The Effects of an Academic Procrastination Treatment on Student Procrastination and Subjective Well-Being

Kelly Binder

A thesis submitted to

the Faculty of Graduate Studies and Research

in partial fulfillment of

the requirements for the degree of

Master of Arts

Carleton University

Ottawa, Ontario

September 1, 2000

Abstract

The purpose of this research was to determine the effectiveness of a six-week campus-based treatment program designed to help students overcome their academic procrastination. Measures of procrastination and subjective well-being (SWB) were used to determine treatment efficacy. Fifty Carleton University students participated in this research that compared a self-selected treatment group (n=15) to a comparison group receiving Personal Projects Analysis (PPA) but no treatment (n=17) and a comparison group receiving neither PPA nor treatment (n=18). The results from the Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum, 1984) and Academic Procrastination State Inventory (APSI; Schouwenburg; 1994) found that, at the end of treatment, procrastination decreased significantly for the treatment group relative to the comparison groups. Similarly, within-subjects analysis revealed that appraisals for the project dimension *procrastination* were significantly lower for the treatment group, only. Separate analysis of the PPA project factors (Little, 1983) found no significant differences between groups. However, within-subjects analysis found that appraisals of project structure (i.e., project dimension *control* and *time adequacy*), project community (i.e., project dimension *other's view*) and project efficacy (i.e., project dimension *outcome*) increased significantly, at the end of treatment, for the treatment group only. Contrary to what was expected, there was no significant change in scores for the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) and both positive and negative affect scales (Diener & Emmons, 1984) for any of the three groups. The implications of these results are discussed along with future directions for research in the area of academic procrastination treatment.

Acknowledgements

Finally, my thesis on procrastination! I know I am not unique when I say that I had to overcome many obstacles to get to this point. Doing the necessary work needed to successfully complete a thesis inevitably involves personal struggle and perseverance for any graduate student. However, doing this monumental task while pregnant posed a whole new set of challenges! Thankfully, I survived but were it not for the support of many individuals, I do not think I would have made it to this point.

First and foremost, I wish to thank my advisor, Dr. Tim Pychyl, for his guidance, support and insight. I still recall your comments when I first came to see you regarding my research ideas. You told me you needed another student like you needed a hole in the head. However, you did agree to accept me as a member of the Procrastination Research Group and I am truly grateful for that. Well, after three long years, I just hope you did not regret your decision! Although, I am sure you are breathing a sigh of relief now that I am finally finished. Thank you, Tim, for allowing me to pursue research of a clinical nature despite all its added complexities.

I would like to thank all my friends for their continuous support; particularly, Sheri and Kathy for our 3-way daily emails – they helped to keep me sane! Thank God there was someone else out there who knew what I was going through and allowed me to vent about it! Also, thank you to my "across-the-miles" friends: Arsalan, Kylie and Dil. I appreciated your frequent check-ins and our lengthy supportive chats.

I also want to thank my family for all their love and support but especially to my partner, Roger, who has stuck with me through it all. Thank you for your understanding,

encouragement, patience, humour and love. Words cannot express how much you mean to me.

Finally, to my unborn child, please forgive me for all the stress I put both of us under. It brought me great comfort knowing that you were always there with me during these past eight months. I can hardly wait to hold you in my arms!

Table of Contents

Table of Contents (continued)

Table of Contents (continued)

Page

List of Tables

The Effects of an Academic Procrastination Treatment on Student Procrastination and Subjective Well-Being

Procrastination may be defined as the postponement of task completion usually resulting in a state of unhappiness (Ferrari, Johnson, & McCown, 1995; Milgram, 1991) or subjective discomfort (Burka & Yuen, 1983). Specifically, academic procrastination is a pervasive and potentially maladaptive behavior for many university and college students often resulting in feelings of psychological distress (Solomon & Rothblum, 1984). Schouwenburg (cited in Ferrari et al., 1995) described student procrastination as a result of three behavioral manifestations: 1) lack of promptness, either in intention or in behavior; 2) intention-behavior discrepancy; and 3) preference for competing activities (p.72).

As many as 90% of students procrastinate and about 25% of this population report their procrastination to be chronic (Knaus, 1998). Furthermore, the tendency to needlessly delay tasks is a self-perceived behavioral problem (Solomon & Rothblum, 1984). This self-awareness has been demonstrated by McCown and Roberts (1994) who found that a significant number of students believed their procrastination interfered with their academic performance and increased their feelings of stress. It is, therefore, understandable that students may seek clinical treatment for their procrastination.

As of yet, no systematic characterization of treatment for procrastination has been found in the literature. Perhaps even more surprisingly, there is a paucity of outcome research studying the effectiveness of procrastination intervention (Ferrari et al., 1995). Thus, the purpose of this research was to examine the effects of treatment on academic

procrastination. Moreover, the psychological well-being of students was examined over the course of procrastination treatment.

The thesis begins with a discussion of the definition of procrastination. This is followed by the specific definition of academic procrastination and the many consequences related to it. The remaining sections explore procrastination treatment approaches, outcome research, treatment-related research issues, and a general overview of subjective well-being (SWB) in relation to task avoidance. This literature review concludes with an overview of the guiding hypotheses for the research.

