were characterized by high neurotic disorganization-the tendency to be distracted and an inability to focus on the details of everyday living. The types differed in terms of organization and rebelliousness. The first type scored low on organization and was moderate on rebelliousness. They also scored low on self-esteem, energy level and need for achievement. These respondents characterized their personal projects as low in difficulty and stress. Lay characterizes this type of procrastinator as fitting the classic definition of a "non-achievement syndrome underachiever". Described as lazy and unmotivated by others, this type seems to coast through life.

The second type scored high on rebelliousness and moderate on organization. They characterized their tasks as high in difficulty and stress and low in progress. Lay suggests that these personal projects are probably not any more difficult or stressful than the personal projects of others, only that they are perceived that way. This type of procrastinator delays to avoid difficult or unpleasant tasks or as an act of rebellion.

In the second study, Lay divided the participants into male and female groups. The analysis of personal projects was dropped from this study. Measures of sensitivity to

rejection, fear of success, self-monitoring, self-consciousness, breadth of interest, cognitive failures, and stimulus screening were added.

For males, two types of procrastinators were distinguishable. Both types scored low on organization and stimulus screening. The first type also scored high on neurotic disorganization as well as other-directed self-monitoring. Continuing the connection between procrastinators and underachievement disorders, Lay characterized this type as the "overanxious disorder underachiever". In this case, increased responsiveness to a situation, especially in regard to others, along with distractability and a lack of organization contribute to anxiety and procrastination tendencies.

The second procrastination type for males had high breadth of interest and private self-consciousness. In addition to low organization and stimulus screening, they also score low on other-directed monitoring. Lay suggests this procrastinator is self-engaged and independent. Lay characterizes this type as the "identity-disorder underachiever". These underachievers are often younger and struggling over questions of personal identity.

For females, there was one profile that was significant for procrastinators. These procrastinators scored high on neurotic disorganization and low on stimulus screening and organization. In addition, they scored low on self-esteem,

energy level, and achievement need. Lay proposes that, for females, procrastination may be the result of low achievement motivation and low self-esteem coupled with a lack of organization. In support, Macoby and Jacklin (1974), in their discussion of gender differences in achievement motivation and self-concept, suggest that many women defend their egos through disassociation and a lack of commitment. Lay also notes the similarity between this profile for females and the profile in the first study. Noting the profile's similarity, Lay points out that two thirds of those participants were also women.

Overall, Lay recommends a closer examination of the relationship between underachievement and anxiety to procrastination. All procrastination types in the second study of this research were related to a lack of autonomic stimulus screening. This lack of ability in disregarding irrelevant cues has been linked to arousability. It also serves as an explanation for the increased anxiety and distractability of procrastinators.

McCown research group

In their first study, McCown, Petzel, and Rupert (1987) replicated earlier work on a behavioral and a cognitive correlate to procrastination. They also examined procrastination's relationship to impulsiveness, outgoingness, and anxiety. For the behavioral correlate to

procrastination, Silver (1974) had found in an earlier study that procrastinators tended to perform simpler portions of a task first. McCown et al. (1987) replicated this finding using an anagram task. They found that procrastinators were more likely than nonprocrastinators to perform the simpler portions of an anagram task before more difficult portions. For the cognitive correlate to procrastination, Aitken (1982) had found that procrastinators were likely to underestimate the time required to complete a task. McCown, et al. (1987) replicated this finding when they found that procrastinators were more likely than nonprocrastinators to underestimate the time required to complete a reading passage. Aitken (1982) had also found that procrastination was related to measures of impulsivity, outgoingness, and anxiety. McCown et al. (1987) reasoned that impulsivity and outgoingness were second order personality descriptions of the higher order personality trait of extroversion. They also reasoned that anxiety was a second order description of the higher order personality trait of neuroticism. McCown et al. (1987) compared scores on Aitken's Procrastination Scale (1982) to the extraversion and neuroticism scales on Eysenck's Personality Questionnaire, Revised (1985). Finally, they divided respondents on the procrastination scale into two groups. The group scoring in the highest quartile was labeled chronic procrastinators and the group scoring in the lowest quartile was labeled chronic punctuals. Results showed

that chronic procrastinators scored higher on both extroversion and neuroticism confirming the hypothesis. In addition, those people scoring lowest on the procrastination scale also had high neuroticism scores. The researchers suggest this describes the sort of anxious person who finds the stress associated with procrastination so aversive, they have developed a coping style that emphasizes early task completion. To avoid further anxiety, this person is chronically punctual.

In a second study, McCown, Johnson, and Petzel (1989) examined the typology of procrastination. Like Lay (1987), they assumed procrastination springs from a variety of sources. To determine the different types of procrastinators, a principal components analysis was carried out using Eysenck's Personality Questionnaire, Revised (1985). Also, to investigate the relationship between types of procrastinators and a number of hypothesized causes, participants were administered measures on depression, Type A and B personality, and three experimental time diagnosis scales.

McCown, et al. (1989) found three main types of procrastinators. Altogether, these different types accounted for 55.9% of the variance in procrastination scores. The first type had high psychoticism scores and moderately high extraversion scores. The researchers provided a number of characterizations for this type based primarily on alternate

ways of interpreting the high psychoticism scores. This type could be impulsive and distractable or so preoccupied with their own inner world that they do not complete tasks on time. On the other hand, this score could reflect a tough-minded attitude toward social pressures where the procrastinator only completes projects when they personally decide to do so. This type also scored high on the time diagnostic measure that assessed whether one had a subjective sense that time was out of one's control. This feeling may be due to some of the disordered thought processes associated with a high psychoticism score. The time scale has also been linked to under- or overestimating time intervals.

