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**A Comparison of the Personal Constructs of Students Scoring High, Medium and Low
on a Measure of Academic Procrastination**

Jonathan Lee

**Masters Thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfilment of the requirements for the degree
Masters of Arts.**

Department of Psychology

Carleton University

November 16, 1999

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A Comparison of the Personal Constructs of Students Scoring High, Medium and Low on
a Measure of Academic Procrastination

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in Partial fulfillment of the requirements for
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Abstract

The purpose of this research was to examine the personal constructs related to academic procrastination. Forty-five undergraduate psychology students identified as either low, medium or high procrastinators as measured by the Aitken's Procrastination Inventory (1982) completed both Kelly's Repertory Grid (1955) and an association grid. Principal components analyses of the association grids identified that all three groups used the thematic labels of "Boring," "Negative affect," "Task aversiveness," and "Academic experience" to describe their academic tasks. However, low procrastinators differed in that "Positive outlook" and "Challenging" also emerged as labels applied to their academic tasks. This was contrasted with the thematic labels of "Repetitive" and "Task delay" which emerged for the medium and high groups, respectively. Laddering was utilised (Hinkle, 1965) in order to examine the superordinate constructs of the groups. Although the high procrastination group demonstrated heterogeneity within their higher-order constructs, themes indicating the importance of university and the long-term benefits of university emerged for the low group, and themes suggesting an external imposition of tasks, repetitiveness and difficulty in conducting research arose for the medium group. These findings are discussed with respect to Kuhl's theory of action and the personality characteristic of hardiness. In addition, the findings from the medium procrastination group are discussed and future recommendations are made for eliciting the superordinate constructs of the high procrastination group.

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A Comparison of the Personal Constructs of Students Scoring High, Medium and Low on a Measure of Academic Procrastination

Procrastination is a behaviour endemic in the academic domain. Research has shown that students who habitually procrastinate believe that their tendency to procrastinate significantly interferes with their academic standing, capacity to master classroom material and the quality of their lives (Solomon & Rothblum, 1984). Although the consequences of procrastination may be personally costly, Ellis and Knaus (1977) have estimated that over 70% of college students procrastinate on their schoolwork. Further more, Hill, Hill, Chabot and Barrall's (1978) study of college faculty and student procrastination showed that the amount of procrastination increases from the junior to the senior years. Evidence also suggests that procrastination may be detrimental to academic performance, possibly leading to greater course withdrawal and lower grades (Rothblum, Solomon & Murkami, 1986).

The effects of procrastination are not limited to negative academic outcomes. For example, Solomon and Rothblum (1984) found that students who procrastinate frequently believe that their continued inability to meet deadlines results in substantially increased physical and psychological stress. More recent research by Tice and Baumeister (1997) further supports this finding in their examination of academic procrastination. They found that, overall, procrastinators reported more illness than non-procrastinators and also reported receiving lower grades on all assignments.

So why do students procrastinate on their educational tasks especially when

this task delay and avoidance seems to jeopardise their academic standing and even their health? Researchers have identified a number of factors that they believe are causally related to procrastination. These include perfectionism (Ferrari, 1992b), impulsivity and sensation seeking, (Ferrari, 1992a), neuroticism (Schowenburg & Lay, 1995), extraversion (McCown, Petzel & Rupert, 1987), depression (Solomon & Rothblum, 1984), low achievement motivation (Briordy, 1980) boredom (Beswick & Mann, 1988; Blunt & Pychyl, 1998), self-handicapping (Ferrari, 1991a), self-consciousness (Ferrari, 1991a), low self-esteem (Ferrari, 1991a), self-doubt, (Burka & Yuen, 1983) low levels of motivation (Pychyl, Lee, Thibodeau & Blunt, in press), fear of failure (Solomon & Rothblum, 1984), anxiety (Schowenburg, 1992), task aversiveness (Lay, 1990; Blunt & Pychyl, in press), low self-efficacy (Tuckman, 1991), as well as irrational fears and self-criticism (Knaus, 1973).

A common feature of this research is that the variables related to procrastination have been identified using standardised scales of various personality attributes or aspects of the self. What is missing from this research is the individual's subjective construal of why he or she procrastinates. This subjective perspective would allow us to get some sense of the meaning that procrastinators attach to their procrastination. The purpose of this study was to shift away from the examination of the correlates of procrastination to determine the personal constructs of procrastinators with regards to their academic work.

Presented first is a review of the literature pertaining to some themes of procrastination which may be relevant to the understanding of the personal constructs of students' academic procrastination. Kelly's personal construct theory in relation to procrastination is then briefly summarized, followed by the method, results and

discussion of the present study.

Synthesis of Research in Procrastination

Many factors have been investigated in an attempt to understand procrastination. Although all of the research is important in some regards, discussed below are some of the more salient cognitive, personality and self-regulatory factors which have emerged from the research literature as being central aspects in our understanding of procrastination.

Cognitive Motives for Procrastination

Early investigations of procrastination, particularly by clinicians (e.g., Burka & Yuen, 1986; Ellis & Knaus, 1977), emphasized the role of the individual's thinking as a causal factor in procrastination. Subsequent research has revealed that a number of cognitive factors are related to procrastination including perceptions of task aversiveness, boredom, perceived control, self-criticism and fear of failure. Each of these are discussed below.

Research has shown that individuals tend to procrastinate more on tasks that they perceive to be more aversive. Task aversiveness has been defined as how unpleasant or unenjoyable a task is to perform (Solomon & Rothblum, 1984). For example, Milgram et al. (1998) examined the relationship between task aversiveness and procrastination by asking participants to rate the extent of pleasure they perceived to be associated with 54 different tasks. Of the 54 tasks, 38 were everyday tasks such as "paying bills" or "doing laundry," 10 were work-related such as "asking for a raise" or "preparing assignments" and 6 were academic tasks such as "checking for grades" and "being on time for lectures." Task aversiveness was found to be significantly

related to behavioural delay (i.e., procrastination) across all tasks and accounted for 33% of the explained variance in procrastination.

Task aversiveness has also been examined across the stages and dimensions of personal projects. Blunt and Pychyl (in press) used a project analytic approach to explore the personal project dimensions associated with task aversiveness across the stages of personal projects. Principal components analysis indicated that boredom, frustration and resentment emerged as dimensions associated with task aversiveness at each of the four major stages of project development (i.e., Inception stage, Planning stage, Action stage and Termination stage). In addition, each principal component associated with task aversiveness was also found to be positively correlated with procrastination.

Boredom is not only a personal project dimension related to task aversiveness, but it has also been found to be positively related to procrastination more generally. Studies by Lee (1997), Birch (1997) and Pychyl and Blunt (1998) examined the relationship of boredom and procrastination within the context of Kuhl's theory of action and state orientation. In these correlational studies, they administered the Boredom Proneness Scale (BP; Farmer & Sundberg, 1986), General Procrastination Scale (GP; Lay, 1986), the Adult Inventory of Procrastination (AIP; McCown & Johnson, 1989 cited in Ferrari et al., 1995), the Decisional Procrastination Scale (DP; Mann, 1982, cited in Ferrari et al., 1995) and the Action Control Scale (ACS-90; Kuhl, 1994) to their participants. The results showed that the Boredom Proneness scale correlated positively with all three procrastination scales thus suggesting that as boredom levels increase, so does procrastination.

Conversely, locus of control has been found to be lower in individuals with

high levels of procrastination. For example, Rothblum, Solomon and Murakami (1986) found that high procrastinators were more likely to attribute success on exams to more external and fleeting circumstances than low procrastinators. These findings were supported by Powers (1985) who found that internal locus of control scores were higher for non-procrastinators. Similarly, McKean (1990) found that academic procrastinators were found to display a significantly elevated expectation of task uncontrollability, a significantly greater level of active depression and lower grade point averages. These studies suggest that academic procrastinators approach their academic work with a negatively biased view of their capabilities for success. An external locus of control among procrastinators may result in excuses being made which may denounce task success on their part and confirm their expectations of task failure (Ferrari et al., 1995).

In a similar vein, self-criticism and irrational fears have also been found to be related to procrastination (Ellis & Knaus, 1977). Ellis and Knaus argued that procrastinators are frequently unsure of their ability to complete a task which subsequently results in their delay of task initiation. Research in this area has identified fear of failure as a popular cognitive motive resulting in procrastination. Because fear usually results in the avoidance of a particular stimuli, it is understandable why fear of failure with regards to academic work may result in procrastination.

Fear of failure as a motive for procrastination was demonstrated in a study by Solomon and Rothblum (1984). They investigated the endorsement of reasons for academic procrastination in 342 college students in the U.S. A factor analysis revealed that fear of failure accounted for 49.4% of the total variance in

procrastination. Essentially, students avoided doing assignments that they feared they could not complete adequately. This finding has been supported in other studies as well. Ferrari (1991b) found that when given the choice, procrastinators tended to work on projects that were characterised as being "easy" and did not require substantial effort, or which could be interpreted as being representative of their true ability. Conversely, non-procrastinators chose diagnostically relevant tasks that gave feedback with regards to self-relevant variables. Ferrari argues that by choosing these non-diagnostic tasks, these procrastinators were trying to avoid relevant feedback which they thought might be indicative of a lack of ability. In this regard, procrastination can be viewed as being protective, because procrastinators try to avoid any relevant feedback which may indicate a lack of ability or competence on their part.

Unfortunately for students, fear of failure does not seem to be an independent reason for procrastination, but rather it seems to accompany a host of other undesirable traits and affective factors which work together to promote this phenomenon. For example, Rothblum (1990) proposed a model of procrastination which encompassed other factors associated with procrastination and fear of failure. In her model, students who experience high levels of fear of failure also experience anxiety and worry as the deadline for their project, assignment, etc. approaches. They are only able to relieve themselves of this worry and anxiety by engaging in other activities unrelated to the task at hand (i.e., procrastinating), but, unfortunately, this results in a reinforcement for avoidance behaviour.

In sum, task aversiveness, boredom, locus of control and fear of failure have emerged from the literature as cognitive motives for procrastination. To the extent

that people procrastinate for these reasons, I might expect procrastinators' personal constructs to reflect task aversiveness and boredom such as "stressful" and "monotonous," respectively. Also, I might expect constructs to reflect locus of control and fear of failure such as "out of my control" and "incapable of completing properly," respectively.

Personological Explanations

A number of traits have been identified as correlates of procrastination. Although it is beyond the scope of this thesis to summarize all of this research, three key variables are presented below, as each has been demonstrated to account for a significant percentage of the variance in procrastination measures.

A trait which has been empirically shown to be associated with procrastination and fear of failure is perfectionism. Flett et. al (1992) describe two types of perfectionism: self-oriented and socially-prescribed. Self-oriented perfectionism has a positive intrinsic motivational attachment which is directed at meeting some type of goal. Individuals high in self-oriented perfectionism are very ambitious and conscientious and have a tendency of approaching, rather than avoiding, achievement situations. Conversely, socially-prescribed perfectionism is an amotivational state accompanied with a sense of helplessness about the inability to establish personal control over evaluative standards, and a sense of hopelessness about the inevitability of failure in the future.

A factor analysis in the study by Solomon and Rothblum (1984) (discussed above) revealed that perfectionism items loaded on a fear of failure factor that also included lack of self-confidence and anxiety about the ability to meet other people's expectations. A related study by Flett, Hewitt and Blankstein (1991), which examined

perfectionism and self-actualisation, confirmed that perfectionism and fear of failure are closely linked. Yet, other studies have shown that perfectionism is also associated with a host of other fears (Blankstein, Flett, Hewitt, & Eng, 1993, cited in Ferrari et al. 1995) and chronic worry (Meyer, Miller, Metzger, & Borovec, 1990 cited in Ferrari et al. 1995). Individuals described with a high level of socially-prescribed perfectionism tend to be quite neurotic and feel that they lack effective problem-solving skills required for success (e.g., Flett, Hewitt, Blankstein, Solnik & Van Brunschot, 1992).

The worry and neuroticism associated with perfectionism have also been demonstrated to be correlates of procrastination independent of a perfectionistic personality. Neuroticism and conscientiousness are two of the "Big Five" personality factors (Schowenburg & Lay, 1995) that have been found to be associated with procrastination. In two studies by Schowenburg and Lay (1995), students completed a measure of trait procrastination and the revised NEO Personality Inventory. Across these studies, similar results emerged. It was found that trait procrastination was highly related to a lack of conscientiousness. Trait adjectives highly related to trait procrastination included "undisciplined," "lazy" and "disorderly," and trait procrastination was found to be related to lower scores on each of the six facets of conscientiousness (i.e., competence, order, dutifulness, achievement-striving, self-discipline, and deliberation). Recent research by Lay (1997) confirms this relationship, and Lay argues that conscientiousness is the source trait for procrastination.

Neuroticism and conscientiousness were also found to be related to procrastination in a study conducted by Johnson and Bloom (1993), although they

were examining academic, rather than trait procrastination. In their study, 210 college students completed the Aitken (1982) measure of procrastination and the NEO-PI-R. Multiple regression procedures yielded conscientiousness as the major factor accounting for variance in procrastination scores with neuroticism also being significantly related to procrastination scores.

Another personality variable that has been found to be related to procrastination is low achievement motivation. Briordy (1980) found that students who self-reported frequent procrastination also showed less achievement motivation as measured by self-statements. Similarly, Sweeny, Butler and Rosen (1979) found a negative correlation between achievement motivation and self-reported procrastination. Aitken (1982) also found a negative relationship between procrastination (as measured by Aitken's Procrastination Inventory) and low levels of achievement motivation. More recently, Pychyl, Lee, Thibideau and Blunt (in press) utilised the experience-sampling method (Czikscentmihalyi, Larson & Prescott, 1977) to tap into the mood states of students at the time of procrastination. They found that procrastination was negatively correlated with motivation when sampled at the level of immediate experience.

Overall, this research demonstrates that perfectionism, neuroticism, conscientiousness and low achievement motivation emerge as dominant personality factors associated with procrastination. To the extent that people procrastinate for these reasons, I might expect procrastinators' personal constructs to reflect perfectionism and neuroticism such as "I don't want to do it unless I can do it as well as possible" and "I often feel like doing something else at the spur of the moment," respectively. I might also expect constructs to reflect low levels of conscientiousness

and low achievement motivation such as “undisciplined” and “passing the course is good enough,” respectively.