Definition of Procrastination

Despite the lack of a universally accepted definition of procrastination, the construct does appear to be multi-dimensional in nature in that it includes behavioral, affective and cognitive components (Ferrari et al., 1995; Solomon & Rothblum, 1984). Both behavioral and affective components are reflected in Milgram's (1991) definition of procrastination: "1) a behavior sequence of postponement; 2) resulting in a substandard behavioral product; 3) involving a task that is perceived by the procrastinator as being important to perform; and 4) resulting in a state of emotional upset" (as cited in Ferrari et al., 1995, p. 11). However, as Ferrari and his colleagues point out, procrastination does not always result in substandard behaviors or poor results. Many individuals, in fact, perform efficiently under time constraints. With respect to behavior, other researchers have defined procrastination in terms of the degree of frequency or severity. In other words, an individual may be considered a procrastinator if he or she has the chronic tendency to habitually postpone the initiation or completion of a task (Burka & Yuen,

1982; Ferrari, 1993; Lay 1986; Rothblum, Solomon, & Murakami, 1986). For example, Rothblum, Solomon and Murakami (1986) have written that "self-reported procrastination constitutes more than a reasonable length of time to complete a task, but must include both frequent delay and considerable anxiety" (p. 387). This definition also includes an affective component which will be discussed further in the section regarding the consequences of academic procrastination.

The cognitive component of procrastination involves the discrepancy between intentions and actual behavior (e.g., Blunt & Pychyl, 2000; Ferrari, 1994; Lay, 1986). However, should the student who delays working on a particular assignment be considered procrastinating if he or she is waiting for further input from the professor, for example? In this case, Ferrari's distinction between *dysfunctional* versus *functional* procrastination may be relevant (Ferrari et al., 1995). Dysfunctional procrastination is defined as "the time past the optimal beginning point for completion of an important task that has a high probability of needing completion and that does not have unreasonable demands of personal costs associated with attempted completion" (Ferrari et al., 1995, p. 12). In contrast, functional procrastination is defined as "...similar behavior evoked for actions that have a low probability of needing completion or have excessively high costs associated with personal completion at their optimal time" (Ferrari et al., 1995, p. 12). Thus, using the above example, the student who delays completing his or her assignment may be exhibiting a form of functional procrastination, in that, if he or she were to go ahead and complete the assignment it may result in high personal cost to the student if the professor were to modify some aspect of the assignment *after* he or she completed it. In

other words, sometimes procrastinating may prove to be beneficial in particular situations (Birner, 1993).

In sum, there does appear to be some consensus with respect to the theoretical definition of the construct of procrastination in that it contains some degree of behavioral, cognitive, and affective components. However, controversy over a comprehensive definition still exists. For instance, Silver (1974) argues that it is difficult to define procrastination because what one individual may consider delaying a task may be what another individual considers punctual. Furthermore, some theorists believe that a person is not considered to be a procrastinator if he or she is not "consciously aware" that he or she is engaging in task delay behavior (Ferrari, 1991a; Ferrari, 1992; Senécal, Koestner, & Vallerand, 1995; Senécal, Koestner, & Vallerand, 1997; Silver & Sabini, 1981; Silver & Sabini, 1982).

In addition to the various ways in which procrastination may be defined, the literature also makes note of the various kinds of procrastination. These range from situational to dispositional procrastination (e.g., Ferrari & Pychyl, 2000). The focus of the present research examined academic procrastination exclusively, therefore, only this type of procrastination is discussed in the following section.

Academic Procrastination

Definition. Academic procrastination is considered to be a form of situational procrastination, which has been described as behavior that is linked to a specific task (Harris & Sutton, 1983). Burka and Yuen (1983) have said that it is common for college students to delay academic tasks to the point of experiencing considerable anxiety.

Rothblum, Solomon and Murakami (1986) provide support for this statement in their research by defining academic procrastination as "a) to nearly always or always put off academic tasks, and b) to nearly always or always experience problematic levels of anxiety associated with this procrastination" (p. 387). In their reference to academic procrastination, Lay, Knish and Zanatta (1992) expand upon this definition to include specific behaviors that contribute to student procrastination. The authors state that academic procrastination stems from, "a lack of practice or preparation, reduced effort, and perhaps...unfavorable *performance* settings, but at least the selection of unfavorable *preparation* settings. For example, students may choose to study in places that will promote distraction and delay" (p. 243-244). This last statement is a reflection of self-sabotage or self-handicapping (e.g. Ferrari, 1991b). In either case, it may be considered self-defeating behavior (Boice, 1996; Ellis & Knaus, 1977).

For the purpose of this research, academic procrastination may be defined as any academic task that is delayed or avoided as a result of the discrepancy between intention and actual behavior to the extent that it produces negative affect in the procrastinator.

Consequences. From the literature, several consequences of academic procrastination have been noted. The first of these include objective outcomes such as, lower grades (Burka & Yuen, 1983; Ferrari et al. 1995; Knaus, 1998; Tice & Baumeister, 1997), higher course withdrawals (Semb, Glick & Spencer, 1979; Rothblum, Solomon & Murakami, 1986), poorer classroom attendance and student dropouts (Knaus, 1998). However, it is important to point out that academic procrastination does not always result in these consequences. For instance, Pychyl, Morin and Salmon (2000), found no significant difference in GPA between procrastinators and non-procrastinators.