The second type loaded highly on extraversion and moderately high on neuroticism. The researchers characterized this type as someone who is outgoing, energetic, and slightly nervous. These people procrastinate because they take on too much. Supporting this was the finding that this type also scored high on the scale measuring Type A behavior.

The third type scored high on neuroticism, the Beck Depression Inventory (1972), and the time scale where time seems to be out of one's control. This procrastinator is characterized by a low energy level and depression. They may be preoccupied, socially isolated, and ignore time cues. Altogether, these results suggested procrastination, while similar in its behavioral manifestation, springs from a number of different causes. Finally, the researchers suggested

different treatment strategies for procrastination based on the different types.

Ferrari's studies

Studies conducted by Ferrari and his fellow researchers are among the more recent and extensive research programs on procrastination. While the research has covered a number of different topics, a major thrust of the research has been to examine the relationship between procrastination and self-presentational concerns. Specifically, he has empirically demonstrated a link between chronic procrastination and self-handicapping strategies. These strategies are used to protect the procrastinator's self-esteem and to create a favorable public impression while distancing him or herself from the negative consequences of task failure. Whereas the initial studies contained only suggestions of this idea and a considerable amount of other information on procrastination, as the research program progressed this formulation became more explicit.

An initial study by Effert and Ferrari (1989) focused on the relationship between decisional procrastination and a number of other personality variables. Decisional procrastination is indecisiveness or the inability to make decisions within a certain time frame. Like behavioral procrastination, it is defined as a purposeful delay that also results in subjective discomfort. It is distinguished from

behavioral procrastination in that it is cognitive and considered antecedent to behavioral procrastination.

According to Janis and Mann (1977), decisional procrastination is a maladaptive coping strategy for handling conflicts and the attendant stress. In their view, procrastinators either have or claim to have a tendency toward forgetfulness or absent-mindedness that explains their tendency to postpone making decisions. This view was supported by Lay (1986) who found that people who procrastinate on everyday tasks do report more cognitive failures like forgetfulness than nonprocrastinators. To further test this association, scores on Mann's Decisional Procrastination Scale (1982) were compared to scores on a Cognitive Failures Questionnaire (Broadbent, Cooper, Fitzgerald, and Parkes, 1982).

Burka and Yuen (1983) provide another reason for a procrastinator's delay. Some individuals chronically procrastinate in order to protect a vulnerable sense of self-esteem. By procrastinating, they are able to attribute any task failure to a lack of time. Self-esteem is protected because the rationale for task failure is lack of time not a lack of ability. A number of researchers have found a link between procrastination and low self-esteem. To further confirm this relationship, Effert and Ferrari included a measure of self-esteem (Rosenberg, 1965) in their study.

Finally, to compare decisional procrastination with a

behavioral measure, Effert and Ferrari used the Jenkins Activity Survey (1979). This survey measures Type A and Type B behaviors. Correlational analyses were performed between responses on all of the above cited scales to determine any significant relationships.

Results confirmed the hypotheses. Decisional procrastination had a significant positive correlation with cognitive failures and a negative correlation with self-esteem. Results showed decisional procrastination was related to speed and impatience at task deadlines-a Type A behavior. Decisional procrastination was also related to low competitiveness for tasks-a Type B behavior.

Effert and Ferrari portray the decisional procrastinator as someone who underestimates the time needed to complete a task (also supported by Lay, 1986), is unable to give the task adequate priority due to low competitiveness, and fails to evaluate or even forgets essential aspects of the task. As the deadline approaches, decisional procrastinators are then forced to work faster and so speed becomes paramount and impatience results. Task performance may be poor because insufficient time has been spent on critical task components and failure may occur. This, in turn, leads to a lowered sense of self-esteem.

In a follow-up to the previous study, Ferrari (1991a) examined decisional procrastination and its relationship to behavioral procrastination. He also sought to further

differentiate procrastinators from nonprocrastinators on the basis of a number of personality questionnaires and intelligence inventories. First, he found decisional and behavioral procrastination to be highly interrelated in terms of responses on Mann's Decisional Procrastination Scale (1982) and Lay's Behavioral Procrastination Scale (1986). Participants who scored high on one scale also tended to score high on the other. Second, he found procrastinators scored lower on self-esteem and higher on public self-consciousness, social anxiety, and self-handicapping measures than nonprocrastinators. Third, he found procrastinators were less information-oriented and more diffuse/avoidant-oriented in terms of their cognitive self-identity style. Finally, Effert and Ferrari (1989) found decisional procrastinators reported more cognitive failures such as forgetfulness. This study, on measures of verbal and abstract intelligence, found no significant difference between procrastinators and nonprocrastinators.

According to Burka and Yuen (1983), procrastinators are protecting a fragile sense of self-esteem. For the procrastinator, self-worth is strongly linked to their ability. Successful performance on tasks is indicative of ability. By delaying task completion, the procrastinator's ability is not directly tested so that self-esteem can be preserved. Based upon these ideas and the results from a series of studies (Effert and Ferrari 1989, Ferrari 1991a,

1991b, 1991c, and 1991d), Ferrari developed a profile of the procrastinator as an individual who has low self-esteem, strong self-presentational concerns, and a self-identity style which tends to avoid personally relevant information.

Findings from the following studies provide support for this profile of a procrastinator. Results from the previous study (Ferrari, 1991a) indicated procrastinators have the desire to present a positive public image. They scored high on scales measuring public self-consciousness and social anxiety. In results from other studies by Ferrari (1991c, 1991d), procrastinators also scored high on the Concern for Appropriateness Scale (Lennox & Wolfe, 1984). This scale assesses cross-situational variability in behavior in meeting different social expectations and the attention one pays to social appearance in everyday interactions.