Self and Self Regulation

The third major factor related to procrastination that might be evidenced in the personal constructs of procrastinators is related to the theory of self-regulation. Self-regulation theory (e.g., Carver & Scheier, 1990) states that people monitor their behaviour with reference to what they want, making adjustments in behaviour in line with their goals. The key to this adjustment is the recognition of discrepancies between current actions and specific intentions. Behaviour is guided by a desire to reduce such discrepancies. Parallel to this monitoring system is a feedback process which concerns the rate at which one's behaviour is moving toward the goal. They argue that affect is a result of the feedback process, whereby progress greater than the standard is associated with positive affect, and progress less than the standard is associated with negative affect.

Negative affect as a result of substandard performance has been demonstrated in studies which have confirmed that procrastinators suffer from low self-esteem (Ferrari, 1991a), lower self-efficacy (Tuckman, 1991), higher levels of self-consciousness (Ferrari, 1991a) and self-handicapping tendencies (Ferrari, 1991a, b). Self-handicapping is purposely setting oneself up for failure (e.g., studying the night before for a final exam) and then using this poor method of preparation as an excuse for sub-standard performance. In essence, it is a way of protecting a vulnerable self-ego by avoiding diagnostic tasks.

Self-concept and its relation to self-handicapping and procrastination were investigated in a study conducted by Ferrari (cited in Ferrari et al., 1995). Ferrari

included multiple measures of self-evaluation and self-presentational tendencies in order to determine if there were any redundancies between self-concept and self-handicapping. A sample of 189 students completed the General Procrastination Scale (Lay, 1986), the Self-Esteem Scale (Rosenburg, 1965), the Beck Self Concept Scale (Beck, Steer, Epstein, & Brown, 1990), the Self-Handicapping Scale (Rhodewalt, 1990) and the Self-Concealment Scale (Larson & Chastain, 1990). In addition to these scales, subjects also completed the Beck Depression Inventory (Beck et al., 1979) and the Beck Anxiety Inventory (Beck et al., 1988). The results indicated that procrastinators tended to exhibit a greater tendency toward self-concealment, greater self-handicapping, lower self-esteem and a more negative self-concept as assessed by the Beck Self-Concept test. Separate analysis with the sub-scales of the Beck Self-Concept test showed that procrastinators are especially negative in terms of self-appraisal of work efficacy. However, procrastinators also have negative views of their intellectual ability and physical appearance. Hierarchical regression analysis also showed that the self-concept variable accounted for unique variance in procrastination scores, with the scores on the Self-Handicapping Scale and the Beck Self-Concept Scale attaining significance, even though depression scores had already been entered into the model.

Another unpublished study by Ferrari (reported in Ferrari et al., 1995) further explored the negative self-image of procrastinators. In this study, a sample of 121 students completed Lay's (1986) General Procrastination Scale, the Beck Depression Inventory (Beck, Epstein, Brown, & Steer, 1979), the Automatic Thoughts Questionnaire (Hollan & Kendall, 1980), Form A of the Dysfunctional Attitudes Scale (Weissman & Beck, 1979) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

As expected, procrastinators reported a significant number of negative thoughts about the self, accompanied by low self-esteem and higher levels of depression. A separate analysis of the Dysfunctional Attitudes Scale factor scores indicated that procrastination was not associated with dysfunctional attitudes involving performance evaluation, but was associated with dysfunctional beliefs focusing on the need for approval from others. Generally speaking, these findings suggest that procrastinators suffer from negative thinking patterns about the self (Ferrari, et al., 1995). Synthesizing the findings about procrastinators' beliefs about themselves, Ferrari summarized the results stating that:

The typical procrastinator is quite defensive about his or her shortcomings, especially in situations that involve some public form of evaluation. It is likely that this defensiveness stems from a diminished sense of self-worth that is central to the procrastinator's self-image (Ferrari et al, 1995, p. 80).

In sum, the literature on self and self-regulation has identified factors such as poor self-regulation, low self-esteem, self-handicapping and low self-efficacy to be related to procrastination. To the extent that individuals procrastinate due to these factors, I might expect procrastinators' personal constructs to reflect low self-esteem such as "too difficult for me" or "I lack confidence." I might also expect constructs to reflect self-handicapping and low self-efficacy such as "could do better if I studied" and "I don't know how to do it," respectively.

Conscientiousness and "Low" Procrastinators

The preceding research indicates that there are a number of reasons why people procrastinate. Although many of the cognitive, personality and self-regulatory

motives for high procrastinators have been discussed, very little is known about their counterparts, that is, low procrastinators. An examination of this group could help in furthering our understanding of high procrastinators by identifying characteristics that may be unique to these punctual, on-task individuals. To date, however, no studies have been conducted that have examined individuals who are consistently punctual in completing their academic tasks or getting started on their school work. In trying to get a better understanding of the low procrastinator, we can start by turning our attention to a foremost personality characteristic among this group, conscientiousness.

In an examination of the relationship between trait procrastination, conscientiousness and negative affect, Lay (1997) proposed that a lack of conscientiousness is the major source of the lower-order trait of procrastination. As discussed, Lay found that trait procrastination was negatively related to the conscientiousness factor and to each of its facets (i.e., competence, dutifulness, achievement-striving, self-discipline and deliberation). In addition, he found that both trait procrastination and low levels of conscientiousness were related to dilatory behaviour (i.e., engaging in behaviour necessary to reach some goal later than initially intended) and to general negative affect. Therefore, trait procrastination and low levels of conscientiousness exhibit comparable relations to dilatory behaviour and to negative affect supporting the hypothesis that a lack of conscientiousness is the proximal source of trait procrastination.

This finding was further supported in a study by Lay, Kovacs and Donato (1998) which demonstrated that a lack of conscientiousness is also evident in young children as a proximal source of trait procrastination. In this study, 280 children from grades 3-5 were administered self-report scales to assess trait procrastination and

conscientiousness. The results indicated that trait procrastination was highly negatively related to conscientiousness. Thus, as with adults, conscientiousness seems to be a major source of procrastination in terms of personality.

While a lack of conscientiousness seems to be a source trait in predicting procrastination, it can be hypothesised that low procrastinators score very high on this same dimension and on each of the facets of conscientious. Therefore, I hypothesize that low procrastinators' personal constructs will reflect competence and order such as "Always do my assignments well" and "Allot enough time to complete my tasks," respectively. Also, I might expect their constructs to reflect determination and self-discipline such as "Will succeed" and "Remain focussed," respectively.

Alternative Approaches to the Study of Procrastination

Common among the studies reviewed above is the use of standardised questionnaires to examine the correlates of procrastination. Although the use of standardized questionnaires have been a useful tool in the research of procrastination, it has also been limited because it has not provided insight into the procrastinators' perspective of their activities. A unique method which has provided a perspective on the individual's perceptions has been research conducted using the Personal Project Analysis (e.g., Lay, 1986). This method is discussed below in more detail.

Personal Project Analysis and Procrastination

The use of Personal Project Analysis (PPA; Little, 1983, 1989) has allowed for a further understanding of procrastination by providing personal project dimensions to individuals and allowing them to appraise each project on these dimensions. Personal projects are extended sets of personally relevant actions that personify the self-expressed goals of individuals (Little, 1983). Projects may be

regarded as ongoing tasks that people see themselves attending and showing a vested interest to in their lives. Some examples of personal projects from previous studies include “exercising more,” “studying harder,” “practice my faith” and “being a better person.” These projects are appraised on dimensions subsumed under a set of five generic domains consisting of project meaning, structure, community, stress and efficacy (e.g., Little, 1989).

Studies conducted by Lay (e.g., 1986, 1990) have utilised this method in examining procrastination and have derived unique findings in comparison to the generic use of questionnaires. For example, Lay (1986) administered the Personal Projects Analysis Project Rating Matrix to 94 undergraduate students in order to examine the ongoing projects of procrastinators and non-procrastinators. He found that high procrastinators were more likely to list vocational projects (e.g., deciding what career path to take) in comparison to low procrastinators, and they listed a greater number of hobby projects. However, low procrastinators declared more domestic projects, such as cleaning the house and fixing the lawnmower. An examination of the PPA dimensions indicated that high procrastinators, in comparison to low procrastinators, indicated that they spent less time and less adequate time working on their projects. In addition, it was found that low procrastinators’ ratings on the dimension of stress were positively related to the ratings on the “challenge,” “positive impact,” “time spent” and “absorption” dimensions. However, the relationship between these dimensions and stress for high procrastinators was not significant. Further, high procrastinators with more enjoyable projects tended to spend more time on them. However for low procrastinators, the relationship between the dimensions of “enjoyment” and “time spent” was non-significant.

The versatility and modularity of PPA has even allowed for the study of specific emotions associated with examining procrastination. For example, Lay (1990) administered the PPA project rating matrix to 70 college students in an attempt to determine whether trait procrastination was positively related to either dejection or agitation-related emotions. The results indicated that with short term projects, whether they were self-imposed or externally-imposed, trait procrastination was related to dejection-related emotions such as “exhilarated,” “hopeful,” “happy,” “sad,” “disappointed” and “disgusted” and unrelated to agitation-emotions such as “confident,” “relieved,” “worried,” “guilty,” “fearful” and “anxious.” However, long-term self-imposed projects were negatively related to dejection and unrelated to agitation. Finally, for long term, mutual or other-imposed projects, and with open projects without deadlines, trait procrastination was unrelated to both dejection and agitation. The results of this study contradict other studies that have used self-report measures and found agitation to be related to trait procrastination (Lay, 1988; 1992).

The use of PPA in examining procrastination was also used by Pychyl (1995). He used PPA to examine the subjective well-being of doctoral students and found a negative relationship between procrastination and self-identity. In addition, he found that the PPA dimension procrastination was negatively related to the ratings on the PPA dimensions absorption, enjoyment, progress, and time adequacy, and was positively related to negative impact, guilt and time conflict.

Although Personal Projects Analysis has proven itself to be a valuable tool and allowed for more flexibility in examining procrastination, PPA ascribes the project dimensions to the participants, not allowing them to elicit or supply their own labels. Earlier research on PPA by Cameron (1984) has revealed that the PPA

dimensions may be too restrictive. Cameron (1984) examined the extent of empirical correlations among the existing Personal Projects Analysis dimensions and people's personal constructs. The results of her research led her to identify additional common dimensions that could be incorporated into future studies with Personal Projects Analysis. For example, as a more specific measure of lack of project enjoyment, Cameron suggested that a dimension which assesses the "boring tediousness" of projects be included in PPA. Cameron states that an excess of tedium in a person's overall activities might suggest a change in activities is necessary to bring more interest and excitement into a person's life.

Cameron's research reveals the utility of a Personal Construct approach to the analysis of an individual's projects. This is not surprising given that the development of the PPA was influenced by Kelly's personal construct theory (Little, 1983). Both the PPA and the Rep Grid assume that an individual is capable of describing his or her feelings, concerns, thoughts, behaviour, etc; and that these need not be determined by indirect, somewhat mysterious means (Little, 1972). As well, both techniques use a grid structure to explore either the relationship which exists within the person's personal construct system or personal project system (Little, 1983). However, because the purpose of this research was to determine the different constructs used to describe the academic tasks of high, medium and low procrastinators¹, the Rep Grid was preferred, as it allows research participants to provide their own meaningful labels to the constructs they apply to their academic tasks.

Personal Construct Theory as an Approach to the Study of Procrastination

The theory of personal constructs focuses mainly on how individuals make sense of their world, or stated differently, construe their environment. Throughout his

theory, George Kelly (1955) proposed that our personality is the way we go about understanding our environment. He states that we have our own view of the world, our own expectations of what will happen in given situations and that our behaviour is our own continual experience with life (Kelly, 1955).

Kelly believes that our interpretation of the world is verbalised through constructs. Kelly offered many definitions for the term "construct." He claimed that a construct is "a way in which two or more things are alike and thereby different from a third or more things." Kelly claims that by affirming something we are also denying something else (Kelly, 1955). For example, when we say that Shawn is procrastinating, we are essentially stating that he is not getting down to work. Although the contrast poles are not always made evident, Kelly argues that we make sense out of our world by simultaneously noting likeness and differences. It is a result of this contrast that the usefulness of the construct exists. In essence, a personal construct attempts to inquire of people as to what they are thinking about and provides some sense of the meaning they attach to their activities and concerns (Little, 1983).

Personal construct psychology is based upon the "Fundamental Postulate" which asserts that a person's psychological processes are channelled by the way in which he or she successively construes events (Kelly, 1955). In the process of construing, people make discriminations between events within their personal environment. By noting that some events are similar to others in certain ways and thereby different from others, they are able to anticipate future events. For example, by noting that people who call themselves psychologists are similar in some respects and yet different from those who call themselves physiologists, we are able to make

certain predictions about the two groups of people.

Essential to the understanding of constructs is that construed similarities are not an objective part of any person, place or thing, but rather constructs represent each person's subjective personal abstractions. In essence, the extent to which two people are alike is the extent to which they both construe their environments in a similar way. This point serves as a guide in terms of what the present study was set out to explore. By contrasting the participants' constructs from the three groups of participants (i.e., high, medium and low procrastinators), it is possible to determine how they are distinct in terms of their personal construal of their academic tasks. For example, how do high procrastinators describe and make sense of their academic tasks which may have worked against their abilities to complete these same tasks, and how does their construals differ from that of the low and medium procrastinators. Therefore, noting similarities and differences in the construal of academic experiences among the three groups was a central aim of the present study.

It is important to note that any individual construct of any person is limited in its applicability to the elements of that person's experience. This is called the "range of convenience" for a construct which refers to that part of everyday life in which the construct is applicable (Bannister & Fransella, 1977). Beyond the range of convenience, the construct is irrelevant. For example, in constructing a grid consisting of constructs to do with psychology, it would not be logical to include secretaries or receptionists among the elements, because it would be impossible to construe the latter two as either a psychoanalyst or psychometrist; they clearly fall out of the range of convenience for this particular construct.

The range of convenience for a particular construct is usually determined by

means of a Repertory Grid which was developed by Kelly as a way of getting individuals to provide a coherent picture of certain people, places or tasks in their lives (Fransella and Bannister, 1977). Kelly stressed that the repertory grid is not a test, but rather a method in which its application involves variation in order to ensure that it is tailored to extract the type of information that the researcher and participant are interested in examining.