Tice and Baumeister (1997) found poorer health to be another negative consequence of academic procrastination. In their research, stress levels, number of health care visits and physical symptoms in college students were gathered over the course of the semester. Procrastinators reported lower stress and less illness compared to non-procrastinators at the beginning of the semester, but they reported higher stress and more illness by the end of the semester. Overall, procrastinators were ill more often and received lower grades on their assignments. The authors concluded that procrastination appears to be a self-defeating behavior pattern marked by short-term benefits and long-term costs (Tice & Baumeister, 1997).

Secondly, the affective component of procrastination illustrates that there are emotional consequences of task delay. When individuals are aware that they are procrastinating, they may experience a number of internal feelings including inadequacy, self-deprecation, embarrassment, guilt, sense of fraudulence, tension, panic, and overall anxiety (Burka & Yuen, 1983). In fact, according to Knaus (1998), "self-efficacy, personal confidence and productivity are tightly linked" such that "a combination of low self-efficacy and anxiety can jointly contribute to expectations of failure, which results in a downward spiral of paralyzing procrastination" (p. 43).

Furthermore, Knaus believes that much of the emotional consequences of task delay stem from a large cognitive component referred to as "self-downing" or a "pattern of doubting one's abilities [that] can lead to second-guessing, hesitations, self-doubt...a sense of worthlessness, procrastination, and more self-doubts" (p. 43). In turn, this may lead to feelings, such as, helplessness, depression, worry, hostility, frustration, and irritation. In the case of students, low frustration tolerance is often the result of failing to

manage oneself in terms of academics especially when, "new responsibilities can also evoke resistance in those used to a less responsible lifestyle" (Knaus, 1998, p. 13). This lack of self-regulation may be considered an *indirect* consequence of task avoidance when the mediating variable of stress is taken into account. That is to say, the stress resulting from task avoidance may simply be a catalyst in the breakdown of self-control.

Evidence to support the role of stress in the breakdown of self-control may be found in the research of Muraven, Baumeister and Tice (1999) who state that self-regulation "involves altering one's own responses (e.g., cognitive processes, feelings, and behaviors)" (p. 446). The authors compare self-regulation to that of a muscle which when strengthened through exercise increases its power and stamina. This analogy between self-regulation and physical strength is relevant in terms of procrastination if one considers that failure to self-regulate "occurred because people have limited resources for self-regulation and these become depleted in a manner akin to a muscle's becoming fatigued" (Muraven, Baumeister, & Tice, 1999, p. 447). Further, Muraven & Baumeister (in press) have found a pattern of fatigue and depletion in terms of self-regulation that revealed: "a) coping with stress has after-effects that encompass a variety of self-regulatory breakdowns...[and] b) coping with emotional distress shows similar patterns" (cited in Muraven et al., 1999, p. 447). Thus, in terms of procrastination, the consequence of stress or emotional distress is an important one relative to self-regulation. Given that stress and emotional distress have a significant negative impact upon self-regulation, there is potential for this relationship to interfere with an individual's ability to overcome her or his procrastination. When the associations between these relationships are considered in reverse, it becomes plausible to assume that helping individuals

overcome their procrastination may positively impact upon their well-being. Therefore, a crucial component of procrastination treatment would be to help procrastinators become better self-regulators. This may be accomplished through various therapeutic approaches that are discussed in the following section.

Treatment for Procrastination

This section has been divided into three main parts. The first of these describes several treatment approaches for procrastination. This is followed by the results of several outcome research studies. Finally, various treatment research issues are explored.

Treatment approaches. As academic procrastination is not merely a time management issue (Ferrari et al., 1995), clinical interventions have been designed and implemented based largely on cognitive-behavioral therapy (Boice, 1996; Burka & Yuen, 1983; Ellis & Knaus, 1977; Knaus, 1998). This therapy originated as a derivative of the ABC model of emotional distress (see Kuelwein & Rosen, 1993) which states:

> ...we experience an activating event (A) in a particular way because of our beliefs (B) about this event, which cause us to react behaviorally and emotionally with certain consequences (C). Therefore, it is largely our *beliefs* (B) about events, rather than the events themselves, that determine our emotions and behaviors. (p. 2)

Due to the fact that one is often unaware of one's own core beliefs, it is typically the event itself that is often blamed for one's emotional distress instead. Therefore, the main goal of cognitive-behavioral therapy is to increase the awareness of irrational beliefs so that they may be challenged and modified to reflect more accurate, adaptive, and reality-

based thinking (e.g., Beck, 1976; Ellis, 1991). As a result, making overgeneralizations and demands, catastrophizing or minimizing events, and having unrealistic expectations and low frustration tolerance may be addressed and improved upon.