In addition to self-presentational concerns, Ferrari found that procrastinators tended to have a diffuse/avoidant identity style (1991a, 1991d). Developed by Berzonsky (1989), identity style refers to ways in which the individual constructs, revises, and maintains his or her sense of self. As contrasted with the diffuse/avoidant style, the informational style actively seeks out, evaluates, and uses relevant information about the self. The strategy used to cope with stresses is a deliberate and problem-solving one. The diffuse/avoidant style is characterized by defensiveness, situation-specific responses, and procrastination. People

with this style tend to avoid self-relevant information. Consistent with a diffuse/avoidant identity style, Ferrari (1991d) found that procrastinators, when asked to help construct a test for integrative ability on which they and others would be evaluated, were more likely to select non-diagnostic items. Facing an evaluative task that they could design themselves, procrastinators chose questions that avoided potentially self-relevant information more often than nonprocrastinators.

Results from the 1991a study also showed procrastinators were more prone to self-handicapping strategies than nonprocrastinators. According to Arkin and Baumgardner (1985), self-handicapping reduces threats to self- and social-esteem by introducing inhibiting factors that interfere with performance. The introduction of external, interfering factors obscures the link between performance and ability. If failure does occur, the impact is lessened. Handicapping allows the person to sabotage their performance while providing another reason for failure besides ability. Thus, private self-esteem or public social-esteem would be maintained.

In Ferrari's 1991b study, participants were randomly assigned to one of four conditions in the performance of a cognitive task. The task was to be performed and evaluated either under public or private conditions and the task was to be either diagnostic or nondiagnostic of cognitive ability.

Participants were to chose whether they wanted or did not want the presence of a debilitating noise while performing the task. Choosing the noise was considered a self-handicapping obstacle that would impede performance on the cognitive task. After making their choices, participants were told the experiment was over.

Overall, procrastinators were significantly more likely to self-handicap than nonprocrastinators. Procrastinators handicapped most often (73.3%) when the task was private and diagnostic. This finding is consistent with the diffuse/avoidant identity style that avoids information regarding the self. Even though the evaluation of performance was to be private, procrastinators chose the debilitating noise. They may have wanted to avoid a direct diagnosis of their ability since poor performance would have threatened their self-esteem. Also, procrastinators were least likely to handicap in the private, nondiagnostic condition (20.0%) where there was the least threat.

In a public setting, according to Arkin and Shepperd (1988), people with high public self-consciousness and social anxiety, as in the case of procrastinators, will try to seek an edge and work under optimal circumstances. They try to present the favorable impression of a hard worker. Support for this view comes from Ferrari's 1991c study. In the 1991c study, a social ability task being rated by procrastinators as more attractive, personally relevant, and requiring less

effort than a cognitive ability task. Despite this, procrastinators chose to perform the more difficult cognitive task under public conditions.

In this study's experiment (1991b), procrastinators were less likely to handicap when the task's condition was public and diagnostic (35.7%) than when the condition was public and nondiagnostic (69.2%). The stakes were too high in a public and diagnostic condition to perform a task with the debilitating noise. To protect their social esteem, procrastinators were less likely to handicap their performance. Ferrari suggests the reason procrastinators handicapped more often in the public, nondiagnostic condition was also to maintain social esteem. By handicapping, they could distance themselves from the performance of a meaningless task.

From this series of studies, Ferrari characterizes the procrastinator as an individual who avoids direct, evaluative information about their ability by delaying on task performance. Using procrastination as a self-handicapping strategy, they attempt to protect their vulnerable sense of self-esteem and to maintain a positive, public impression.

Perfectionism

One widely held belief is that procrastination is the result of perfectionistic tendencies. Burka and Yuen (1983) suggested procrastinators place unrealistically high

expectations upon themselves. Burns (1980) also described a link between perfectionism and procrastination. Whatever its original source, the idea that perfectionism is one reason for procrastination has found its way into the general culture.

Despite its popularity as an explanation for procrastination by the lay public, empirical research has yielded equivocal results. Supporting the link between procrastination and perfectionism, Soloman and Rothblum (1984) found a group of procrastinators who delayed for Fear of Failure reasons. Among these reasons were perfectionistic standards for one's performance. Ferrari (1992a) also found a small but significant correlation between procrastination and perfectionism.

Results from other studies have not been as straightforward. Frost, Marten, Lahart, and Rosenblate (1990) developed their own multi-dimensional perfectionism scale and compared scores on their scale with scores on Soloman and Rothblums' (1984) academic procrastination scale (PASS). While they found that overall perfectionism was positively correlated to the perception that procrastination was a problem, it was not related to the frequency of procrastination. In addition, two of the perfectionism subscales contained within the overall scale, Personal Standards and Organization, were negatively correlated with procrastination frequency and its perception as a problem. The only perfectionism subscales to correlate with both

procrastination frequency and its perception as a problem were Parental Expectations and Parental Criticism. This mixture of findings, depending upon the subscale used, indicates that the relationship between procrastination and perfectionism is more complex than originally thought.

Ferrari (1992) also examined the role of perfectionism in procrastination. Consistent with his theoretical outlook, Ferrari views procrastination coupled with perfectionism as another self-handicapping strategy to protect self- and social-esteem. The perfectionistic procrastinator overworks certain task components at the expense of others. While this creates a positive impression of diligence in the eyes of others, it also increases the chance of failure for the overall task. This difficulty of the procrastinator in prioritizing and assigning the proper proportional time to tasks has been noted by other researchers. McCown, Johnson, and Petzel (1989) found that procrastinators spent a disproportionate amount of time with some projects as compared to others of equal importance. Lay (1990) found that procrastinators actually spent more time on projects self-rated as likely to fail than those rated as likely to succeed.