The standard form of the grid was aimed at helping the clients give the interviewer some of the constructs they apply to the people with whom they interact (Bannister and Fransella, 1971). The elements were chosen based on the area of interest that the interviewer wished to further investigate about the client. It has been very common to use the names of people as elements in the repertory grid technique, although recent studies have used for their elements information sources about food related risks (Frewer, Howard, Hedderley & Shepherd, 1995), teachers' description of arts, activities and artistic products (Hargreaves, 1996), and the description of accident scenarios (Calisir and Lehto, 1996). Despite the topic of interest, it is still required that the elements presented within the Rep Grid design be within the range of convenience of that particular clients constructs, and the elements should be considered representative of the population of elements that the participants would normally encounter within their daily life experiences.

In the standard Rep Grid, the person is presented with three of the role titles (i.e., the names of designated persons that the client felt appropriately matched the description of personality characteristics presented by the experimenter) or elements and are asked in which way two of them are alike but different from the third. On average, 15 comparisons are usually made as research has shown that exceeding that

number of contrasts does not result in additional constructs. The triad combination can be either random or designed specifically to examine the constructs between specific elements. Similarly, elements can be chosen by the researcher, elicited by the participant or the latter two possibilities can be combined when designing the Rep Grid. If the elements are chosen exclusively by the researcher, this is usually done with the intention of rooting out a representative variety of the person's constructs (e.g., including both positive and negative elements in the list, Cameron, 1984).

With regards to the elicitation of constructs, Kelly makes six assumptions that underlie the Rep Grid. He states that the constructs elicited should be permeable. By this, he means that the person should be able to apply these constructs elicited to other people or situations encountered in the future. It is also assumed that pre-existing constructs should be elicited, and that this method does not result in the proliferation of a new set of constructs which are not applicable to other people or daily life experiences of the participant. It is further assumed that the participant should be able to verbally express adequately the constructs elicited within the grid, and the participant must also be able to apply the constructs he or she has elicited to themselves. Lastly, the constructs elicited should be bi-polar, and the person's constructs should represent the way he or she interprets the world (Kelly, 1955).

Although the repertory grid technique and all of its assumptions are important in our understanding of the personal construct theory, a constituent part of this theory consists of the 11 corollaries which attempt to delineate humans as striving for personal meaning. These are: the construction corollary, the individual corollary, the organisation corollary, the dichotomy corollary, the choice corollary, the range corollary, the experience corollary, the fragmentation corollary, the commonality

corollary and the social corollary.

Although all of these corollaries contribute to the understanding of personal constructs, the *construction, individual and organisation* corollaries are most applicable to the present study. The construction corollary is relevant to the present study because as this research was interested in the verbal labels that the high, medium and low procrastinators assigned to the replicated themes of both academic and everyday tasks. The individual corollary was able to provide a personal constructs psychology explanation for why any differences may occur in the three group's construal of their academic tasks, and complemented the Rep grid approach in trying to explore the individual's world of meaning towards his or her academic and everyday tasks. The organisation corollary added to the individual corollary in that determining how the three groups of participants construed their academic tasks in different ways, allowed for an understanding of how they thought differently, through an examination of the hierarchical relationships of these same constructs. Each of these corollaries are discussed in detail below.

The *Individuality corollary* states that persons differ from each other in their construction of events. Each of us sees our situations through the "goggles" of our personal construct system. Although we may all experience a similar situation, we differ from others in how we perceive it, what we consider to be important about it, future implications, etc. When people are said to be similar, it is not necessarily because they have had the same experiences, but because they have placed the same interpretations on the experiences they have had. For example, two people may both receive a C+ on their mid-term exam. According to the individual corollary, one of these individuals may view the mark as an indication that pure rote memorisation is

not the best way to study for this subject which may make him eager to use a new method of studying for the next exam. For the other individual, this C+ may be interpreted as a reflection of her true intellectual capacity which may motivate her to procrastinate on future studying and employ self-handicapping techniques in order to protect her vulnerable self-ego.

The *Construction corollary* states that a person anticipates events by construing their replications. Based on this aspect of personal construct theory, the statistics exam on November 16th for the psychology student is not the same exam that she wrote on September 28th, but her use of the construct *exam* is an explicit recognition of some sameness, some replication which she wishes to affirm. In essence, this corollary is based on the idea of recognising themes. For some students, the construct *exam* may be associated with good grades. For the procrastinating student, however, the construct "exam" may be linked with failure and anxiety. We are essentially responding to what we interpret the stimulus or construct to be. To the extent that students associate those latter characteristics to an exam as opposed to the former, procrastination could be an habitual occurrence in their lives.

Finally, the *Organisation Corollary* states that each person characteristically evolves for his or her convenience and anticipation of events, a construction system embracing ordinal relationships between constructs. Although a common theme among academic procrastinators is that they severely delay and/or experience problems in completing their work, the etiology of this poorly developed work ethic differs from individual to individual. For example, a procrastinator may construe "studying for an exam" as being *uninteresting*. When asked "why the task is uninteresting", he may reply that he *doesn't like working on tasks that are forced upon*

him. When asked "why", he may reply that *the task is personally unmeaningful* in which subsequent probing may not reveal any direct answers. However, another procrastinator may construe the same task as being a *responsibility that they despise*. When asked "why", they may explain that despite studying, they *always end up failing*. When asked "why", they may state that they always end up failing because they *are not very smart* in which ensuing questions would not develop new responses. Each of these constructs as we go up the list can be viewed of as superordinate to the constructs below it, thus giving us a better understanding of the constructs individuals use to explain why they procrastinate when they are faced with studying for an exam. For the first individual, we were able to learn that she procrastinates on tasks which are not personally meaningful. In the case of the second person, it was discovered that he procrastinated due to low self-esteem. Although both individuals may be classified as procrastinators, exploring the hierarchical organization of their constructs (i.e., laddering) can be a useful method in determining a possible cause of their habitual dilatory behaviour.

Although these 11 corollaries were developed to complement the use of the Rep grid in psychotherapy, they are still applicable to research across many different domains. The flexibility of the Rep Grid has been demonstrated in its ability to adapt to different topics of interests and this adaptability is a central reason why it was chosen as the primary method in the present study.

The use of the Rep Grid in studying different topics has only been limited by the imagination of the principal investigators. For example, the Rep Grid has been used to assess the risk of driving and its impact on seat belt use. In a study by Calisir and Lehto (1996), the repertory grid technique was used as a main research

instrument for eliciting drivers' knowledge to explore the factors that have an impact on seat belt use. Upon the description of eighteen accident scenarios, a triadic elicitation method was used to elicit constructs from these participants by asking them to mention in what way two of the accidents were alike but different from the third. Eighteen criteria were elicited from the participants. In the following phase, each participant first rated the perceived importance of seat belt use in each accident scenario on a 7-point scale. Each participant then rated all accident scenarios on each criteria on a 7-point scale. Principal components analysis identified five factors underlying driver's risk assessments: severity, predictability/ foreseeability, fault, frequency/ unsafe behaviour, and hit/ air bag impact. The results also indicated that the perceived risk and perceived importance of seat belt use are influenced by situational factors: the direction of collision, the location of collision and the existence of an air bag system.

The Rep Grid has also been used to elicit the constructs of graduate nurses in relation to the feelings they experience in clinical practice. In this study by White (1995), graduate nurses were given a range of possible clinical situations which reflected all the possible skill areas that a practitioner could encounter and they were asked to identify actual clinical incidents that reflected these situations. Each situation was written on a separate card which constituted the elements and were used in a triadic card sort to create bipolar constructs. In the triadic card sort, participants were asked to take three of the cards on which a situation was written and to decide in which way two of the situations were alike and thereby different from the third. The participants then rated these bipolar constructs against all the situations on a seven-point scale to form the Association Grid. The construct pairs from the Association

Grid were then clustered and six themes emerged. These included feelings related to connectedness, job satisfaction, effectiveness, ability, threat to self and pressure of work.

Whereas the Rep grid has been used in examining the feelings that nurses experience in clinical practice, the Rep Grid was employed in the present study to also examine the thoughts and feelings of students with regards to their academic tasks and how it related to their tendency to procrastinate.

Summary and Research Hypothesis

Research in the area of procrastination has identified many personality, self-regulatory and cognitive motives behind people's tendency to procrastinate. However, missing from this research is the individual's subjective construal of why he or she procrastinates. As explained, the Personal Construct Theory is concerned with how individuals interpret their environment. Under this assumption, the Rep Grid was developed with the notion that individuals are capable of expressing their thoughts and feelings. The Rep Grid is unique in that it allows individuals to apply their own meaningful labels to the issue being investigated. It is also unique in that it is versatile and capable of being used to examine numerous domains of interest. Therefore, the Rep Grid was employed in the current study in order to determine how individuals who scored very low, average and very high on a measure of procrastination described their academic tasks. Although this research was exploratory with regards to the constructs that would be generated by these three groups of students, the guiding hypothesis for this study was derived from Kelly's theory of personal constructs. That is, the extent to which procrastinators and non-procrastinators are alike, they would construe their academic tasks in a similar way. It was expected that

those individuals scoring low on procrastination may construe their tasks as “Important,” “Always do my assignments well,” “Allot enough time to complete my tasks,” “ Will succeed” and “Remain focussed.” Conversely, it was expected that high procrastinators would construe their academic tasks as “Boring,” “Difficult,” “Stressful,” “Fear of failing,” “Unmotivated” and “Depressing.” It was also expected that the medium group of procrastinators would share a blend of constructs from both the high and low groups.

In the present study, there were three main steps of data collection. First, participants individually completed a paper-and-pencil form of the Repertory Grid. Second, an Association Grid was completed by all participants and this grid was factor analysed to determine underlying higher order constructs or factors. Finally, laddering was employed in which participants elaborated on how the factor structures which emerged from their Association Grid related to their academic punctuality or procrastination.

Method

Sample

The sample used in this study consisted of 45 undergraduate students: 27 females and 18 males. The mean age for the females was 24.0 (SD = 6.91) and 21.8 (SD = 2.84) for males. An independent sample t-test revealed no differences in the mean ages of males and females $t(37) = -1.62, p = ns$. Participants were comprised of students enrolled in Introductory Psychology (49.100) who participated in mass testing in the fall of 1998 and the summer of 1999. Participants in the summer session of 1999 received a grade-raising credit as an incentive for their participation, while those recruited from the fall session of 1998 volunteered their time, because no credits could be given, as they had already completed the course.

Of the forty-five students participating in this study, fifteen were high procrastinators, fifteen were medium procrastinators and fifteen were low procrastinators as identified by the Aitken's Procrastination Inventory (Aitkens, 1982). Keeping in mind the purpose of this study, students scoring at either the extremes (i.e., top and bottom 10 percentile) or within the "normal" range (i.e., $\pm .05$ standard deviations from the mean) from the mass testing results of the Aitken's Procrastination Inventory were recruited to ensure that the sample consisted of participants with extreme and normal levels of academic procrastination. This top10%, bottom 10% and mid-range selection of participants was more appropriate than a median split, because those individuals who scored within the mid range of the scale were not treated as either "high" or "low" procrastinators, but were treated as a separate group that was indicative of their scores, that is "medium" procrastinators. Therefore, the extreme samples remained extreme and were not mixed with

individuals with scores near the mean.

Materials

Participants were required to complete a paper-and-pencil form of the Aitken Procrastination Inventory, Rep Grid and then complete an Association Grid. A description of each scale is presented below.

Aitken Procrastination Inventory (API; Aitken, 1982). This scale was administered to all students in introductory psychology (49.100) during the fall term of 1998 and the summer session of 1999 in order to obtain the three groups of participants. The Aitken Procrastination Inventory consists of 19 items that are used for measuring academic procrastination in students (e.g., I delay starting things until the last minute). A total scale score is calculated by summing the 19 items (eight of which are reversed items). High scores on this scale are associated with procrastination. The Aitken's Procrastination Inventory was found to have a coefficient Alpha of .80 in the present study. This is consistent with the coefficient Alpha of .82 reported by Aitken in her original study (Aitken, 1982 as cited in Ferrari et al., 1995). The validity of this scale has been shown in studies which found the API scores to be related to self-reported measures of dispositional procrastination with 2 samples ($r = .72$, McCown, Johnson, and Petzel, 1989a; $r = .64$ McCown and Johnson, 1989b). It was also found among university students that the API scores loaded on excessive time constraints caused by university life, lack of accurate perception of time needed for tasks and commitments to non-college related tasks (McCown and Johnson, 1989).

In order to further test the validity of the scale in the present study, an additional question was added to the questionnaire. This question read " My tendency

to procrastinate is severely negatively affecting my school work” and was similarly rated on a 5-point Likert-type scale. For a copy of this scale, see Appendix A.

Repertory Grid. In order to obtain a representative list of academic tasks that university students are faced with on a regular basis, participants were provided with academic elements for their grid. These eight elements included (1) Learning material for an exam, (2) Reading a chapter in your textbook (3) Writing a paper for class (4) Going to class (5) Attending T.A. sessions (6) Reviewing class notes (7) Going to the library to find a journal/book and (8) Doing a class assignment. These elements were provided because they are typical academic tasks that undergraduate students are required to complete. Also, there was no way to guarantee that participants would have elicited these tasks if they had been prompted with a list of element titles (e.g., "an academic task that you complete every week") especially as many of these tasks may not be part of a “high procrastinator’s” weekly academic routine.

The remaining seven elements were provided by the participant with a verbal prompt (e.g., "a task you find interesting"). These element titles were chosen in order to generate tasks from the participants that they tended not to procrastinate from. A list of these seven element titles are presented below, as well as a list of procrastination correlates to which they are inversely related. These element titles were chosen in order to generate tasks on which participants tended not to procrastinate.

A task you consistently perform well. This element title was intended to elicit a task in which participants would experience high esteem. Those individuals who procrastinate due to low self-esteem doubt their ability to perform well on academic tasks, therefore this element title was chosen to determine the types of tasks that

participants would feel confident about (e.g., an activity related to sports or a specific talent they may possess) in order to compare the construct for these types of tasks against the constructs elicited for academic tasks.

A task for which you don't care about the outcome. Ferrari (1991b) states that those individuals who procrastinate due to fear of failure avoid tasks that may be indicative of their true potential or ability. If the individual is not concerned about the outcome of the activity, then she will not feel as if the task is a threat to her true capability.