Early on, Ellis (1962) noted the effectiveness of using a cognitive-behavioral approach with clients in his own clinical practice. He observed that clients' progress occurred when cognitive changes were made and then developed his own technique called rational-emotive therapy (RET) (see Ellis, 1980, 1985, 1991). According to Kuelwein & Rosen (1993), cognitive therapy is collaborative and empirically focused because it allows for: 1) an agenda to be set between client and therapist each session, 2) feedback to be given on behalf of the client to the therapist, 3) therapist and client to act as a team to investigate the client's cognitions and test their accuracy and adaptiveness, and 4) empirical evidence to be gathered by the client from outside of the sessions. The psychological theory underlying the effectiveness of cognitive therapy in terms of the third and fourth tenet, namely, testing one's beliefs, may be explained as follows:

> Because the results are often at odds with those the client expected, a discrepancy is produced within the client's own mind, thus driving home both the inaccuracy and inadequacy of the client's theory. This result produces an uncomfortable disequilibrium and a rise of affect. The client is not only primed by discomfort or curiosity for cognitive change but the increased affect also often serves to punctuate and intensify the new learning. (Kuelwein & Rosen, 1993, p. 10)

These four tenets have been incorporated into some of the programs designed to treat procrastination. One example is the cognitive-behavioral treatment approach offered by Johnson and McCown (see Ferrari et al., 1995, chap. 9) referred to as the "Doing It

Now" (DIN) program. This therapeutic intervention involves 10 structured sessions applying techniques such as self-monitoring and relaxation to overcome dysfunctional cognitions and anxiety. According to these authors, there are two main characteristics of procrastinators: 1) *neurotic avoidance* which is associated with overarousal, resulting in anxiety; and 2) *lack of conscientiousness* which is associated with underarousal, resulting in impulsivity.

In their DIN program, Johnson and McCown include strategies to help both types of procrastinators. For instance, anxiety-reducing techniques such as relaxation exercises are implemented to help those students suffering with overarousal. For the low-conscientious procrastinator, the authors recommend obtaining verbal commitments from clients with respect to estimated time of task completion. However, the main strategy of treatment for both cases is in using cognitive-behavioral therapy to challenge and restructure cognitive distortions. According to Ferrari et al. (1995) "cognitive challenges or irrational fears are perhaps the most important aspect of treatment for the typically anxious procrastinator" (p. 201). During specific sessions of the DIN, attempts to modify existing dysfunctional beliefs of participants involved presenting them with various vignettes depicting people who do not complete tasks in an efficacious manner. Participants were divided into groups and asked to identify potential cognitions that the subjects of these vignettes may hold, and then speculate as to how these cognitions may interfere with completing the tasks. Although not explicitly stated, it is assumed that this process allowed participants to recognize the disadvantage of such irrational thinking which, in turn, would initiate change in their own dysfunctional cognitions.

Evidence of the effectiveness of cognitive restructuring has been found in other types of interventions as well. For example, Jason and Burrows (1983) implemented a 6-week program designed to help high school students cope with the developmental transitions often experienced after graduation. These milestones included such events as entering college, university or the workforce, engagement or break-up of a relationship, or moving away from home. Similar to the DIN, this program incorporated anxiety-reducing strategies along with cognitive restructuring techniques. After participating in the program, students were found to have better scores on measures of self-efficacy and rational beliefs, compared to controls. When instructed to role-play while presented with scenes depicting potentially traumatic transition events, program participants used significantly more cognitive restructuring strategies than the control group.

Other sources of treatment for procrastination have been found in the self-help literature. For example, Knaus (1998) has written books on the subject of procrastination and suggests various cognitive-behavioral techniques to help his readers become more productive and goal-oriented. The mantra of his Do It Now! method is "*...doing reasonable things, in a reasonable way, within a reasonable time*" (p. 14). What Knaus considers "reasonable" is defined by common sense such that one's actions remain rational and non-extreme, hence, providing one with a sense of balance and control over one's life.

Based upon the ABC method of Ellis (1985, 1991), Knaus recommends to his readers and clients that they identify their own false beliefs that lead to self-defeating feelings, then dispute these irrational ideas. To help, Knaus suggests to his readers to ask themselves the following questions: How can I be absolutely sure I will fail at task A? If

I do not make an effort to attempt to do task A, what will the consequences be? How will I feel about it? Knaus notes that another way to challenge one's irrational thoughts may be to think of what one would tell one's friend if he or she was in a similar situation. In short, making conscious effort to be aware and then correct self-defeating thoughts is a large component in overcoming procrastination. According to Knaus, this is particularly true for people who engage in catastrophic or black-or-white thinking, for example, "If I fail at task A, my life will be ruined." As Knaus explains further,

> Some of us fall into the extremist thinking trap when we exaggerate the consequences of situations and threaten ourselves by the images we create. To get beyond self-induced catastrophic threats, redefine the threat experience and make it manageable. For example, if you tell yourself, "I would be destroyed if I failed," what does *failure* mean? What does *destroy* mean? Who would destroy you? Would you make life miserable for yourself? How? For what purpose? What alternative views are reasonable? (p. 181)

Other treatment approaches for overcoming procrastination have included a time management component along with self-regulation and self-monitoring strategies. For example, Boice (1996) highlights ten fundamental principles of efficacy that have been developed and tested against matched controls to help writers who chronically procrastinate. They are as follows: 1) wait, be calm, and develop patience instead of rushing before writing; 2) begin before feeling ready instead of collecting, filing, rearranging, and outlining ideas; 3) work in brief, daily sessions; 4) stop and take breaks when needed; 5) balance preliminaries such as collecting, organizing, and outlining with actual writing; 6) habitually monitor for negative self-talk and practice redirecting self-

defeating thinking and habits; 7) manage emotions by working at a moderate pace such that writing is not rushed and superficial; 8) moderate attachments and reactions to writing by remaining less attached to work emotionally; 9) let others, even critics, do some of the work; and 10) limit wasted effort such as rushing work until fatigue sets in (impatience) and overreacting to an interruption or criticism (intolerance). In terms of Boice's research and treatment suggestions, it is important to note that much of academic procrastination involves writing tasks set in the academic environment, hence Boice's framework on "writing blocks" provide an effective aspect of treatment strategies for academic procrastination more generally.