According to Ferrari, by working thoroughly on only certain tasks or task components, the procrastinator does not attribute failure to internal causes and, thereby, preserves self-esteem. Lack of success was not due to lack of effort since the person worked so hard, and it was not due to lack of

ability since optimal conditions were never reached. Instead, failure can be externalized to a lack of time. In addition, by working hard and to high standards, the procrastinator creates a positive impression and maintains social-esteem despite his or her inability to complete the task.

Results from Ferrari's 1992 study support his thesis. Procrastinators, as determined by Lay's Behavioral Procrastination Scale (1986), reported more perfectionism on Burn's unidimensional Perfectionism Scale (1980). Procrastinators also scored higher on self-awareness, self-presentation, and self-handicapping measures than nonprocrastinators. As determined by factor analysis, high perfectionism scores by procrastinators were also related to more public image variables than they were for nonprocrastinators. These findings lend support to Ferrari's contention that perfectionism for procrastinators is a self-handicapping strategy designed to obtain social approval by impressing others with diligent work. At the same time, self-esteem is salvaged because the excuse of not enough time is an external reason for failure.

Flett, Blankstein, Hewitt, and Koledin (1992) agree with Ferrari that perfectionism has both personal and social components. They also agree with Frost et al. (1990) that perfectionism is a multi-dimensional construct. Drawing upon the work of Frost et al. (1990) and their own research, their Multi-dimensional Perfectionism Scale (Hewitt, Mittelstaedt,

and Wollert, 1989) has three components: self-oriented, other-oriented, and socially-prescribed perfectionism.

Self-oriented perfectionism involves high standards and a motivation for the self to attain perfection. As Flett et al. (1990) note, this emphasis on intrinsic motivation and goal-directed behavior is antithetical to the delay and avoidance behaviors that characterize procrastination. Findings by Frost et al. (1990) support this view. Procrastination was negatively correlated with the Personal Standards and Organization subscales in their perfectionism scale. For this reason, Flett et al. (1992) did not expect procrastination to be related to self-oriented perfectionism.

Other-oriented perfectionism is when the individual expects others to be perfect. This perfectionism has been associated with punitive behaviors towards others. Other-oriented perfectionism was not expected to have a significant relationship to procrastination.

Socially-prescribed perfectionism is the perception that other people expect one to be perfect. This form of perfectionism was hypothesized to be associated with procrastination. Support comes, again, from Frost et al. (1990). The only perfectionism subscales from their instrument to positively correlate with both procrastination frequency and its perception as a problem were those measuring social relations-Parental Expectations and Parental Criticism. Ferrari's 1992 study also indicated another way perfectionism

can be related to social relationships-through self-presentational concerns.

Scores on the Multidimensional Perfectionism Scale along with Burn's unidimensional Perfectionism Scale (1980) were compared to scores on Lay's Behavioral Procrastination Scale (1986) and Soloman and Rothblums' Academic Procrastination Scale, the PASS (1984). For the Multi-dimensional Perfectionism Scale, only socially-prescribed perfectionism was positively correlated to the procrastination measures, thereby confirming the researcher's hypothesis. In addition, Burn's unidimensional perfectionism scale was also significantly correlated with the procrastination measures. To explain this finding, the authors reexamined Burn's scale and found items that reflected a fear of failure and its social consequences. They suggest that the Burn's scale is a combination of both the self-oriented and socially-prescribed aspects of perfectionism.

The association between procrastination and the perception that others have exceedingly high standards for the self gets additional support from Saddler and Sacks (1993). They also found that only socially-prescribed perfectionism was related to procrastination. Finally, Flett et al. (1992) suggest parallels between their findings and those of Milgram, Sroloff, and Rosenbaum (1988). Milgram et al. (1988) found that delay was related to "covert negativism". Covert negativism is the extent to which a task is perceived as an

imposition and the person resents being forced to do the task. It is similar though not the same as socially-prescribed perfectionism in that the individual believes other people are imposing unrealistic demands upon the self.

Passive-aggressiveness

Other research has produced findings that suggest procrastination is a method of expressing indirect aggression toward authority or hostility towards unreasonable outside demands. Lay (1986) found a positive correlation between procrastination and rebelliousness. In a later study, Lay (1992) found that procrastinators were more likely than nonprocrastinators to see tasks as imposed by others. Ferrari and Emmons (1994) suggested procrastination might be used as a form of revenge to seek equality in situations where the individual felt mistreated. While one sample did not show a significant relationship, another sample did show a significant positive correlation between procrastination and the tendency to seek revenge.

These findings provide support for the clinical connection between passive-aggressiveness and procrastination. Passive-aggressiveness is a resistance to other's demands. According to the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., 1980), this resistance is a way of passively expressing aggression. The DSM-III specifically

cites procrastination as one maneuver in which this aggression is manifested.

Other characteristics of the passive-aggressive disorder are reminiscent of findings on procrastination. For example, passive-aggressives lack self-confidence. Several studies have found a link between procrastination and low self-esteem. Passive-aggressives are pessimistic about the future. Lay (1992) found that procrastinators have a more negative outlook on life. Passive-aggressives also claim "forgetfulness". Lay (1986) and Effert and Ferrari (1989) found procrastinators self-rated themselves as more forgetful than nonprocrastinators. Since some of the defining characteristics of passive-aggressiveness are similar to tendencies found in chronic procrastinators, one therefore expects procrastination to be related to passive-aggressiveness.