A task you engage in and find pleasant or enjoyable. Task aversiveness is defined as how unpleasant or unenjoyable a task is to perform (Lay, 1990). This element title was aimed at eliciting tasks that the participants engaged in due to the positive affect associated with the activity.

A task you find personally meaningful. Pychyl (1995) found a negative relationship between procrastination and the PPA dimension of self-identity. Similarly, Blunt and Pychyl (in press) found that projects that were not personally meaningful were associated with task aversiveness. Because schoolwork is externally imposed upon an individual, this element aided in determining the types of tasks that participants found meaningful and initiated themselves, as well as providing a comparison of the constructs they applied to these types of tasks in relation to academic-related tasks.

A task in which you feel you are in total control. Powers (1985) found that internal locus of control was lower in procrastinators. These findings were supported by McKean (1990) who found that academic procrastinators were found to display a significantly elevated expectation of task uncontrollability and a significantly greater

level of active depression. Studies by Kobasa (1979), and Kobasa and Puccetti (1983) have also found locus of control to be a facet for the personality characteristic of “hardiness” which serves as a coping resource during times of stress. Therefore, this element was aimed at eliciting tasks that participants felt they were able to control even during times of pressure.

A task you find interesting. Boredom has been positively correlated to procrastination (Blunt and Pychyl, 1998). Kuhl (1994) also claims that engaging in boring tasks may impede one’s ability to work as he or she becomes engulfed in these tedious activities. Boredom then results in an inability to turn from the monotonous tasks to more exciting or interesting activities, resulting in procrastination. Therefore, this element was aimed at examining tasks that participants found fun or stimulating.

A task that you ensure is always performed properly. Schowenburg and Lay (1995) found trait procrastination to be associated with lower scores on the facets of conscientiousness (i.e., competence, order, dutifulness, achievement striving, self-discipline and deliberation). This element was included in order to determine the types of constructs that participants applied to tasks they spend time on in comparison to academic tasks on which they may have exerted less effort.

In addition to the mixed procedure of elements, a mixed design was employed which allowed for a determination of the constructs which related to procrastination. In order to do this, participants were provided with one construct; “procrastination.” By providing this construct, students were required to rate each element against the term “procrastination” which provided a measure of how much students delayed in their academic and daily tasks. Although the idea of supplying constructs may seem to contradict aspects of Kelly’s theory which emphasises the importance of allowing

individuals to apply their own meaningful labels to people, places and events, Bannister and Fransella (1977) argue that "It may be vital for you to supply her [the research participant] with certain constructs which will then be given personal meaning by being related to those elicited from her." For experimental purposes, the main interest of this study was in the constructs of students who scored high, medium and low on a measure of procrastination, therefore it was important to include "procrastination" as a construct in order to determine the extent to which it affected the participants' academic and daily tasks. See Appendix B for a copy of the Rep Grid.

Triadic Comparisons. The central method of eliciting the personal constructs of participants is by asking them to compare and contrast their supplied and elicited elements (Fransella & Bannister, 1977). This is a technique in which the participant is presented with three elements and asked "In which way are two of these alike in some important way that distinguishes them from the third?" This procedure is repeated numerous times and provides contrasting poles which are referred to as their bipolar constructs.

The results of a pilot study resulted in the addition of a supplementary text that was used for prompting participants during the triadic comparison. It was found that pilot-study participants provided constructs that were not related specifically to procrastination when prompted with the traditional phrase "How are two of these alike in some important way in which they are different from the third?" For example, when presented with the elements "Learning material for an exam," "Reading a chapter in your textbook" and "hanging out with friends," some of the bipolar constructs presented were "involves schoolwork" vs. "doesn't involve schoolwork" or

“involves reading” vs. “doesn’t involve reading.” Although these are all valid constructs, they would not add to the understanding of why students procrastinate on their academic tasks. Subsequent factor analysis of the participants’ grids may simply reveal that students procrastinate on tasks that involve reading.

This concern was posted on a personal construct psychology newsgroup on the internet. In response to the posting, a suggestion was made to remind the participants of the realm of discourse of interest. Multiple postings suggested that a “from the point of view” phrase be added to each triad of elements (e.g., In what way are two of these alike and one different from the point of view of why you may or may not procrastinate in doing them?). For the purpose of this study, this latter phrase was used in prompting clients to elicit their constructs. Although this is a variation of the original wording, the logic for doing so is supported by past research that specifically focus their clients on the issues so as to obtain constructs pertaining to these same issues (e.g. White, 1995; Calisir and Lehto, 1996).

Association Grid. Upon completing the Rep Grid, participants were then instructed to complete an association grid (See Appendix B for a copy of the Association Grid). In this grid, first participants compared each pair of bipolar constructs and indicated with a checkmark which construct they perceived to be more negative. This procedure was modelled after Sewell, Mitterer, Adams-Webber and Cromwell’s Omnigrid (1991) program. Participants then rated this negative construct against all of the elements on a seven-point Likert-type scale with 1 meaning not at all and 7 meaning that the construct strongly applied. This provided a better understanding of the elements, as each construct was rated on how well it applied to the elicited and supplied tasks. This method has been utilised in many previous

studies (e.g., Wilson & Retsas, 1997; White, 1988; Calisir & Lehto, 1996; Lester, 1998).

The association grid allowed for a statistical determination of the factors on which the different constructs loaded. Factors were determined through principal components analysis (PCA). Each participant's association grid was factor analysed then the participants provided factor labels for the emerging factor loadings.

Laddering. The laddering procedure was employed to better understand the constructs generated by the participant. Hinkle (1965) believes that each construct could be further explained by either higher order (superordinate) or lower order (subordinate) constructs. As discussed earlier, the laddering procedure requires the participants to answer "why" they used that construct in describing their tasks. For the present study, laddering took place after participants labelled the emerging factors from their association grid. This provided a more thorough understanding of the constructs participants used in describing their academic tasks.

Procedure

Participants scoring within either the top 90th percentile, mid-range (± 0.5 standard deviations from the mean) or bottom 10th percentile of the Aitken's Procrastination Inventory were contacted by phone and asked to participate in the study. An appointment, at the participants' convenience, was arranged for those who agreed to participate. After greeting the participants, they were given an informed consent form (See Appendix C) which they read and signed. Next, participants completed a demographics questionnaire asking them for their age, sex, GPA, and year of study.

Participants were then given a paper-and-pencil form of the Rep Grid to

complete. Participants were first instructed to supply a list of 7 everyday tasks that they engage in (e.g., A task that you find pleasant or enjoyable) and to write this along the top of the grid. On average, this task took participants approximately 10 minutes to complete. After supplying these seven elements for the grid, participants then elicited their constructs by conducting triadic comparisons between the pre-selected academic and everyday tasks in every row. Participants elicited their constructs by responding to the prompt “In what way are two of these tasks alike, and one different from the point of view of why you may or may not procrastinate in doing them?” After completing all fifteen triadic comparisons, participants then compared each bipolar construct and indicated with a check-mark the more negative of the two responses. An association grid was then completed in which participants rated this negative construct on a scale from 1 (not at all) to 7 (strongly applies) against all of the elements across the top of the grid. Participants were also presented with the construct “Procrastination” at the bottom of the grid. They were asked to write down what they perceived the opposite of this construct to be, and then to rate on the 7 point scale the extent to which they procrastinated on each of the elements. Upon completing this, participants were asked to wait for 10 minutes while a principal components analysis was conducted on their association grids. Participants were then presented with the factor structures and asked to supply a label that they thought best described the various factors. After supplying this label, a laddering procedure was used in which participants were asked “why” they described their academic tasks with these overall constructs. Finally, participants were given a debriefing form (See Appendix C) and thanked for their participation.

Results

Differentiation of the Three Groups Based on the Aitken's Procrastination Inventory

The classification of the three groups of participants was based upon their scores on the Aitken Procrastination Inventory. The mean score and standard deviation for procrastination for each of the three groups were ($\underline{M} = 68$, $\underline{SD} = 5.27$) for the high procrastination group, ($\underline{M} = 51$, $\underline{SD} = 3.21$) for the medium procrastination group and ($\underline{M} = 36$, $\underline{SD} = 4.06$) for the low procrastination group. The ratio of male to female participants was roughly equivalent in the high (8 females and 7 males) and medium procrastination groups (8 females and 7 males), but unequivalent in the low procrastination group (12 females and 3 males). An examination of the participants grades across the three groups revealed that GPA did not vary by sex ($t(43) = -.86$, $p = ns$) or by group ($F(2, 44) = ns$). Consequently the data from the male and female participants were collapsed together. Between group differences with respect to personal constructs were then explored irrespective of gender.²

An additional item was added to the standard items on the Aitken's Procrastination Inventory (API). The item "My tendency to procrastinate is severely negatively affecting my school work" was added to explore the extent to which students' academic task delay had a negative impact on their lives. In effect, this item explored the validity of the API in terms of grouping the participants. Participants rated the question on a five point scale (1 = False of me, 5 = True of me). A correlation of the overall scale score with this single item revealed a correlation of $r = .76$ $p < .001$ which indicates that the scale has reasonable external validity, and those participants who reported higher procrastination also felt more troubled by

their tendency to habitually put things off.

Differences in Procrastination Scores

In the mixed design grid that participants completed, they were presented with the construct “Procrastination” and they were instructed to indicate on a scale from 1 (not at all) to 7 (very much), the extent to which they procrastinated on their academic and everyday tasks across the three groups. In order to determine if there were any differences in the levels of reported procrastination on the academic and everyday tasks, ANOVAs were conducted for both sets of tasks across the three groups. The analysis yielded a significant finding for differences in reported levels of procrastination for academic tasks ($F(2, 44) = 21.63, p < .001$), but not for everyday tasks ($F(2, 44) = ns$). For example, on a scale from 1 (never procrastinate) to 7 (always procrastinate), the high procrastination group was found to delay the most on studying for an exam ($M = 6.0, SD = .84$) and writing a paper for class ($M = 6.0, SD = 1.51$). Follow-up comparisons (using Bonferroni's correction for family wise error) indicated that low procrastinators reported lower levels of academic procrastination than both the medium ($t(44) = -1.76, p < .001$) and high procrastinators ($t(44) = -2.23, p < .001$). However, there were no significant differences in the reported levels of academic procrastination between the high procrastinators and the medium procrastinators ($t(44) = -.47, p = ns$). Table 1 presents the means and standard deviations for differences in reported levels of academic procrastination.

The non-significant finding with respect to the mean levels of reported procrastination of everyday tasks across the three groups was expected, because these elements were elicited with prompts that define the antithesis of procrastination. For example, a participant indicated “Surfing the net” as a task that he or she found

enjoyable. This non-significant finding supports the validity of previous research which identified the causal factors related to procrastination.

Table 1.

Follow up Comparisons for Differences in Reported Levels of Academic Procrastination.

Group	Mean	Standard Deviation	Significance
Low vs. Medium	2.80 4.56	1.50 1.69	$t(44) = -1.76^{***}$
Low vs. High	2.80 5.03	1.50 1.61	$t(44) = -2.33^{***}$
Medium vs. High	4.56 5.03	1.69 1.61	ns

Note. ns = not significant *** < .001

Most vs. Least Procrastinated Tasks

The mean ratings of procrastination scores on academic and everyday tasks were then examined by group in order to obtain a better understanding of the tasks that the high, medium and low procrastinators were most and least likely to delay. The highest level of procrastination on academic and everyday tasks for the low procrastinators were “Reading a chapter in your textbook” ($M = 3.87$, $SD = 1.73$) and “A task in which you don’t care about the outcome” ($M = 4.47$, $SD = 2.17$), respectively. The lowest ratings of procrastination for academic and everyday tasks for this same group was for “Attending class” ($M = 1.47$, $SD = .64$) and “A task that you find pleasant or enjoyable” / “A task that you find interesting” ($M = 1.87$,

Figure 1.

Table 2.

T-tests of Reported Mean Levels of Procrastination on Academic Tasks for each group.

Group Comparisons	Exam	Text	Writing	Class	T. A.	Notes	Library	Assignment
Low & Medium	t (25.5) = -3.55**	t (28) = -2.70*	t (28) = -3.19**	t (28) = -2.25*	ns	t (23) = -5.55***	t (25) = -2.70**	t (25) = -2.70***
Low & High	t (28) = 5.01***	t (25) = -3.29**	t (27) = -5.55***	t (28) = -2.83**	t (26) = -1.46**	t (27) = -3.04**	t (27) = -5.07**	t (28) = -4.85***
High & Medium	ns	ns	ns	ns	ns	ns	ns	ns

Note. ns = not significant * < .05 ** < .01 *** < .001

SD = 1.30 and SD = 1.46, respectively).

Medium procrastinators reported procrastinating the most on the academic task involving “Reviewing class notes” (M = 6.00, SD = .93) and the everyday task in which they “did not care about the outcome” (M = 3.87, SD = 2.03). Conversely, their lowest ratings of procrastination in the respective domains were for “Attending class” (M = 2.60, SD = 1.84) and “A task that they found enjoyable” (M = 2.13, SD = 1.41).

Finally, the highest levels of reported procrastination for high procrastinators was for the academic tasks of “Learning material for an exam” (M = 6.00, SD = .85) and “Writing a paper for class” (M = 6.00, SD = 2.17) and for the everyday task in which they “did not care about the outcome” (M = 4.53, SD = 2.17). However, they were least likely to procrastinate on the academic task of “Attending class” (M = 2.87, SD = 1.81) and the everyday task that they found enjoyable (M = 1.93, SD = 1.22).

In order to examine which of the tasks were significantly different from one another on procrastination, a series of t-tests was conducted. These t-tests are presented in Table 2 and the accompanying figure presents the relative means for each of these tasks across the three groups. As can be seen in the accompanying table, there were no significant differences between the medium and high groups of procrastinators on their mean reported levels of procrastination on academic tasks. Essentially the medium and high group procrastinate equally across these various academic tasks. There were, however, significant differences between the low and medium procrastinators and the low and high procrastinators in their levels of reported procrastination on academic tasks indicating that the low procrastinating group is significantly different than the other two combined.

Everyday Tasks

In order to get an understanding of the daily tasks that the high, medium and low procrastinators were involved in, an overall and within group frequency count was conducted. This is presented below in Table 3 for each of the seven everyday activities participants provided. See Appendix D for a complete list of the tasks provided by all participants for each group. As can be seen in Table 3, some of the more popular everyday tasks that all three groups of participants seem to be involved in include housework, engaging in sports, working at their job and spending time with their family and friends. Examination of each group individually shows that the high and low group of procrastinators most often find themselves engaged in housework while the medium group of procrastinators are most often engaged in sporting activities.