In addition to their cognitive-behavioral treatment approach, Burka and Yuen (1983) have also enlisted several time management strategies for helping individuals overcome their procrastination. The authors refer to these strategies as behavioral goals that include: 1) making tasks that need to get done observable to others, and 2) making these actions specific, concrete, and broken down into small steps. The authors also suggest procrastinators select a particular goal over the course of two weeks and monitor when they make progress and when they procrastinate in addition to the thoughts and feelings they experience. They encourage visualizing progress, optimizing the chance of success, sticking to a time limit, starting before feeling in the mood to start, avoiding excuses, focusing on one step at a time, getting beyond the first obstacle, being flexible about altering the goal if necessary, eliminating the need for perfection, and rewarding progress made.

In sum, based upon past intervention approaches and techniques, it would seem as though treating procrastination using a cognitive-behavioral approach would require

increasing the awareness of client's thoughts, feelings and behavior, then asking clients to consistently challenge and dispute their own negative self-talk that has been derived from their irrational beliefs. Theoretically, the reshaping of these distorted cognitions serves to regulate the negative thoughts and emotions that sustain procrastination behavior.

Overall, the treatments techniques reviewed have their roots firmly planted in cognitive-behavioral theory. However, from a research standpoint, it remains largely unknown whether these approaches are indeed effective at improving self-regulation in procrastinators. Several outcome studies examining treatment efficacy are presented in the following section.

Outcome research. To date, there are only a handful of published studies on the effectiveness of treatment programs for academic procrastination. Furthermore, Ferrari et al. (1995) argue that barely meaningful clinical results (i.e., according to Jacobson and Truax (1991), less than .5 standard deviations) are yielded in much of the research that is available. For instance, Ferrari and his colleagues (cited in Ferrari et al., 1995) conducted their own meta-analysis which was based on a compilation of fifteen outcome studies involving 234 high-school and college students. The authors found the treatment effect for procrastination interventions of to be .47 standard deviations relative to a control group. By comparison, Johnson and McCown (cited in Ferrari et al., 1995) found an effect size of .70 over a no treatment condition in their study of 67 students who completed the "Do It Now" (DIN) structured program. Participants in the DIN program also fared better than individuals who received ten sessions of brief psychodynamic psychotherapy (N=15) yielding an effect size of .21 for the variable change in procrastination scores (Ferrari et al., 1995).

Research done by Schubert Walker (in press), examined the effectiveness of a six-week counselling program designed to help students overcome their procrastination. Comparisons were made between 12 students in a procrastination treatment group to 37 students in a study skills group and 19 students in a discussion group about the common transition issues of university students. The therapeutic model for the procrastination treatment group attempted to foster positive self-perceptions, eliminate negative affect, and change behaviors. The techniques employed in the treatment included: 1) helping each student identify her or his own pattern of procrastination and the fears associated with it and; 2) helping students acquire and practice various cognitive, behavioral, and motivational coping strategies that would enable them to develop a more constructive and productive pattern of managing their academic lives. The results indicated that the greatest decrease in procrastination, as measured by Lay's General Procrastination Scale (Lay, 1986), occurred in the procrastination treatment group relative to the two comparison groups. The success of this treatment may be explained through its objective; namely, by improving one's own sense of personal power, one's self-worth and self-control are improved thereby helping to regulate the cycle of avoidance.

In sum, the available outcome research suggests that several procrastination treatments have shown to be effective to some extent. However, there are a number of important issues that need to be considered further in the approach to treatment.

Treatment research issues. Despite the previously mentioned outcome studies, there remains a paucity of research studying the efficacy of existing treatments for procrastination (Boice, 1996; Ferrari et al., 1995). However, actual reports of effect sizes notwithstanding, the notion of whether a treatment is truly "meaningful" or "clinically

significant" becomes an even greater issue. On the one hand, it may be argued that, "when no convincing body of outcome data exists, psychotherapeutic interventions are appropriate if they are guided by reasonable psychological theory" (Ferrari et al., 1995, p. 188). On the other hand, this position may be viewed as being a superficial and inadequate explanation for such a complex issue. Given the lack of consensus regarding standardization amongst clinicians, researchers, and consumers (Jacobson & Truax, 1991), it is not surprising that this issue remains unresolved. Possible explanations for the lack of agreement on this issue may be due to the difficulty of finding a good theoretical fit among a diverse range of disorders "from marital problems, antisocial children, headaches, anxiety disorders, depressions, to chronic pain, and with therapies as diverse as cognitive behavioral and psychodynamic" and that certain "criterion may be considered too stringent by some (e.g., researchers who work with schizophrenic adults or autistic children)" (Jacobson & Revenstorf, 1988, p. 134).