Despite these similarities, few studies have directly assessed the relationship between passive-aggressiveness and procrastination. Milgram, Dangour, and Raviv (1992) found that passive-aggressiveness was related to procrastination only in specific circumstances. When participants were given an experimenter-determined schedule instead of a self-determined one and when they were allowed a discretionary period in which to start experimental sessions instead of a strict one, students with high passive-aggressive scores were more likely to delay than their peers. According to the

researchers, passive-aggressive resentment to authority was elicited by the experimenter-determined timetable. Instead of directly expressing their hostility by being late at the strictly set start times, passive-aggressive students covertly expressed their resentment by procrastinating only when a discretionary period was allowed.

In the earlier exploratory study on the development of this procrastination scale, Cohn, Carver, and Jones (1989) also found a significant positive correlation between passive-aggressiveness and procrastination. To further verify this relationship and because procrastination is a defining behavior of passive-aggressiveness, Jones' passive-aggressive scale (1987) was used in the present research as a validity measure for the procrastination scale.

Self-regulation

A number of researchers have examined the relationship between procrastination and various forms of self-regulation. Self-efficacy refers to a sense of one's personal mastery and a belief in one's ability to overcome obstacles and perform well at a given task. Self-control refers to one's ability to avoid the desire for immediate pleasure, exercise restraint, and endure unpleasant tasks in order to accomplish goals. Self-determination emphasizes the positive role intrinsic motivation has in reaching desired objectives. Each of these constructs refers to a motivational state where one initiates,

sustains, and completes actions with a persistent effort despite difficulties.

Since procrastination is the tendency to delay or avoid behaviors under one's control, it should be negatively related to self-regulating patterns of behavior. The following studies verify this. Tuckman (1991) and Ferrari, Parker, and Ware (1992) found procrastination was negatively related to self-efficacy measures. Ferrari and Emmons (1995) found a negative relationship between self-control and procrastination. Milgram, Dangour, and Raviv (1992) found procrastination was negatively related to the regulation of negative emotions in stressful situations.

In a study of self-determination theory and academic procrastination, Senecal, Koestner, and Vallerand (1995) examined four types of self-regulation that differed along a continuum of autonomy. Self-regulation types were determined by asking participants their reasons for going to school. Their responses were classified according to their motivations for attending. More procrastination was hypothesized for the less autonomous types of behavior (amotivation and external regulation). Less procrastination was expected for the more autonomous types of behavior (identified regulation and intrinsic motivation). In addition, the relationships between procrastination and anxiety, depression, and self-esteem were examined.

As predicted, less autonomous self-regulation types scored higher on the procrastination measures. Also, as expected, anxiety, depression, and low self-esteem were correlated with procrastination. The scores on these dispositional measures were then added together to yield a fear of failure score. To examine the unique contribution of fear of failure and of self-regulation styles to procrastination scores, a multiple regression analysis was performed. Fear of failure variables accounted for 14% of the variance while self-regulation variables accounted for 25%. In accounting for procrastination, the researchers suggest that the motivation behind the activity can be just as important as any dispositional factors when performing a task.

Finally, the researchers found, against prediction, that the identified regulation type was also associated with higher procrastination scores. Classified as an autonomous self-regulation style, identified regulation behaviors are recognized by the self as important, emanate from the self, and tie into the individual's personal values and goals. Only intrinsic motivation has more autonomy because, for intrinsic motivation, pleasure and inherent satisfaction are also part of performing the target behaviors. This finding indicates one of the reasons procrastination is so difficult to overcome and pervasive in society. For procrastination not to occur, the highest level of self-regulatory functioning is necessary.

Summary

In reviewing the research on procrastination, it is helpful to organize the wide variety of findings into the classification scheme used by Solomon and Rothblum (1984). Procrastination is intentional behavioral delay in completing tasks or projects. It also has a number of affective, cognitive, and behavioral correlates. In addition, some correlates are best described as motivational.

In terms of affective correlates, procrastination was consistently associated with depression and anxiety. The association with anxiety took many forms. Procrastination was significantly related to general anxiety, state anxiety, and anxiety-related physical symptoms. Procrastinators expressed anxiety over meeting their own internal standards and other's expectations. They experienced more test anxiety than nonprocrastinators as well as more anxiety in social situations. In addition, procrastinators had a lower tolerance for frustration (Muszynski and Akamatsu, 1991) and tended to avoid stressful projects.

While procrastination has been associated with depression and a lower energy level, it has also been linked to a heightened arousal state brought about by low stimulus screening. Procrastination's association with anxiety and, for some, neuroticism supports this. In addition, procrastination has been linked to higher psychoticism scores

for some and tentatively linked to passive-aggressiveness. Finally, procrastinators had more negative affect, less positive affect, and reported less life satisfaction than nonprocrastinators.

In terms of cognitive correlates, procrastination was consistently associated with lower self-esteem and lower self-confidence. Lower in stimulus screening, procrastinators also scored higher on measures of distractability. They tended to be forgetful and careless of the details of everyday living. Perhaps these factors contributed to their tendency to underestimate the time required for tasks.

Procrastinators were more indecisive than nonprocrastinators. Their method of obtaining and using information was more global and diffuse. They also tended to avoid self-relevant information.

In general, procrastinator's perceptions were more negative and their outlook was more pessimistic than nonprocrastinators. For example, procrastinators were more likely to anticipate that certain tasks would be aversive and themselves as less competent in performing them.