Table 3.

Most Frequently Reported Everyday Tasks by Percentage

<u>Task</u>	<u>Overall</u>	<u>High</u>	<u>Medium</u>	<u>Low</u>
A task you find interesting.	Sports (17%)	Playing music (13%)	Sports (26%)	Reading for leisure (20%)
A task you consistently perform well.	Job (15%)	Job (20%)	Job (20%)	Organizing things (20%)
A task in which you don't care about the outcome.	Housework (24%)	Housework/Sports (20%)	Sports (26%)	Housework (26%)
A task you find pleasant or enjoyable	Sports (24%)	Reading for leisure (26%)	Sports (20%)	Sports (40%)
A task you find personally meaningful	Spending time with family/friends (22%)	Working with people /Spending time with family and friends (20%)	Writing to friends (20%)	Spending time with family and friends (33%)
A task you feel totally in control	Housework (16%)	School career/ Sports (13%)	Housework/ Sports (13%)	Housework (26%)
A task you always perform properly	Housework (24%)	Housework (20%)	Housework/ Taking a shower (13%)	Housework (40%)

Note. "Overall" refers to the task that was reported the most across all three groups.

Bipolar Constructs of Procrastination

In the mixed design Rep Grid that participants completed, they were presented with the construct "Procrastination" and asked to indicate what they perceived the opposite of this term to mean. An examination for thematic content was conducted by grouping similar factor labels together and subsequently applying a thematic label. This was done separately for each group thus allowing for a comparison of bi-polar themes.

Table 4.

Thematic labels by group for the bi-polar constructs of the term "Procrastination"

<u>Construct Themes for High procrastinators</u>	<u>Construct Themes for Medium Procrastinators</u>	<u>Construct Themes for Low procrastinators</u>
<u>Getting started immediately</u> To not put things off, do things as soon as you can. Immediate action. Not put things off until later when you could/should be doing them now.	<u>Getting started Immediately</u> Doing things immediately Immediately Doing something right on the onset Do it immediately when required.	<u>Determination</u> Determination Follow through Accomplish. Get done
<u>Early completion</u> To do things with time and space. Get it done reasonably ahead of time.	<u>Organised</u> Organised (x2) Efficient use of time Planning ahead Getting things done at the moment they are required.	<u>Organised</u> Organised (x2) To be organised, prepared and take responsibility. Keeping up with life's tasks by allotting a reasonable amount of time to each project. Doing on time, not putting off something.
<u>Positive work ethic</u> Conscientiousness Eagerness Committed Work hard Diligent Highly motivated Controlled Organised	<u>Positive work ethic</u> Just do it Focussed Diligence Motivated Doing the task	<u>Early completion</u> To complete ahead of schedule. Getting stuff done as soon as possible. I must do something immediately with time to spare. Doing things right away.
<u>Miscellaneous</u> Relaxing, accepted support from people around to do what you can do. Completion	<u>Miscellaneous</u> I can release	<u>Miscellaneous</u> Complaisant Responsible

across the high, medium and low group of procrastinators. The thematic labels that emerged for each group are presented below in Table 4. Themes such as “Organised,” “Getting started early” and “Positive work Ethic” were common and overlapped among the three groups. The unique theme of “Determination” emerged for the low group of procrastinators. This was comprised of the constructs “Determination,” “Accomplish,” “Get done” and “Follow through”. These constructs play a key role in distinguishing the groups, because the low procrastinators’ scores, as indicated by the API, suggest that their behaviour tends to be the antithesis of procrastination. Therefore, these bi-polar constructs that the low procrastinators provided for the term procrastination (e.g., Determination) could not only be understood as constructs they feel best explain the opposite of dilatory behaviour, but also as constructs that are indicative of their true thinking processes with regards to attending and completing tasks. That said, the medium and high procrastinators’ scores on the API suggest that their behaviour tends to be consistent with procrastination. The bi-polar constructs that they provided seems to be simply a desired reconstrual of their thinking processes regarding task completion. That is, the constructs they generated could be viewed as thought processes of punctuality that are not practised in their daily lives.

Thematic content for factor labels of academic and everyday tasks

Principal components analysis was employed in order to extract the maximum variance from the Association Grid by identification of the orthogonal components in each association grid (Tabachnick & Fidell, 1983). Varimax rotation was used in simplifying the factors by increasing loadings for variables with high correlations with a factor and minimizing other variables (Tabachnick & Fidell, 1983). Principal components with eigenvalues greater than one were extracted. On average, 3 factors

emerged from each participant's Association Grid. These factors were then presented to each participant and he or she was asked to provide appropriate labels, thus eliminating the possibility of subjective classification on the part of the researcher. The different themes for each group of participants were based upon a subjective clustering of the factor labels (i.e., factor labels expressing the same idea were grouped together and given a thematic title). The thematic labels that emerged from the association grid factor labels are reported in Table 5.

The themes of "Boring," "Task aversiveness," "Negative affect" and "Academic experience" emerged as common descriptions across all three groups of participants with regards to their academic tasks. However, unique to the low procrastinators were the themes of "Challenging" and "Positive outlook." The medium group produced the unique themes of "Routine" and "Unimportant." Not surprisingly, unique to the high procrastinators was the theme of "Task delay" in addition to "Pressure."

The unique group themes played a key role in distinguishing the three groups, because only the low procrastinators viewed their tasks in a positive manner (i.e., Challenging and Positive outlook) which could explain their ability in overcoming the desire to procrastinate despite viewing their tasks as also being "Boring" and "Aversive." Conversely, no such unique positive themes emerged for the low or medium group. The themes that emerged for the low and medium group (i.e., Unimportant, Pressure and Task delay) suggest that they think about their tasks in a negative light which may influence their tendency to procrastinate.

With regards to the everyday tasks of the high, medium and low procrastinators, there seemed to be a contradiction of themes that emerged. Themes

Table 5.

Thematic grouping of factor labels for academic tasks for each group.

<u>Low</u>	<u>Medium</u>	<u>High</u>
<u>Boredom</u> Tedious (x4) Monotonous Requires Motivation	<u>Boredom</u> Boring (x3) Unpleasantly boring Blankness Low interest Unmotivated (x2) Monotonous Disinterested	<u>Boredom</u> Boring(x2) Unstimulating Unmotivating tasks Stale
<u>Academic Experience</u> Study Exams Work/Studies Exam time School Workload	<u>Academic Experience</u> Work Deadlines Open-ended Reinforcement Controlled	<u>Academic Experience</u> Schoolwork Work/Studies Time management Critical events Important Self-monitoring
<u>Task aversiveness</u> Unpleasurable Hideous tasks Unpleasant Reading unpleasurable material	<u>Task aversiveness</u> Difficult Intensive labour Drain on mental resources Stressful on mind and body Time consuming Hard Nuisance	<u>Task aversiveness</u> Overwhelming Exhausting Depressing Hard work Difficult
<u>Negative affect</u> Discouraging Depressing Really Depressing Stressful	<u>Negative Affect</u> Frustrating (x2) Negative Feelings Stressful Tiring Isolating	<u>Negative Affect</u> Stressful Negative stimulus Unenjoyable
<u>Positive Outlook</u> Pure determination Career oriented Requirement for life Important Pleasurable		

Table 5 continued

<u>Low</u>	<u>Medium</u>	<u>High</u>
<u>Challenging</u>		
Managerial		
Responsibility		
Challenging		
Time Managing		
Attention		
Critical thinking		
	<u>Routine</u>	
	Ritualistic duties	
	Repetitive	
	<u>Unimportant</u>	
	Blankness	
	Pointless	
	Waste of time	
	Can be delayed	
		<u>Pressure</u>
		Obligation
		Outside pressure
		Duty
		<u>Task Delay</u>
		Means to procrastinate
		Lazy (x2)

Note: In cases where more than one participant indicated this factor label, the number is provided in brackets next to the factor label (e.g., x2 for 2 participants).

from the low procrastination group included “Important”/ “Unimportant” and “Pleasurable”/ “Negative self-state.” Themes for the medium procrastinators included “Unimportant” and “Displeasureable,” yet also “Rewarding.” Finally, the themes for high procrastinators included “Leisureliness,” yet “Pressured” and “Aversive”. The thematic labels which emerged from the association grid factor labels for everyday tasks are presented in Table 6. This contradiction of themes can be explained by examining the types of everyday tasks that participants supplied. It will be recalled from Table 3 that tasks such as housework, working at my job and organizing things were some of the popular everyday tasks provided by all three groups of participants. In addition to these tasks were activities that could be viewed as being more stimulating such as engaging in sports, reading for leisure and spending time with their family and friends. Therefore, this contradiction of themes could be explained as there were a combination of everyday tasks provided by participants (e.g. “Job”/ “Reading for leisure” and “Spending time with family and friends”/ “Housework”) that could explain the emergence of these conflicting themes such as “Important”/ “Unimportant” and “Pleasurable”/ “Negative, respectively.

Table 6.

Thematic grouping of factor labels for everyday tasks for each group.

Low	Medium	High
<u>Unimportant</u>	<u>Unimportant</u>	<u>Task aversiveness</u>
Pointless (x2)	Duties that can wait	Lazy (x2)
Unimportant (x2)	Can be put off	Depressing
Irrelevant	Can be delayed	Mundane
Unmeaningful		Not needed
		Uninteresting
		Limiting
<u>Importance</u>	<u>Displeasure</u>	<u>Leisure</u>
Job is a requirement for life	Non-enjoyable	Leisure activities
Future life orientated	Monotonous	Convenience
Personal interests	Isolating	Light work
Responsibility	Drain on mental resources	
	No reinforcement	
<u>Negative Self-State</u>	Difficult	
Lazy	Time consuming	
Discouraging		
Confusing	<u>Rewarding</u>	
Lonely	Enjoyable	
Unpleasant	Satisfaction	
<u>Pleasurable</u>		
Enjoyable		
Pleasurable		
Interesting tasks		
Pleasurable activities		
<u>Boredom</u>		
Boring		
Uninteresting		

Task Laddering

Hinkle (1965, cited in Fransella & Bannister, 1977) introduced the technique of laddering as a form of construct elicitation in which the person indicates his or her higher order (superordinate) or lower order (subordinate) constructs. For the purposes of this study, participants laddered upwards in order to provide information about the superordinate constructs underlying their academic and everyday tasks. “Superordinate” constructs are thought to be immutable and impermeable constructs that act as the psychological foundation behind our thinking (Fransella & Bannister, 1977). For this technique, participants were asked “Why” they felt either their academic and/or everyday tasks could be described using the factor labels that they provided. This process of asking “why” was repeated until the participant either could not provide an answer or was unable to think of new responses.

The superordinate constructs were examined among the low, medium and high group of procrastinators in order to determine whether these three groups shared similar or different higher order thinking processes regarding their academic tasks. Overall, it was found that low procrastinators and medium procrastinators differed in the superordinate constructs used to describe their academic tasks.

For the thematic label of “Boring,” superordinate constructs for the medium group seemed to suggest “Repetition” and a “Dislike” for their academic tasks. In addition, similarities in the superordinate constructs for the medium group were found for the theme of “Task Aversiveness” in which the superordinate constructs indicated a “Difficulty in conducting researching.” Finally, the superordinate constructs for the theme of “Routine” suggested an external imposition of tasks.

For the low procrastinators, the superordinate constructs for the thematic label of “Boring” suggested “Repetition”. In addition, the superordinate constructs for the

thematic groups of “Positive outlook” and “Challenging” denoted the “ Importance of university” and the “benefits of university in the long run,” respectively. It is important to note that there were no similarities in the superordinate constructs used by the high procrastination group for their academic tasks. Table 7 presents the superordinate constructs for the common and unique themes for academic tasks.

These superordinate constructs further demarcate the low procrastinators from the medium and high procrastinators, as these results suggest that the long term benefits and importance of university serve as the main thought processes influencing low procrastinators in their academic pursuits. This can be contrasted with superordinate constructs from the medium group of procrastinators which suggested an “external imposition of tasks,” a “dislike for academic tasks” and “repetition”; all of which are acting as the main thought processes influencing their academic tasks and possibly influencing their tendency to procrastinate.

Table 7.

Superordinate constructs used in describing common and unique themes for academic tasks.