Various suggestions of what defines a treatment to be clinically significant have been put forth. According the Jacobson and Truax (1991):

> Clinically significant change would be inferred in the event that a posttreatment score falls within (closer to the mean of) the functional population on the variable of interest. When the score satisfies this criterion, it is statistically more likely to be drawn from the functional than from the dysfunctional population. (p. 13)

Other standards of clinical significance include: a level of change that is recognizable among peers and significant others (Kazdin, 1977; Wolf, 1978 as cited in Jacobson & Truax, 1991; Kendall & Grove, 1988), an improvement by the end of therapy such that a "normative" level of functioning is observed (Kendall & Norton-Ford, 1982; Nietzel &

Trull, 1988), or "changes that significantly reduce one's risk for various health problems" (Jacobson & Truax, 1991, p. 12). According to past psychotherapeutic treatments of anxiety or depression, "meaningful improvement" was defined by an effect size of approximately .80 or greater (Smith, Glass, & Miller, 1980).

However, not all researchers have the opinion that conventional statistical analysis is appropriate for determining the efficacy of treatment (Barlow, 1981; Garfield, 1981; Jacobson, Follette, & Revenstorf, 1984; Smith, Glass, & Miller, 1980). For example, the use of the effect size statistic may not be the most appropriate indicator of meaningful change, as Jacobson and Revenstorf (1988) explain:

> ...the effect size statistic is a measure of the magnitude of the treatment effect, which could be very large although trivial from a clinician's standpoint. Since the magnitude of a treatment effect relative to a control group has nothing to do with how favorably a group compares after therapy to well functioning peers, effect size is unrelated to our concept of clinical significance. For example, if a treatment for obesity produces an average weight loss of eight pounds, whereas a no treatment control group averages no weight loss, assuming a normal, moderate amount of variability, the effect sizes will be huge but the clinical significance of the differences could be negligible (e.g., a group averaging 250 pounds at pretest and 242 pounds at posttest). Whatever benefits of meta-analysis using the effect size statistic, such analyses cannot be used to determine the efficacy of any type of psychotherapy, if efficacy is defined as the ability of clients to function normally (like their peers who do not seek therapy) when therapy is over. (p. 138)

In short, the issues mentioned above that pertain to the "clinical significance" of treatment effects still remains open to debate and are important to consider when examining outcome research, in general.

Another research issue, as it pertains to determining the effectiveness of treatment, involves the experimental design. In the case of field research or quasi-experiments (Campbell, 1957), various aspects of a typical research laboratory or "controlled setting" (Cook & Campbell, 1979) may not be present. For example, random assignment is not possible in most clinical studies, particularly academic counselling centers, because researchers work with existing samples in treatment. In this instance, control groups are characteristically referred to as "comparison" groups because they are not the typical controls of a pure experimental design (Cook & Campbell, 1979; Posavac & Carey, 1992).

However, even in the event that random assignment may occur, withholding treatment from a no-treatment group, "...may seem ethically questionable if potentially beneficial treatments are withheld from persons who might need or deserve them" (Cook & Campbell, 1979, p. 347). Although,

> The problem of withholding treatments is reduced, of course, when resources are scare and it is simply not possible to provide everyone with the treatment. In this case, the investigator knows that there will have to be no-treatment controls. But he or she has no guarantee that these controls will be equivalent to the treatment group, since in many settings there will be pressure to distribute the treatment to those who are thought to merit or need it most rather than to a randomly selected group. (p.349-350)

Another solution to address the ethical dilemma associated with withholding treatment may include offering controls treatment at a later date if it is indeed successful (Cook & Campbell, 1979).

Given that quasi-experimental designs are not without shortcomings, it is beneficial to incorporate other design elements to improve upon the validity and interpretability of the results in terms of treatment efficacy. One suggestion, according to Cook and Campbell (1979), is to include pre- versus post-testing as well as intermediary testing. Posavac and Carey (1992) agree with these recommendations and include other suggestions as mentioned in the following paragraph:

> The validity of outcome evaluations seeking to demonstrate causal relationships can be increased by: (1) observing the participants at additional times before and after the program; (2) observing additional people who have not received the program; and (3) using a variety of variables, some expected to be influenced by the program and others not expected to be affected. (p. 159)

To date, the existing outcome research related to procrastination treatment (e.g., Ferrari et al., 1995) has not addressed these issues. For example, many of the studies (e.g., Schubert Walker) used only pre- and post-measures, not additional intermediary testing. Similarly, the outcome variables in the studies were often limited to pre- and post-measures of procrastination, as opposed to including other related outcomes of procrastination such as measures of subjective well-being.

Subjective Well-Being

It may be recalled that negative affect is a consequence of academic procrastination (e.g., Burka & Yuen, 1983; Knaus, 1998). Therefore, in order to fully determine the effectiveness of procrastination treatment, it is important to examine not only the behavioral aspects of procrastination but changes in individual's subjective well-being (SWB).

It is not uncommon to hear humorous jokes and anecdotes about procrastination such that it is not regarded seriously enough to be considered problematic (Ferrari et al., 1995). However, the truth of the matter is that task avoidance may produce a state of emotional upset among many individuals (Milgram, 1991). The negative psychological states arising from procrastination can be examined most generally in the context of SWB.