At the same time, procrastinators often had unrealistically high expectations concerning what they or others expect from task performance. The view of others was important to procrastinators. Compared to nonprocrastinators, procrastinators were more attentive to the awareness of others and more self-conscious about other's impression of them.

In terms of behavioral correlates, high procrastinators had poorer time management skills. They were less punctual, organized, and had poorer study habits. In their approach to tasks, procrastinators also differed from nonprocrastinators. They performed simpler tasks first, overworked some task components to the neglect of others, and rated themselves as spending less time and less adequate time on projects.

Procrastination was also associated with greater impulsiveness and lower self-control. In addition, procrastinators scored higher on measures of outgoingness and, for some groups, higher on measures of extroversion. At the same time, procrastination has been linked to avoidance tendencies. Perhaps procrastination results from taking on too many commitments for some while, for others, it is a tendency to avoid tasks. Finally, in behavioral terms, procrastination was associated with situation-specific responses and to the use of self-handicapping strategies.

A number of correlates of procrastination may be classified as motivational. Motivation involves the degree of persistence in reaching goals and the ability to stay on task despite difficulties. While each of the motivational correlates have affective, cognitive, and behavioral components, they also involve a willingness to initiate, sustain, and complete a set of actions in order to reach some goal. Not surprisingly, procrastination was negatively related to a number of motivational constructs. For some,

procrastination was related to a low level of energy. In general, procrastinators were more likely than nonprocrastinators to give laziness as a reason for their delay. They also scored lower on measures of self-control and self-efficacy. Compared to nonprocrastinators, procrastinators were less competitive with others and more likely to see tasks as imposed rather than freely chosen. Finally, procrastinators' motivations were more external and less autonomous than nonprocrastinators.

This brief listing of findings on procrastination covers an extensive range of topics. In some cases, this review noted results from only one study or two. In other cases, findings were more consistent across a number of studies. One reason for these disparate findings may be that a number of different scales have been used to measure procrastination. Each of these scales had limitations. For example, Aitken's Procrastination Scale (1982) had a large number of items that focused on tasks that apply only to university students. Solomon and Rothblum's PASS scale (1984) was also limited to academic situations. In Beswick, Rothblum, and Mann (1988), it did not correlate with the non-academic behavioral measure of procrastination. In addition, procrastination scores for the PASS scale were based upon self-ratings of frequency of procrastination and the extent to which procrastination was perceived as a problem. This method of scoring makes it more difficult to determine the attributes of procrastinators who

do not see their chronic delay as problematic. Mann's Decision-making Questionnaires (1982) are not widely available. In addition, they focused on cognitive indecision and did not attempt to measure behavioral procrastination. Lay's Behavioral Procrastination Scale (1986) was not limited to academic situations; however, it did not correlate with measures of academic achievement (Lay, 1990). Therefore, one purpose of the proposed research is the development of a psychometrically valid procrastination scale that will address some of the deficiencies in the other scales that have been noted.

First, psychometric scaling of a set of items previously generated to measure procrastination will be continued and completed. Second, the resulting scale will be compared to constructs previous research has shown to be related to procrastination. These constructs are self-esteem, self-consciousness, perfectionism, and passive-aggressiveness.

2. METHOD

Participants

Three hundred-thirty-eight college student volunteers (male=148, female=190) in undergraduate psychology courses at the University of Tennessee, Knoxville completed the questionnaire in exchange for nominal course credit. Three cases were not included in the analysis because of incomplete questionnaires. The average age of the participants was 26.2 years old and the median age was 22.0 years old. One hundred ninety-three respondents (53.7%) were classified as upper division students at the university.

Instruments

Students were asked to fill out a questionnaire that consisted of the procrastination scale in development as well as four other scales that previous research had shown to be significantly correlated with procrastination.

Procrastination Scale

The continued development of this scale was the focus of the present research. It consists of 22 items thought to indicate procrastination and yields a single, global estimate of self-reported procrastination. In an exploratory study

(Cohn, Carver, and Jones, 1989), an initial scale was reduced from 42 items to 22 items on the basis of a Likert analysis which used item-total correlations as the criterion for inclusion. This second version of the scale had a alpha coefficient of .86 and a mean inter-item correlation of .17. This version of the scale was used in the present study. Items for the Procrastination Scale are presented in the Appendix.

Self-Esteem Scale

In this 10-item inventory, participants respond either true or false to statements measuring self-esteem (Rosenberg, 1979). A sample question is "I have a low opinion of myself." Rosenberg (1979) reports this scale has a coefficient of reproducibility of .92 and a coefficient of scalability of .72.

Self-Consciousness Scale

This 23-item, 5-point inventory measures three separate subscales of self-consciousness (Fenigstein, Schier, and Buss, 1975). These are private self-consciousness (e.g. "I reflect about myself often"), public self-consciousness (e.g. "I am very concerned about the way I present myself"), and social anxiety (e.g. "I feel anxious when I speak in front of others"). Each subscale has acceptable test-retest reliability (private = .79, public = .84, social anxiety =

.73) and a whole scale test-retest reliability of .80 (Fenigstein, Schier, and Buss, 1975). Internal consistency scores have also been acceptable (Ferrari, 1992). Alpha coefficients on the subscales were .73 (private), .73 (public), and .69 (social anxiety).

Perfectionism Scale

This 10-item, 5-point inventory is a unitary measure of perfectionism (Burns, 1980). A sample item is "If I don't set the highest standard for myself, I am likely to end up a second-rate person". Burns (1980) found a test-retest reliability of .78 and an alpha coefficient of .70.