<u>Low</u>	<u>Medium</u>	<u>High</u>
<p><u>Boredom</u> Repetitive Do them so much Pays off in the end To do things right, good to have different aspects and requires a-lot of research. It takes more time and there is a lack of knowledge on how to do them Has to be handed in</p>	<p><u>Boredom</u> Repetitive Repetitive Doesn't appeal to me I don't try on things I don't like Don't find I'm getting anywhere but I have to do it No professor will be impressed with you No responsibility for actions A working job is reinforcement but that is a long time away I have negative expectations I've come this far and I might as well put in the time so I don't have any regrets</p>	<p><u>Boredom</u> Like to see immediate results Stepping stone for further studies. Focussed more on my interests and what I want to be taught as oppose to courses which are less interesting. To be happy, I must max out mypotential regardless of the grade I get. You don't have to understand it, just memorize it.</p>
<p><u>Academic Experience</u> Feel challenged. To complete requirements for the degree. Have to study and do other things. It's hard to motivate yourself. Hard to figure out what teachers want you to learn Amount of work I have to do</p>	<p><u>Academic experience</u> Always marks involved and marks to be lost if you don't meet deadlines. Work has to be handed in on a specific date, no choice. Training mind to think in different patterns. You get feedback as to how you did on the test. Assignments and projects are set out over long period of time.</p>	<p><u>Academic experience</u> Easier transition from school to permanent work. Expensive going to school, Not partaking in discussion, just learning. Would like to learn something else. Do it because you want to.</p>

Table 7 continued

Low	Medium	High
<u>Task Aversiveness</u> Find it difficult to study for exams. Dealing with people who are stupid. Information not useful in the job force. Can't get motivated to read it.	<u>Task Aversiveness</u> Hard to concentrate when people are chattering behind you. Things keep coming Complete repetition and not learning much out of it Limited resource pool and trying to write paper and not being able to find resources can be stressful. Trying to find resources. Difficulty in doing them and no reward for hard work. Shouldn't be put off.	<u>Task Aversiveness</u> It's there and immediate. Thinking a-lot is exhausting. Knowledge gained is lost in competition for grades Dedicate a-lot of effort. Have to think as oppose to multiple choice.
<u>Negative affect</u> Hard to take notes and it's a waste of time having to rewrite notes. Have to force myself No imagination High expectations of myself. Do tasks alone	<u>Negative affect</u> Fear of failure Easier, out of sight, out of mind. Professor may cut you down I know things would not get done if I work in a group setting. Have to use my head so much Scared to omit things	<u>Negative affect</u> Always find something else to o. Try to make people feel dumb. Need to balance work and schoolwork
<u>Positive Outlook</u> Gives you complete explanation of things University is career-oriented Need education to survive Important to self to get good marks I take everything seriously		

Table 7 continued

<u>Low</u>	<u>Medium</u>	<u>High</u>
<u>Challenging</u>		
Help me in the long run		
In order to achieve what I want to achieve		
Never did in the past and now I do and now my marks are good.		
Long run, it will be beneficial		
Need to do things without being Distracted.		
All deductions and coming up with Answers.		
<u>Routine</u>		
They tell you what to do.		
Because it's assigned.		
<u>Unimportant</u>		
No responsibility for actions.		
No point in doing it if I won't get a grade.		
Feel safer in a group environment.		
Won't significantly affect the outcome.		
<u>Pressure</u>		
Necessities to finish course.		
Way I like to do things.		
Won't be able to perform on exams the way you are able to.		
<u>Task Delay</u>		
People judge me by my marks in university		
Hard time doing academic tasks.		
Not as pleasurable		

Discussion

The purpose of this study was to explore the personal constructs of procrastinators. In this study, a range of students with procrastination scores from extremely low to very high were divided into three groups and examined. Overall, the results indicate that there are differences between the low procrastinators and the high procrastinators in terms of the way they construe their academic tasks. The low procrastinators as a group are differentiated from the medium and high procrastinators in that they construe their academic tasks as being challenging and having long term benefits. In order to understand how this construal of academic tasks may lead someone to procrastinate or may protect them from task avoidance we need to consider a theory of action and an explanation from a personality based perspective.

Boredom, procrastination and the effects of long term goals

The high, medium and low procrastinators all experienced boredom in the construal of their academic tasks. Boredom is said to lead to a procrastination like mode called state orientation by attending to tedious, repetitive or boring activities (Kuhl, 1994). These activities shut down a hypothesized system called the supervisory control system which inhibit the individual from switching to a more pleasant task. Kuhl and Eisenbeiser (1986, as cited in Kuhl & Beckmann, 1994) tested this hypothesis and found that after performing a tedious activity, state oriented individuals tended to continue with the task rather than switch to a more interesting activity when given the chance. Although these individuals may have wanted to switch tasks, hesitation imposed state orientation kept them in the boring task. Kuhl also proposes that state oriented individuals tend to overcommit themselves to goals

that are falsely internalized. Overcommitment is expected when a distinct form of state orientation is caused by wrongly accepting external suggestions as being self-compatible (Kuhl, 1994).

As elucidated by Kuhl, it appears that attending to academic tasks that were construed as being “Boring” impaired the volitional system of the medium and high procrastinators resulting in procrastination. However, this same explanation does not account for why the low procrastinators supervisory control system was not impaired considering the low group of procrastinators also construed their academic tasks as boring. In order to understand the low procrastinators’ ability to stay on task despite construing their academic work as boring, the unique themes that emerged for the low procrastinators should be addressed.

In addition to the theme of “Boring,” low procrastinators also construed their academic tasks as “Challenging” and “Positive outlook.” The superordinate constructs of the low procrastinators further revealed that they construed university to be important and to have many long-term benefits. Therefore, although the low procrastinators construe their academic tasks as boring, their supervisory control systems remain intact because they also find their academic tasks challenging, and are able to see the long-term benefits of school. Whereas the low procrastinators construed their academic tasks in a positive manner, the high procrastinators also provided constructs that suggested they were compelled into attending university, which could further explain their susceptibility to procrastinate.

Some of the unique thematic labels that emerged for the high group of procrastinators suggested that they construed university as not being forced upon them. In today’s society, a high priority is placed upon education and the urge to

attend college or university after the completion of high-school even though it may be incongruent with the plans of the individual. Evidence of high procrastinators viewing their academic tasks as falsely internalized is demonstrated in the emergence of the thematic label “Pressure” which consisted of the factor labels “Outside pressure,” “Obligation” and “Duty.” This suggests that high procrastinators differ from the low procrastination group in that they are more likely to falsely accept the responsibilities of university as being self-initiated which may result in state-orientation.

Kuhl also claims that another reason why procrastination may occur is that falsely internalized goals are often associated with an underspecification of rules or conditions for successfully completing the task. This underspecification of rules may have resulted in the tasks becoming arduous for the high procrastinators and may explain why they construed their tasks as “Hard,” “Difficult,” “Overwhelming” and “Exhausting.” Therefore, it appears that this “underspecification of rules” may affect the way medium and high procrastinators construe their academic tasks, thus acting as an impediment towards task completion.

In sum, Kuhl’s theory of action helps to explain how the construal of academic tasks as being “Boring” may result in procrastination for the medium and high group of procrastinators. Whereas the volitional system of the low and medium groups of procrastinators may have been impaired as a result of attending to boring tasks, low procrastinators may be able to maintain this control mechanism because of the long term goals that keep them vigilant. In addition, constructs such as “Pressure” and “Duty” that emerged from the high group of procrastinators, suggest a falsely internalised set of goals with regards to their academic tasks, and as explained by Kuhl’s theory of action, also results in procrastination.

Challenge and its Role in Task Completion

The characteristic of challenging was found to be a factor label and a thematic label among low procrastinators. It appears that the low procrastinators construe their academic tasks as challenging and attach long term goals to their academic tasks. In order to understand how construing challenge in their tasks may mitigate against procrastination, we must consider a personality factor that has been demonstrated to protect individuals from stress. Specifically, Kobassa's work on hardiness may give us a clue as to how challenge may function to protect the low procrastinators from task delay despite task boredom and stress.

Kobassa (1979, 1983) argues that hardy individuals are those individuals who in the face of high stress do not get sick. The reason for remaining healthy is a result of a constellation of the personality variables: control, commitment and challenge.

their academic tasks such as “Challenging,” “Pure determination” and “Critical thinking” which suggest that these individuals are ready to meet the challenges that university life imposes upon them and not to avoid engaging in the tasks they have to complete in pursuit of their goals.

It is possible to speculate that this notion of hardiness influenced the results found in Tice and Baumeister’s (1997) study on procrastination, illness and health. In their two longitudinal studies, they examined the effects of procrastination on stress and health. In their first study which occurred early in an academic semester, it was found that procrastination was negatively correlated with stress and with symptom reporting. In essence, procrastinators experienced significantly less stress and fewer symptoms than non-procrastinators. However, in their second study, which occurred late in the second semester, procrastinators suffered significantly more symptoms and more stress than non-procrastinators. Procrastinators also visited health-care professionals for illness more often. In sum, it appears from Tice and Baumesiter’s (1997) study that non-procrastinators remained more healthy than procrastinators when faced with the stress of school life supporting the notion that aspects of the hardy personality may serve as a plausible explanation as the reason why low procrastinators remain healthy.

Although research may suggest that hardy individuals are able to remain healthy, Kobasa et al, (1983) claim that persons low in hardiness tend to view life experiences as boring, meaningless, and threatening. They also claim that individuals low in hardiness tend to retreat from overwhelming situations due to their powerlessness and interact with their environment unenthusiastically. Among the medium procrastinators, factor labels such as “Boring,” “Waste of time” and “Difficult”

emerged. Among the high procrastinators, “Boring” and “Overwhelming” were identified as key themes. The results of the present study indicate that individuals who scored high on the Aitken Procrastination Inventory were essentially stating that they “delay starting things so long that they don’t get them done by the deadline” and that they often “delay even when they know that they really need to get the job done”. Therefore, these self-reported descriptions of tardiness coupled with thematic labels indicative of unenthusiasm and threat (e.g., Boring and Overwhelming) suggest that medium and high procrastinators lack hardiness and are unable to rise above the stresses and difficulties of academic life.

Another possible interpretation of the low procrastinators’ construal of their academic tasks as “challenging” is found in Little’s (e.g., 1989) study of personal projects. Little (e.g., 1989) reports that the Personal Project Analysis (PPA) stress factor traditionally consists of the PPA dimensions of stress, difficulty, and challenge. Project stress dimensions assess to what extent the demands of an individual’s projects exceeded his or her capacity to cope with them. Therefore, scoring high on the dimensions of challenge, stress and difficulty would suggest that an individual is involved in a project beyond his or her capabilities. In the present study, low procrastinators viewed their tasks as stressful and challenging. However, the challenge dimension espoused more of a positive role. The thematic label of “Challenging” consisted of the factor labels “Challenging,” “Critical thinking,” “Managerial,” “Responsibility,” “Time managing,” and “Attention;” all labels that appear to be conducive to task completion. Challenge denotes that life events are perceived as stimulating, rather than as threatening. Therefore, challenge is perceived as a normal part of the growth experience that provides an opportunity for further

development cognitively and psychosocially (Kobasa et. al., 1983). In sum, it appears that “Challenge” emerged from the low group of procrastinators as a positive way of construing their academics and may have facilitated their ability to complete their tasks, despite experiencing stressful and difficult moments.

Conscientiousness and Low Procrastinators

A main hypothesis presented in this study was that low procrastinators were highly conscientiousness individuals. The emerging constructs generated in this study suggest that this hypothesis was supported as low procrastinators demonstrated self-discipline, achievement striving and order as defined by Lay et. al. (1998).

A main characteristic of conscientious individuals is the ability to work on necessary things despite boredom or distraction (i.e., self-discipline) (Lay et al. 1998). Some of the factor labels and thematic labels that emerged from the low procrastinators were “Boring,” Task aversiveness” and “Negative feelings,” all of which could serve as distractions in trying to initiate or complete an academic task, especially since these same constructs emerged for the high and medium procrastinators. However, additional factor labels that emerged from this group such as “Pure determination,” “Responsibility,” and “Time managing” coupled with their low scores on the API suggest that this group of low procrastinators have self-discipline in their academic tasks.

Conscientiousness individuals are also thought to be organised and methodical (orderly) and ambitious and determined (achievement striving) (Lay et al., 1998). These two facets of conscientiousness were found in an examination of the low procrastinators’ bi-polar constructs for the term “Procrastination.” Because the low procrastination group’s score on the API was very low and suggested that they tended

not to procrastinate, then the constructs they provided for the term “Procrastination” may not have been bi-polar constructs, but rather their actual thinking processes that affected their ability to complete tasks on time. Therefore, the thematic label of “Organised” which consisted of the constructs “Organised,” “To be organised, prepared and take responsibility,” “Keep up with life’s tasks by allotting a reasonable amount of time to each project” and “Doing on time, not putting off something” seem to be congruent with Lay et. al’s. (1998) definition that conscientiousness individuals are organised and methodical. In addition, the thematic label of “Determination” which consisted of the constructs “Determination,” “Follow through,” “Accomplish,” and “Get done” are also consistent with the definition of conscientious individuals as ambitious and determined (Lay et al, 1998). Therefore, these constructs seem to support the work by Lay (1997, 1998) who argues that conscientiousness is a discriminating factor in distinguishing between high and low procrastinators.

Exploring what makes the Medium Group of Procrastinators Different?

This study was unique in that previous research examining academic procrastination has limited their samples to only high and low procrastinators (e.g., Lay, 1986; Ferrari, 1991b; Pychyl et. al in press). In the present study, medium procrastinators were included into the analysis in order to understand the reasons for academic procrastination from a group that has usually been omitted from procrastination research. It was originally hypothesised that the medium group would share similar constructs with both the high and low procrastinators. Consistent with the hypothesis, it was found that medium procrastinators shared similar factor labels with both the low and high procrastinators. The thematic groups that emerged for the medium procrastinators in describing their academic tasks were “Boring,” “Task

Aversion,” “Negative affect,” “Academic experience,” “Routine” and “Unimportant”.

Therefore, it is not surprising that this group tends to procrastinate occasionally considering that such negative themes emerged for their academic tasks. These negative factor labels which emerged for the medium procrastination group seem to be consistent with previous research that has examined the dimensions associated with task aversiveness. In a study by Blunt and Pychyl (in press), it was found in the association between task aversiveness and various PPA dimensions that “Boredom” and “Negative emotions” among others, varied across the stages of project development. Each of these dimensions identified with task aversiveness were also positively correlated with procrastination. Therefore, it would appear that the addition of thematic labels such as “Routine” and “Unimportant” would complement the previous themes of “Boring” and “Negative affect” which have been found to be positively correlated to procrastination and serve as an impediment towards a positive work ethic. The same way that low procrastinators are more willing to work on tasks that they find “Career oriented “ and “A requirement for life,” medium procrastinators may be more inclined to occasionally procrastinate on their academic tasks that they construe as being “A waste of time,” “Pointless” and “Repetitive”.

Further analysis of the constructs used by the medium group was done by examining their superordinate constructs. Discussed below are the results of the laddering procedure by group and the themes that emerged from each group’s superordinate constructs.

Laddering

The procedure of laddering was utilized in order to generate the higher order constructs that guided the participants in their reasons for either procrastinating or

completing their tasks on time. In order to examine the superordinate constructs from all participants, they were repeatedly asked “Why” they described their tasks with the constructs noted in their Rep Grids. The themes that emerged from the superordinate constructs of medium procrastinators for their academic tasks were “External imposition of tasks,” “Repetition,” “A dislike for their academic tasks” and “Difficulty in conducting research.”

The superordinate theme of “External imposition of tasks” implies that the medium group procrastinates on tasks which they feel they are forced to do. This theme can be understood as a reason for procrastination by looking back at Kuhl’s theory of action and his notion of falsely internalised goals which states that individuals tend to procrastinate on projects which they view not to be compatible with their perception of self.

Similarly, Kuhl’s theory of action also explains how the superordinate theme of “Repetitive” may facilitate in an individual’s tendency to procrastinate. As discussed, Kuhl claims that state-orientation can occur by attending to tedious, repetitive or boring activities. These types of tasks shut down the supervisory control system which inhibit the individual from switching to a more pleasant task subsequently resulting in procrastination.