Subjective well-being (SWB) is comprised of both cognitive and affective components. The cognitive aspect of SWB refers to one's perceived quality of life and may be measured by using a life satisfaction scale (see Diener, Emmons, Larsen & Griffin, 1985); while positive and negative affect scales have been used as outcome measures for the affective aspects of SWB (Pavot & Diener, 1993a, 1993b). In some cases, the affective component of SWB has been shown to be an important component in relation to procrastination. For example, research done by Pychyl, Lee, Thibodeau, and Blunt (2000) have found guilt (negative affect) and procrastination to be positively correlated. Similarly, Pychyl (1995) found that doctoral students' academic procrastination produced negative affect including guilt, anxiety, and stress. In another instance, Ferrari (1994) found that feelings of guilt were related to behavioral

procrastination. However, there is virtually no research measuring the level of SWB before and after procrastination treatment. Therefore, one goal of this research was to examine the impact academic procrastination treatment had upon the SWB of students in relation to their academic procrastination.

An alternative to measures of life satisfaction and affect as an assessment of SWB is personal project analysis (PPA) (Little, 1983, 1989). PPA has been defined, in part, as, "an integrated set of assessment components which allow the counsellor to study the content, structure, dynamics, and impact of the everyday pursuits and goals of their clients" (Little, 1986, p. 596). Little's PPA methodology provides a means of temporally tracking the daily projects (in this case, academic on-going activities) of respondents (procrastinators) and allows each project to be rated along a number of dimensions, some of which have been correlated with well-being. In other words, PPA provides knowledge of what a person is doing and *how they feel* about what they are doing (e.g. Little, 1983).

In general, individuals have reported higher levels of well-being when their personal projects were perceived as meaningful, structured, not overly stressful and supported by others (Little, 1989). Palys and Little (1983) found that projects deemed enjoyable, somewhat difficult, considered important in the short-term, and socially supported by others were associated with an increased sense of life satisfaction. Past research has also indicated a relationship between projects that have been self-initiated and life satisfaction in that individuals with higher life satisfaction are more likely to engage in projects that are self-initiated compared to individuals with lower life satisfaction (Yetim, 1993). There are also numerous other studies examining personal projects that found significant correlations between specific project dimensions and SWB

(see Pychyl & Little, 1998 for a review). For example, research done by Brunstein (1993) found project commitment (determination, urgency and willingness), project attainability (opportunity, control and support) and project progress to be highly predictive of SWB over time.

Although these past studies involving PPA did not examine SWB with respect to procrastination explicitly, they are important because they provide a basis for comparison for outcome research examining the effects of treatment for procrastination in relation to SWB, in general. In other words, past literature examining PPA and SWB may help to determine the appropriate outcome variables needed to determine the effectiveness of procrastination treatment.

However, there does appear to be some research examining the relationship between SWB and procrastination. For example, research done by Pychyl and Little (1998) revealed a correlation between perceptions of life satisfaction and procrastination. Personal projects research has also found a significant relationship between project efficacy and SWB. For example, project outcome -- the extent to which individuals perceive themselves to be efficacious in completing their projects -- was found to be the strongest predictor of life satisfaction (Little, 1989). Other researchers have found effectiveness to be a predictor of SWB as well (Bandura, 1977; Emmons, 1986; Wilson, 1990). In a recent study done by McGregor and Little (1998), goal efficacy (i.e., how likely one's projects are perceived to be successful) was significantly associated with happiness (i.e., operationalized by conventional SWB measures) and hedonistic participants (i.e., those with identities that revealed a propensity towards fun and pleasure) were happiest if they were accomplishing their goals. Specifically, McGregor

and Little found that the project dimensions difficulty, stress, challenge, time pressure, and outcome to all have a loading greater than .50 on the factor efficacy. These findings are relevant in terms of procrastination if one considers that the PPA factor efficacy relates directly to task completion. As Knaus (1998) notes, "...people who believe that they are generally ineffectual, or ineffectual at a specific task, are more inclined to procrastinate" (p. 43). Therefore, self-efficacy may be considered to be an important indicator of the effectiveness of academic procrastination treatment.

As can be seen from the preceding cursory review of the research literature relating PPA appraisal dimensions to SWB, project dimensions provide important information about an individual's SWB, particularly in relation to procrastination treatment effects. This is reflected in Little's (1998) belief that, "if...features of personal project systems influence well-being, then clinical, counseling, and organizational efforts to improve project systems should result in increases in well-being" (p. 204). For example, to the extent that procrastination intervention techniques or treatment is effective, it is conceivable that an individual's appraisal of project outcome would increase over time. At the end of treatment, the individual would rate his or her project as higher on the probability of a successful outcome, and, as we have seen, this is a strong indication of an overall increase in the individual's SWB.

Rationale and Hypotheses for the Present Study

The main purpose of the present research was to determine whether an academic procrastination treatment would reduce the procrastination behaviour of its participants.

It was hypothesized that students receiving treatment for procrastination would show a decrease in their procrastination post-test scores relative to their pre-test scores.