Passive-aggressiveness Scale

This 15-item scale is part of an inventory that assesses personality disorders and it measures the tendency toward passive-aggressiveness (Jones, 1987). Passive-aggressiveness is defined as indirect and symbolic aggression often against authority figures and includes, for example, turning in assignments late. A sample item is "Lots of people seem to feel they have a right to tell me what to do". This scale has been found to be reliable internally (alpha= .86) and over time (Cohn, Carver, and Jones, 1989).

Demographic and Validity Questions

A number of demographic questions were also included in the questionnaire. These were gender, age, major in school, classification in school, and the region where the respondent had grown up or spent the most time prior to turning 18 years of age. For validity estimates, respondents were asked to provide the following information: (a) whether they had ever turned an assignment in after the deadline; (b) an estimate of the percentage of assignments they had turned in late; and (c) an estimate of their overall grade point average (G.P.A.) in their college coursework.

Statistical Analysis

Responses to the procrastination items were subjected to a standard Likert analysis. Items were evaluated in terms of internal consistency as measured by item-total correlations and coefficient alpha. Correlations were performed on the relation between total procrastination scale scores and the concurrent validity comparisons (i.e. whether any assignments had ever been turned in late, estimated percentage of late assignments, and estimated G.P.A.) Finally, in order to assess construct validity, correlations were performed between the total score on the procrastination scale and the total score for each of the other substantive scales.

3. RESULTS

Reliability

The internal consistency of the procrastination scale was assessed using Cronbach's coefficient alpha. The coefficient alpha was .83. The mean inter-item correlation was .18. Only four items yielded coefficients below .20 for the corrected item-total correlations.

Validity

Concurrent Validity

Each of the concurrent validity measures was significantly correlated with the procrastination scale. The question "have you ever turned in an assignment in late" was significant at a $r = .19$ ($p < .001$). The estimated percentage of assignments turned in late correlated with the procrastination scale at $r = .35$ ($p < .001$). The estimated G.P.A. correlated inversely with the procrastination scale ($r = -.39$, $p < .001$). That is, students with higher procrastination scores had significantly lower grades.

Construct Validity

Two separate scales and two of the subscales from the Self-Consciousness inventory were significantly correlated

with the Procrastination Scale. These were Self-esteem ($r = -.42$, $p < .001$), Passive-aggressiveness ($r = .39$, $p < .001$), the Public Self-consciousness Subscale of the Self-consciousness Inventory ($r = .12$, $p < .032$), and the Social Anxiety Subscale of the Self-consciousness Inventory ($r = .22$, $p < .001$). The Procrastination Scale was not significantly correlated with Perfectionism ($r = -.02$, n.s.) or with the Private Self-consciousness Subscale of the Self-consciousness Inventory ($r = .02$, n.s.).

Demographic Variables

Of the demographic variables, only age was significantly correlated with the Procrastination Scale. Higher procrastination scores were associated with younger students ($r = -.15$, $p < .004$). All other demographic variables (major, year in school, and region where one grew up) as well as gender were not significantly related to scores on the Procrastination Scale.

4. DISCUSSION

The primary purpose of this study was to further determine the psychometric properties of the Procrastination Scale. Taken together, the results of the study supported the psychometric utility of the scale. The coefficient alpha and mean inter-item correlation were sufficient to meet conventional psychometric standards. Concurrent validity of the scale was supported by expected and significant relationships between the Procrastination Scale and G.P.A. and whether the respondent had ever turned in a late assignment and, if so, the estimated percentage of late assignments. In determining construct validity, personality measures that previous research had shown to be related to procrastination were also administered to participants. Correlation results between all of the personality measures except for the Perfectionism Scale supported the construct validity of this procrastination scale. A more detailed discussion of the specific results are presented below.

Reliability

To estimate the internal reliability of the scale, Cronbach's coefficient alpha and the inter-item total were calculated. The coefficient alpha of .83 indicates that the different items in the scale are essentially measuring the

same trait. The mean inter-item correlation of .18, although modest, does fall within an acceptable psychometric range. Perhaps one of the reasons this correlation was somewhat low is that procrastination is a multi-dimensional construct and the items included in the scale may reflect some of the different aspects of procrastination. This possibility deserves further consideration and has not been thoroughly explored as of yet.

Concurrent Validity

Three questions assessed the concurrent validity of the scale: 1) "Have you ever turned in a late assignment?", 2) "If so, please estimate the percentage of assignments turned in late, and 3) "Please estimate your overall grade point average". Each of these validity comparisons was significantly related to scores on the Procrastination Scale in the expected direction. The significant relationship between higher scores on the Procrastination Scale and lower grades illustrates one of the tangible negative consequences of procrastination.

Construct Validity

In terms of the construct validity of the scale, most of the current results agreed with results reported in previous

studies on procrastination. Just as in previous studies, the only demographic variable that was significantly related to procrastination was age. Younger participants reported higher procrastination. The finding that procrastination was unrelated to gender was also consistent with the vast majority of previous research results.

The pattern of correlations between the Procrastination Scale and the other personality measures included in the questionnaire also were generally consistent findings in the research literature. The present study indicated a significant negative correlation between procrastination scores and scores on the Rosenberg Self-Esteem Scale. This was the strongest correlation observed in this study. Low self-esteem has repeatedly been correlated with procrastination; thus, the finding in this study supports the construct validity of the scale.

Although the correlation was in the expected direction, Lay (1986) was the only study not to find a significant correlation between self-esteem and procrastination. One reason may be that Lay used the self-esteem subscale from the Jackson Personality Inventory (1967) whereas other researchers used Rosenberg's self-esteem measure (1979). Future research could ascertain the differences between the two measures, and these differences may shed more light on the nature of procrastination.