Finally, the themes “A dislike for academic tasks” and “Difficulty in conducting research” suggests that the medium group have aversive feelings with regards to their school work. It could be hypothesized that one of these superordinate constructs is a result of the other; that is, medium procrastinators may dislike their academic tasks, because they find it difficult to research relevant topics, or visa-versa. Regardless of the direction of causality between these two superordinate constructs,

they both express notions of task aversiveness which has been found to be positively related to procrastination (e.g., Milgram et. al., 1998; Blunt & Pychyl, in press).

The superordinate themes which served as the underlying reasons why participants provided their constructs was also examined for the low group of procrastinators. For the low group, their superordinate constructs such as “Long term benefits of university” and the “Importance of university” were consistent with their unique factor labels of “Career oriented,” “Requirement for life” and “Important”. These superordinate constructs further complemented the unique theme of “Determination” which emerged from their bi-polar constructs of procrastination. Because the low group’s superordinate themes were very similar to their unique factor labels, this suggests that an important emphasis on the significance of university serves as an underlying construct in their view of school which may facilitate in their ability to remain focussed on their work and properly manage their academic schedules. In addition, these unique superordinate constructs such as “Long term benefits of university” and the “Importance of university” which differentiated the low procrastinators from both the medium and high procrastinators may also serve as marker constructs in future research that may be indicative of academically punctual individuals, as these latter constructs appear to help the low group stay on task. In sum, it appears that individuals who are able to foresee the importance and long terms benefits of something may be more likely to work through difficult and trying moments in order to reap the rewards that lay ahead at the completion of the task.

Contrary to the low and medium groups, no common superordinate themes emerged for the high group. This lack of consistency within the high group can be explained by looking at the individuality corollary which states that no one is likely to

be a carbon copy of another person and that each of us lives in what is ultimately a unique world, because it is uniquely interpreted and thereby uniquely experienced (Bannister & Fransella, 1971). At the level of the factor label, the high group shared similar descriptions of how they viewed their academic tasks. However, it appears that at the superordinate level, differences emerged in the higher order thinking that influenced their attitudes and lack of actions towards their academic tasks.

The lack of homogeneity in the high group's superordinate constructs can be compared to the work of Mandel and Marcus (1988) who have examined over and underachievers. Mandel and Marcus (1988) found heterogeneity in terms of the characteristics that constitute underachievers. Essentially there was no one thing that defined them. However, they noted that the most homogenous group was the overachievers, similar to the low procrastinators in the present study. In addition, they found that overachievers were also similar to low procrastinators in that they reported high levels of conscientiousness. Mandel, and others who have done research in the area of underachievement, have tried to address this issue by looking at different types of underachievers (e.g., the anxious underachiever). Perhaps, future research in the area of procrastination needs to build on the work of Ferrari and others who have identified arousal, decisional and self-handicapping procrastinators, because understanding the constructs of these types of procrastinators may explain why there was heterogeneity among the superordinate constructs in the high group. Because the API was not designed to screen for these types of procrastinators (i.e., arousal, decision and self-handicapping procrastinators), the high procrastination group may have been very heterogeneous. Therefore, at the superordinate level, the emergence of different thought processes for different types of procrastinators may have emerged

resulting in the disparate constructs.

Limitations of the Present study

Because research has found procrastination to be used as a defensive mechanism (Ferrari, 1991b), and to be correlated to low self-esteem and self-doubt (Ferrari, 1991a; Burka & Yuen, 1983), two questions that need to be addressed are: 1) To what extent were participants systematically biased in their responses of why they procrastinated?; and, 2) Was the data influenced by a need for cognitive consistency? The medium and high procrastinators may have been more likely to endorse reasons that maintained their self-esteem (e.g. finding the task "Boring" or "Unstimulating"), as oppose to violating their pride and expressing their true sentiments because "To procrastinate in order to preserve one's self-esteem and at the same time to endorse reasons that threaten one's self-esteem is illogical." (Milgram, Batori and Bowrer, 1993).

A study conducted by Milgram et. al. (1993) examined the reasons that academic procrastinators assigned for their dilatory behaviour. It was found that the less-threatening reasons received greater endorsement than the more threatening ones. According to Milgram and his colleagues, the seven most endorsed reasons for procrastination referred to an inefficient management of time (*I thought I could do it at the last minute; I had too many things to do; I didn't manage the time well*). The other four highly endorsed reasons were of mild to intermediate threat to self-esteem; *I delayed because I wanted the work to be perfect* (self-aggrandizing aspiration that does not detract from one's self-esteem); *I had no energy to sit and study; I had difficulty in handling the material* (both are inefficiencies that may change for the better); *I resented having to do something that doesn't interest me* (Unstable

dispositional characteristic associated with task aversiveness). The least frequent reasons referred to fear of failure, average academic aspirations and a lack of academic ability; all reasons that carry a substantial threat to one's self-esteem.

In order to explore the possibility of bias in the data collected, the classification method used by Milgram et. al. (1993) was utilised in the present study in which all of the factor labels within each group were examined and subjectively classified as being either 1) non-threatening, 2) mildly threatening or 3) substantially threatening to self-esteem. Consistent with Milgram's research was that the medium and high procrastinators also applied factor labels that were generally considered unthreatening to their self-esteem. From the medium procrastinating group, the most frequent factor labels were applied to the thematic label of boring (27%). In total, 31 of the 37 factor labels (84%) could be considered non-threatening to the self-esteem while 6 (17%) could be classified as carrying a mild threat to one's self-esteem, (e.g. Uncertainty, Intensive labour, Difficult). For this group, none of the factor labels were seen as carrying substantial threats to one's esteem. That is, they were more situation based as opposed to personally based. Similarly, among the high group was the finding that factor labels deemed non-threatening to one's self-esteem were most frequently endorsed (75%). Three factor labels were found to carry a mild threat (i.e., Difficult, Depressing and Exhausting) while two were considered to carry a substantial threat (i.e., Lack of confidence and Overwhelming).

To the extent that the medium and high procrastinators were using reasons to explain their behaviour that would keep their self-esteem intact, this may suggest that they were likely using fraudulent excuses to justify their dilatory behaviour. Two studies conducted by Ferrari et al. (1998a, 1998b) examined the extent to which

procrastinators and non-procrastinators at either a selective or non-selective college (i.e., a university with low admission standards vs. a university with high admission standards) used legitimate or fraudulent excuses in explaining their academic tardiness. It was found that procrastinators compared to non-procrastinators reported greater usage of legitimate and fraudulent excuses in their current semester.

Furthermore, students reported that phoney excuses were often “just made up” by themselves with the goal “to gain more time.” Although the purpose of the present study was not to examine “excuses,” but to look at the meaningful labels that procrastinators apply to their tasks, these studies may serve as a caveat that there is a proclivity among procrastinators not to be accurate with regards to justifying their dilatory behaviour.

Other research by Nisbett and Wilson (1977) relevant to these arguments is that procrastinators may not be purposely withholding the truth about their behaviour, but rather that people as a whole have no direct access to higher order mental processes such as those involved in the evaluation, judgement, problem solving and the initiation of behaviour. This argument is supported by numerous studies reviewed in their 1977 article in which people were unable to accurately report what influenced their behaviour or judgements although they were completely cognizant of the existence of both stimulus and response (Nisbett & Wilson, 1977). The results of these studies led Nisbett and Wilson to argue that “...people in their daily lives do not even attempt to interrogate their memories about their cognitive processes when they may resort in the first instance to a pool of culturally supplied explanations for behaviour of the sort in question, or failing in that, begin a search through a network of connotative relations until they find an explanation that may be adduced as

psychologically implying the behaviour (p. 15).”

Given this perspective, an individual may procrastinate because of low self-esteem resulting from autocratic parents. Yet, when asked why she procrastinates on her academic tasks (as in the present study), she may be more likely to endorse cognitive reasons which she deems suitable in terms of explaining her behaviour (e.g., “I find it boring,”) as oppose to analysing her thoughts through introspection and correctly identifying her domineering parents as the cause of her procrastination. Overall, this may suggest that procrastinators may not be able to provide the true motives behind their dilatory behaviour, not because they do not want to, but rather because they simply do not accurately know what they are.

Although the criticisms levied above may have an effect on research, the data collection for the present study was premised on Kelly’s credulous approach, and the results themselves indicate that a credulous approach provides us with information about procrastinators’ insight into their behaviour. What is most interesting is that the constructs that differentiate the low from the medium and high procrastinators’ groups came from the low procrastinating group who may not need to protect their self-esteem. So, to some extent, the data collected may have been influenced by biased reporting by the medium and high procrastinators, however the contrast with the low procrastination group still provided an interesting perspective on students’ construal of their academic procrastination.

Conclusions and Suggestions for Future Research

After examining the personal constructs of high, medium, and low procrastinators, it was found that although the three groups of participants described their academic tasks similarly, low procrastinators used unique constructs which were

conducive to academic success and distinguished them for the medium and high group. For example, while themes such as “Organized” and “Getting started early” emerged as bi-polar constructs for the term “Procrastination” across all three groups of participants, a unique theme of “Determination” was found for low procrastinators. Next, factor analysis of the association grids of all participants revealed that unique thematic labels such as “Challenging” and “Positive outlook” emerged for the low group of procrastinators. These thematic labels seem to be geared more towards academic success than the unique factor labels which emerged from the medium and high procrastinators such as “Unimportant” and “Routine,” or “Task delay” and “Pressure,” respectively. Even at the superordinate construct level, themes such as the “Importance of university” and the “Benefits of university in the long run” emerged for the low group, and because superordinate constructs are the higher order thought processes of these individuals, this suggests that the notion of the importance and benefits of school are a constituent part of their motivational system.

The implications of these results suggest that taking a credulous approach in examining academic procrastination is an important way of better understanding this phenomenon. High and medium procrastinators differed from low procrastinators in that they do not construe their academic tasks in terms of the long-term benefits of university, and they did not view their academic tasks as stimulating in any way. The findings of this study suggest that having long-term goals within the academic domain may be an important factor in avoiding academic task delay. Therefore, counsellors treating for academic procrastination may wish to assist students to develop long-term goal plans as these long-term goals may maintain the students’ short term task focus by maintaining the supervisory control system (Kuhl, 1994).

In addition, this research may have also helped to identify marker variables which may be hallmark constructs of either high, medium or low procrastinators. Counsellors who treat for academic procrastination may choose to use the Rep Grid as a means of determining whether their treatment was successful or not. If factor labels and superordinate constructs congruent with the low procrastinators emerge from their clients association grid and laddering procedure, this could be indicative of a reconstrual of the academic domain and progress in treatment. However, if constructs emerge which are similar to that of the high or medium procrastinators in the present study, this may suggest that further treatment needs to be conducted and that their clients have not changed their construal of their academic tasks that would facilitate in academic punctuality.

Future research might also wish to explore the constructs of the different types of high procrastinators as defined by Ferrari (e.g., self-handicapping procrastinator, arousal procrastinator and decisional procrastinator) in order to better understand the superordinate constructs of this group. In the present study, there were no themes or consistency within the superordinate constructs of the high procrastinators which may have been a result of having a combination of all three types of high procrastinators in the sample. Future studies may wish to administer scales that could classify people as a specific type of procrastinator (e.g., The Decisional Procrastination Scale) in order to obtain homogeneity among the various subgroups. This may provide similar superordinate constructs, that would further our understanding of the higher order thought processes influencing academic procrastination. When research is able to identify the main superordinate constructs involved in academic procrastination, this would be valuable information in the treatment of academic procrastination, because

counselling programs could be geared towards implementing programs that could alter these thinking patterns.

One such program is Kelly's Fixed Role Therapy which has been effective in helping individuals reconstrue the way they view the world. In Fixed Role therapy, procrastinators would provide a self-portrait by writing about themselves from the third person viewpoint (e.g., "John Brown is...."). This self-portrait would be examined and then a fixed role sketch would be developed for the procrastinator to follow. The fixed role sketch is something that would involve the procrastinator in new, but not over-demanding ventures. The procrastinator would then be asked to take on the characteristic and qualities of this fixed role individual for about three weeks. During this period, the procrastinator would mirror this hypothesized person's behaviours and at the end of the fixed role enactment, the goal is that the procrastinator would have experienced behaviours that are not likely to have been elicited by their usual self (e.g., start an assignment two weeks before it is due) which would help her to realise that she is "not necessarily trapped forever inside [her] own autobiography and [her] own customary thought behaviour." (Bannister & Fransella, 1971).

In conclusion, this study has provided unique insight into the thoughts and feelings of students who varied in their tendency to procrastinate. Overall, the results have shown that students are not all that different and that they all tend to think of academic tasks as difficult, boring, tedious, and put on them by others. However, those who do not procrastinate construe their projects in two very importantly different ways: 1) they are connected to long terms goals and 2) they see their academic work as challenging, not threatening. Whereas most research in the area of

procrastination has been strictly correlational and has not allowed procrastinators to provide their own reasons of why they delay on their academic work, this study took a credulous approach in understanding academic procrastination by allowing the participants to reveal what they thought of their academic tasks and how it related to their tendency to procrastinate. It is important that subsequent research in the area of procrastination try to focus on the superordinate constructs of the different types of high procrastinators, because understanding their higher order thinking processes will further our understanding and enhance the treatment of academic procrastination.

Endnotes

¹For the sake of brevity of expression, the three groups of participants will be referred to as high, medium and low procrastinators. However, the low group should not be referred to as procrastinators per se, because their scores on the API were very low, but it is a way of identifying their relative scores on the procrastination scales. In essence, this means that the high procrastinators refers to those students who scored within the top 10 percentile and in no way should this be understood to mean that there is a classification of types of individuals, but rather a matter of expression to keep the writing clear.

²Gender differences in the personal constructs of academic tasks were not examined in this study as this research was primarily interested in the constructs of students as a composite group. In addition, the sample size would have prevented this analysis of gender from being conducted properly. Although gender differences have been found in previous studies using the personal construct theory (e.g., Duck, 1975), and could serve as a consideration for future studies examining procrastination using the Rep grid, understanding how low, medium and high procrastinators differentiated in their construal of academic tasks, irrespective of gender, was the larger question addressed in this study.

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Appendix A

Appendix A

Aitken's (1982) Procrastination Inventory

For each of the following items, on the blank space, please indicate the extent to which the statement is more or less False (1) or True (5) of you. Read each statement carefully; remember, there are no right or wrong answers.

1 = False

2 = Mostly False

3 = Sometimes True / Sometimes False

4 = Mostly True

5 = True

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

- ___ 13. When I have a test scheduled soon, often I find myself working on other jobs when a deadline is near .
- ___ 14. I often finish my work before it is due.
- ___ 15. I get right to work at jobs that need to be done.
- ___ 16. If I have an important appointment, I make sure the clothes I want to wear are ready the day before.
- ___ 17. I arrive at college appointments with plenty of time to spare.
- ___ 18. I generally arrive on time to class.
- ___ 19. I overestimate the amount of work that I can do in a given time.
- ___ 20. My tendency to procrastinate is severely negatively affecting my school work.

Appendix B

Appendix C

The Personal Constructs Applied to Academic Tasks
Informed Consent Form

The purpose of an informed consent form is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you will have an opportunity to determine whether or not you wish to participate in the study.

The purpose of this study is to examine how students who are punctual or delay in the starting and completion of their academic work describe these same academic tasks. I am interested in the words you use in describing how you think and feel about your academic tasks.

You will be required to complete a chart. The chart requires you to supply words/short sentences to both academic tasks and everyday tasks. You will also complete an association chart in which you rate each word/short sentence on a seven-point scale against each of the tasks. You will then be required to answer "why" you used the words/short sentences to describe the tasks. This should take about 2 hours of your time to complete and all tasks will be completed in room A403 of the Loeb building.

There is potential for embarrassment in this study. As this experiment is about student's abilities to get things done on time and because some students always leave things to the last minute or fail to get things done, some people may be embarrassed or uncomfortable by some of the questions. You can choose not to answer any of the questions.

Your participation in this study is voluntary and you can withdraw at any time without academic penalty.

The data collected in this experiment will remain confidential. All data are coded such that your name is not associated with the data. The coded data are made available only to the researchers associated with this project.

The following people are involved in this research **The following people are involved in this research project** and may be contacted at any time: Jonathan Lee (Principal Investigator, 520-2600 ext. 1448), Dr. Tim Pychyl (Faculty Sponsor, 520-2600 ext. 1403). Should you have any ethical concerns about this study then please contact Dr. Mary Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664), or Dr. K. Matheson (Chair, Department of Psychology, 520-2600 ext. 2648).

You have the right to withdraw from this experiment at any time without academic penalty.

Signatures:

I have read the above description of this study and understand the conditions of my participation. My signature indicates that I agree to participate in the experiment.

Participant's Name: _____

Participant's Signature: _____

Researcher's Name: _____

Researchers Signature: _____

Date: _____

Letter of Debriefing (For High Procrastinators)

As part of the ethical conduct of research, we do our best to ensure that research participants are not harmed in any way. Apart from the actual design of the data collection, we address this issue of harm through discussion and with this written "debriefing". Please take time now to read the information on this page.

You were asked to participate in this study because you scored low on a measure which determines how prompt students are on completing tasks on time and getting school related activities done. Your score suggests that you tend to delay in starting an academic task. If you are troubled by this behaviour, please contact Carleton University Counselling Student Life Services at 520-6600.

The purpose of this study was to examine the differences in the words/phrases that were used to describe academic tasks by individuals who scored either high, medium or low on a measure of completing school related activities on time. The paper and pencil chart you completed is called a Rep Grid. This Rep Grid supplied you with a representative list of 8 academic tasks and asked you to supply 7 everyday tasks. You were then asked to explain how two of these tasks were similar in some way but yet different from the third task. By responding to this question for each triad of comparisons, you supplied us with your personal constructs for the different tasks. You were then asked to rate on a seven point scale how appropriately each personal construct applied to the different tasks. This allowed us to get a better understanding of the different terms that you would also use in describing each task. We are also interested in determining whether these terms differ from individuals who scored high and medium on the same measure of completing academic tasks on time. The purpose of the questions was to determine other important constructs which are related to the ones that you supplied to us in your Rep Grid. It is hoped that the results of this line of research will contribute to our overall understanding of task delay.

If you have any questions about this research, or if you are interested in the results of this study, please feel free to call us: Jonathan Lee (Principal Investigator) at 520-2600 ext 2705 or Professor Tim Pynchl (Supervisor of this research) at 520-2600 ext 1403. Results of the data analysis should be available in June.

Any ethical concerns may be directed to Dr. Mary Gick (Chair, Ethics Committee) at 520-2600 ext. 2664 or Dr. Kim Matheson (Chair , Department of Psychology) at 520-2600 ext. 2648.

In the event that your participation in this study causes any personal distress to you, please call the Carleton University Health Services at 520-6674

Thank You for Participating

Letter of Debriefing (For Low Procrastinators)

As part of the ethical conduct of research, we do our best to ensure that research participants are not harmed in any way. Apart from the actual design of the data collection, we address this issue of harm through discussion and with this written "debriefing". Please take time now to read the information on this page.

You were asked to participate in this study because you scored high on a measure which determines how prompt students are in completing tasks on time and getting school related activities done. Your score suggests that you tend to complete your academic tasks on time.

The purpose of this study was to examine the differences in the words/phrases that were used to describe academic tasks by individuals who scored either high or low on a measure of completing school related activities on time. The paper and pencil chart you completed is called a Rep Grid. This Rep Grid supplied you with a representative list of 8 academic tasks and asked you to supply 7 everyday tasks. You were then asked to explain how two of these tasks were similar in some way but yet different from the third task. By responding to this question for each triad of comparisons, you supplied us with your personal constructs for the different tasks. You were then asked to rate on a seven point scale how appropriately each personal construct applied to the different tasks. This allowed us to get a better understanding of the different terms that you would also use in describing each task. We are also interested in determining whether these terms differ from individuals who scored low and medium on the same measure of completing academic tasks on time. The purpose of the questions was to determine other important constructs which are related to the ones that you supplied to us in your Rep Grid. It is hoped that the results of this line of research will contribute to our overall understanding of task delay.

If you have any questions about this research, or if you are interested in the results of this study, please feel free to call us: Jonathan Lee (Principal Investigator) at 520-2600 ext 2705 or Professor Tim Pychyl (Supervisor of this research) at 520-2600 ext 1403. Results of the data analysis should be available in June.

Any ethical concerns may be directed to Dr. Mary Gick (Chair, Ethics Committee) at 520-2600 ext. 2664 or Dr. Kim Matheson (Chair , Department of Psychology) at 520-2600 ext. 2648.

In the event that your participation in this study causes any personal distress to you, please call the Carleton University Health Services at 520-6674

Thank You for Participating

Letter of Debriefing (For Medium Procrastinators)

As part of the ethical conduct of research, we do our best to ensure that research participants are not harmed in any way. Apart from the actual design of the data collection, we address this issue of harm through discussion and with this written "debriefing". Please take time now to read the information on this page.

You were asked to participate in this study because you scored within the mid range on a measure which determines how prompt students are in completing tasks on time and getting school related activities done. Your score suggests that you sometimes tend to complete your academic tasks on time. If you are troubled by this behaviour, please contact Carleton University Counselling Student Life Services at 520-6600.

The purpose of this study was to examine the differences in the words/phrases that were used to describe academic tasks by individuals who scored either high or low on a measure of completing school related activities on time. The paper and pencil chart you completed is called a Rep Grid. This Rep Grid supplied you with a representative list of 8 academic tasks and asked you to supply 7 everyday tasks. You were then asked to explain how two of these tasks were similar in some way but yet different from the third task. By responding to this question for each triad of comparisons, you supplied us with your personal constructs for the different tasks. You were then asked to rate on a seven point scale how appropriately each personal construct applied to the different tasks. This allowed us to get a better understanding of the different terms that you would also use in describing each task. We are also interested in determining whether these terms differ from individuals who scored high and low on the same measure of completing academic tasks on time. The purpose of the questions was to determine other important constructs which are related to the ones that you supplied to us in your Rep Grid. It is hoped that the results of this line of research will contribute to our overall understanding of task delay.

If you have any questions about this research, or if you are interested in the results of this study, please feel free to call us: Jonathan Lee (Principal Investigator) at 520-2600 ext 2705 or Professor Tim Pynchyl (Supervisor of this research) at 520-2600 ext 1403. Results of the data analysis should be available in June.

Any ethical concerns may be directed to Dr. Mary Gick (Chair, Ethics Committee) at 520-2600 ext. 2664 or Dr. Kim Matheson (Chair , Department of Psychology) at 520-2600 ext. 2648.

In the event that your participation in this study causes any personal distress to you, please call the Carleton University Health Services at 520-6674

Thank You for Participating

Appendix D

Low Group of Procrastinators

<u>Interesting task</u>	<u>Consistently perform well</u>	<u>Don't care about outcome</u>	<u>Pleasant or enjoyable</u>	<u>Personally meaningful</u>	<u>Totally in control</u>	<u>Perform properly</u>
Painting	Listening	Housework	Walking	Exercise	Job	Cooking
Learning a new game/sport	Balancing books at work	Housework	Running errands	Helping family friend	Cooking	Organizing events
Doing research work	Creative writing	Reading a novel	Group presentations	Designing something new	Writing	Cooking
Working on the computer	Getting daughter ready for school	Cleaning room	Crossword	Cleaning house	Completing schoolwork	Organizing my life
Work	Getting things done	My appearance	Working out	Taking care of my dog	My life	Cleaning
Playing golf	Writing tests or exams	Marks in elective courses	Playing games	Going to church	Planning activities	Driving by road rules
Reading classical literature	Working with children	Running errands	Painting	Writing letters	Housework	Arrive on time
Dancing	Teaching others	Filling out a survey	Shopping	Talking to friends/others	Driving	Cleaning
Learning in class	Helping others	Passing a class	Dancing	Praying	Organizing my life	Being myself
Travelling to new places	Organizing displays at work	Watching T. V.	Doing research on the internet	Spending time with family and friends	Driving my car	Housework
Getting groceries stuff	Doing laundry	Using the computer	Babysitting	Having a shower	Cleaning the house	Organizing
Personal reading	Drawing	Watching T. V.	Surfing the net	Volunteering for psychology professor	Decorating house	Cooking
Reading for pleasure	Cleaning	Laundry	Dog walking	Visiting family and friends	Going out with	Driving
Climbing	Organizing time well	Drawing	Karate class	Writing exams well	Work	Finishing 1 st
year						
Watching history channel	Driving ability	Being nice on the bus	Soccer	Time with family	Sex	Work

Medium Group of Procrastinators

<u>Interesting task</u>	<u>Consistently perform well</u>	<u>Don't care about outcome</u>	<u>Pleasant or enjoyable</u>	<u>Personally meaningful</u>	<u>Totally in control</u>	<u>Perform properly</u>
Fencing practice Jogging	Creative writing Exam writing	Biking Cleaning house	Painting Reading for leisure	Drawing Volunteering	Sculpting Doing job at work	Art drills Taking care of family
Doing research	Preparing presentation	Mowing lawn	Reading book for English class Participation in favourite sport	Exercise Time set aside to read and think	Cleaning room Being alert in class	Preparing for something Handing in assignments on time
Exercise	Job	Daily routine				
Socializing with floormates Learning about stockmarket Watch a movie Reading additional material	Cleaning my room Cleaning house Playing a computer game Taking notes	Going swimming Assignments worth 0% Playing sports Watching kids complete their activities Washing my clothes Canvassing for politician	Watching T.V./movies Playing golf Going out with friends Preparing food Being with friends Babysitting	Writing to my friends Teaching skiing and see them enjoy it Dating Participating in process learning Writing in my diary Sending out birthday wishes Drawing	Playing piano/guitar Hiking in woods Recreational reading Delivering children to activities My sports Organizing with friends Working out	Listen to problems. A job I enjoy doing Cooking Listening well Playing tennis Filling car with gas Doing my banking Taking a shower
Teaching skiing Cleaning room	Working with other people Replying to e-mail	Eating	Reading for pleasure			
Running	Taking care of my dog	Playing soccer	Travelling to a new place	Cleaning my house	Reading a book	
Cooking	Dancing	Playing cards Riding a bike	Biking Working with youth	Writing letters Crafts	House cleaning Driving	Showering Spelling/grammar Cleaning house
Volunteering Recreational sport Reading a book	Job My employment Writing multiple choice exam	Cooking dinner	Writing poetry	Reading poetry	Writing computer program	

High Group of Procrastinators

<u>Interesting task</u>	<u>Consistently perform well</u>	<u>Don't care about outcome</u>	<u>Pleasant or enjoyable</u>	<u>Personally meaningful</u>	<u>Totally in control</u>	<u>Perform properly</u>
Camping	Eating	Housework	Listening to music	Going to church	Reading	Swimming
Drawing a picture	Organizing life events	Reading a personality chosen book	Designing new things	Setting of goals	Graduating successfully from university	Setting a daily schedule
Going to Ottawa for school	Talking on the phone	Finding a job	Going out with friends	Having dinner with my girlfriend	Talking and relaxing when I go out	Helping friends in need
Volunteering at "The Door"	Cleaning my house	Paying rent to roommate	Training rat	Reading books	Copying class notes	Change rat cages
Practising the piano	Being punctual	Finishing readings	Reading novels	Writing long essays professors	Short assignments	Listening
Watching the learning channel	Babysitting my cousin	Talking on the phone	Volunteering	Spending time with parents	Going out with friends	Cleaning
Playing the guitar and listening to music	Job/placement	Summer term classes	Watching sports	Being a friend	My home environment	Cleaning
Working out	Remembering information	Being on time	Reading	Coaching	Cooking	Solving problems
Group discussion	My job	Academics in general	Athletics	Teaching swimming my boss	Playing waterpolo	Dealing with Hockey
Teaching Learning in general	Assignments at work	Baseball Sports	Reading	Guitar	Painting	Walking my dog
Learning about new technology	Schoolwork	Cleaning house	Reading	Working with people	Driving	Typing
Working on vehicles	Marital arts	Playing sports with friends	Drawing	Volunteering	Writing courses	Cooking
Reading for leisure	Self-learning/physical tasks	Cleaning dishes	Flight simulators	Meditation	Listening to problems	Checking e-mail
	Cooking	Going out with friends	Meticulous physical objects	Fixing broken objects	Physical training	Cutting hedges
			Going to see films	Visiting my father	Driving a motor vehicle	Going out on the bus