This study also included the Self-Consciousness Scale (Fenigstein, Schier, and Buss, 1975). As expected, the current research found significant positive correlations between procrastination and public self-consciousness and social anxiety. Also as expected, there was not a significant relationship between procrastination and private self-consciousness. This study corroborated the studies by Ferrari (Ferrari, 1991a, 1991b, 1991c, and 1991d) in this regard. As such, the present findings support the construct validity of this procrastination scale.

This study did not find a significant relationship between procrastination scores and scores on Burn's Perfectionism Scale. Although this result was not predicted in the current study, results in previous studies have been equivocal. Soloman and Rothblum (1984) found a small group of procrastinators who gave perfectionism reasons for procrastinating. Ferrari (1992a) found a small but significant correlation between perfectionism and procrastination. Frost, Marten, Lahart, and Rosenblate (1990) found perfectionism was related to procrastination being perceived as problematic but not to the actual frequency of procrastination. Subsequent research on perfectionism revealed that it was a multi-dimensional construct with self-oriented, other-oriented, and socially-prescribed components. Flett, Blankstein, Hewitt, and Koledin (1992) found procrastination was related to socially-prescribed

perfectionism only. Saddler and Sacks (1993) confirmed this finding. This distinction between types of perfectionism may explain the equivocal results relating procrastination to perfectionism in past studies. It may also explain why the current study did not find a significant relationship between the two since Burn's scale measures perfectionism as a unitary construct.

Since procrastination is one of the defining symptoms of clinical passive-aggressiveness, it was predicted there would be a significant positive relationship between a measure of passive-aggressiveness and this procrastination scale. Results confirmed this relationship and support the construct validity of the procrastination scale. In addition, at the time this study was conducted, there was no published empirical support that specifically examined the relationship between passive-aggressiveness and procrastination. Therefore, these findings are apparently one of the first to establish an empirical connection between passive-aggressiveness and procrastination.

Thus far, we have examined the results of this study and how they pertain to the reliability and validity of the Procrastination Scale. Now we may examine what these results reveal about the construct of procrastination in general.

One common element in each of the personality measures that was significantly related to procrastination scores is the role of others. Public self-consciousness is an

attentional orientation directed toward the self as it is viewed as a social object. Social anxiety is the feeling of subjective discomfort in a social setting. Passive-aggressiveness is also a reaction to another. By procrastinating, the individual may be acting out a resentment toward outside authority and a resistance to externally imposed demands. Self-esteem also derives in part from the opinion of others. In his work on self-esteem, Rosenberg was influenced by Cooley's idea of the "looking-glass self". According to this theory, one's sense of self is in large part derived from the reflected appraisal of others. A number of items in Rosenberg's Self-Esteem Scale directly assess the respondent's rating of how others view him or her.

There were a number of limitations to this study. First, there is the homogeneity of the sample. The participant population was drawn entirely from an academic setting. All questionnaires were distributed to students of various psychology courses at the University of Tennessee. As such, while the ages were more varied than those studies that assess only college underclassmen, the ages were still fairly uniform and in a relatively narrow age range. The sample was also homogenous in terms of the region where participants grew up. A little over three-quarters had been raised in the South. In order to more thoroughly assess the reliability and validity of the scale, more diversified samples need to be included.

Second, the results obtained are based on self-report measures so that responses given for the questionnaire may not accurately reflect actual behavior. Future research should include some behavioral measures.

Third, the concurrent validity questions relate to academic tasks only. Since procrastination is operative in a wide range of behaviors, future studies could include concurrent validity measures assessing procrastination on nonacademic tasks.

Fourth, for each of the variables used to assess construct validity for the Procrastination Scale, only one scale was included. Other independent scales measuring the same or similar constructs might improve the estimates of validity.

Despite these limitations, the present study clearly suggested the reliability of the Procrastination Scale and the validity of its interpretation as a measure of procrastination. Also, these results replicate and extend information about the personality syndrome which appears to accompany and possibly facilitate the development of procrastination including social anxiety, public self-consciousness, passive-aggressiveness, and (inversely) self-esteem.

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APPENDIX

APPENDIX

Procrastination Scale

Indicate how true each of the following statements are by using the following scale.

Please answer in the space provided to the left of each statement and use only whole numbers.

0-----1-----2-----3-----4
not very very
like me like me

- _____ 1. I frequently underestimate the amount of time it will take to complete a task.
- _____ 2. I often have a hard time determining what to do first.
- _____ 3. Frustration is a common feeling for me.
- _____ 4. I rarely make excuses for unfinished work.
- _____ 5. I am rarely behind schedule
- _____ 6. Sometimes I put off doing a task so long that I am embarrassed to do it.
- _____ 7. I avoid uncomfortable situations.
- _____ 8. At times, working under pressure makes me physically ill.
- _____ 9. "Never put off until tomorrow what can be done today" is my motto.
- _____ 10. Since I am usually behind schedule, I ask others to help me finish my work.
- _____ 11. I can't seem to get to work/school on time.
- _____ 12. I almost never procrastinate.

- _____ 13. Most of the time, I get things finished ahead of schedule.
- _____ 14. I'm good at rationalizing unfinished work.
- _____ 15. I'm usually not late for appointments.
- _____ 16. Most people would describe me as industrious.
- _____ 17. I plan my day carefully, so that there is a time to do everything.
- _____ 18. I think I have good problem-solving skills.
- _____ 19. I usually think things through before beginning a difficult task.
- _____ 20. I like challenging work.
- _____ 21. I tend to procrastinate too much.
- _____ 22. It's easy to put things off when no one is watching.

VITA

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