Although there is some research indicating that academic procrastination treatment is effective, most of this research is limited by the research design, particularly the lack of measures of SWB. In this regard, the second purpose of this study was to explore the effectiveness of an academic procrastination treatment approach in terms of increasing self-reported levels of SWB as measured by traditional scales of life satisfaction and affect as well as through PPA.

With respect to the traditional measures of SWB, it was hypothesized that participants receiving treatment would have increased scores with respect to life satisfaction and positive affect, and decreased negative affect scores at the post-test relative to the pre-test. No significant changes in SWB scores were expected for the comparison groups.

With respect to PPA and SWB, project factors *structure*, *efficacy*, *meaning* and *community* were anticipated to increase while *stress* was expected to decrease. The rationale for each of these predictions is discussed below.

Given that much of the treatment literature involves specific techniques and time management strategies (e.g., breaking tasks down into smaller steps) for overcoming procrastination (e.g., Burka & Yuen, 1983; Boice, 1996; Knaus, 1998), it is conceivable that participants may perceive their projects to have a certain amount of structure, such that they are considered manageable (e.g., Little, 1998). To that end, it was hypothesized that, over the course of treatment, project structure would increase significantly for the treatment group relative to the no-treatment group.

In light of the previously mentioned relationship between project efficacy and SWB (e.g., Little, 1983; McGregor & Little, 1998), it is understandable that procrastinators may perceive themselves as lacking in sufficient self-efficacy needed to complete their academic projects successfully. However, by incorporating various self-regulatory strategies into treatment (e.g., addressing the self-handicapping statements that sustain irrational thoughts), it is anticipated that participants will become more self-efficacious with respect to project completion. Thus, by the end of the treatment, treatment participants' appraisals of project efficacy were expected to be higher than no-treatment participants, relative to before treatment began.

Similarly, to the extent that students are progressing on their projects (i.e., not procrastinating) it is expected that they will find their projects more enjoyable and, hence, more meaningful (e.g., Little, 1986, 1989; Palys & Little, 1983). Therefore, project meaning was hypothesized to increase as a result of treatment for academic procrastination.

It was also hypothesized that an increase in students' appraisal of project community would occur for the treatment group compared to the no-treatment group. This is a logical assumption given the amount of sharing and personal disclosure that occurs within the setting of group treatment. That the therapeutic milieu is expected to foster an increased sense of community in its participants may be due, in part, to the fact that as project goals are discussed, they become more visible to others. As Little (1998) states, "project community can be enhanced by helping individuals talk about the projects that are deeply important to them with key individuals in their families or workplace so that they are able to gain support for projects about which others may have been unaware"

(Little, 1998, p. 209). It may further be speculated that in the context of treatment, increased visibility of projects may, in turn, increase the social support needed to make the treatment a success. Given that the academic environment is common to all students may also be one reason as to why, "group therapy...seems particularly helpful for college students and not particularly useful for nonstudents" (Ferrari et al, 1995, p. 190).

Finally, it is anticipated that by participating in the treatment sessions, project stress will be significantly reduced. This is expected to occur given the relationship between stress and the procrastinator as Burka and Yuen (1983) write, "Contrary to the myth that they are relaxed, easygoing, and lazy, we have seen that most procrastinators are in fact likely to be beset with fear, worry, and tension" (p. 175). Therefore, the inclusion of relaxation or visualization exercises (e.g., Burka & Yuen, 1983; Knaus, 1998) along with the other previously mentioned procrastination treatment strategies may help students to feel that they can effectively manage their workloads and feel less anxious while working on academic tasks.

Method

Participants and Recruitment

In total, 50 Carleton University students participated in this research. Fifteen of these participants belonged to the treatment (or workshop) group. The remaining 32 participants belonged to one of two comparison groups[1]. Students in the treatment group were self-identified procrastinators who sought out counselling in response to a campus poster announcement on a first-come-first-served basis (see Appendix H). The remaining students were randomly selected from the Procrastination Research Group mass testing pool based upon scoring in the top 30% on the Aitken Procrastination Inventory (API) (1982) measure. In other words, these students were considered to be high procrastinators relative to the rest of the students who completed the mass testing questionnaire. These students in the top 30th percentile were then contacted by telephone and, upon volunteering to participate in this study, were randomly assigned to one of two comparison groups. The first comparison group (n=17) received Personal Projects Analysis (PPA) while the second comparison group (n=18) did not receive PPA or any form of treatment. The remaining psychological measures, as described below, were completed by all participants (see Table 2). Grade-raising, introductory psychology experiment course credits were awarded to any student who was eligible.

Materials and Procedure

Materials

All participants completed a battery of measures across four time periods. The measures used in this study included: the Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum, 1984), the Academic Procrastination State Inventory (APSI; Schouwenburg, 1994), two measures of Subjective Well-Being (SWB) [The Satisfaction with Life Scale (SWLS; Diener et al., 1985) and positive and negative affect scales (Diener & Emmons, 1984)], and a modified version of Personal Projects Analysis (PPA; Little, 1983). These measures are described in detail below and are provided in Appendices C, D, E1, E2, F1 and F2, respectively.

Procrastination Assessment Scale-Students (PASS). The PASS is a reliable and valid (Solomon & Rothblum, 1984, 1988), two-part, 44-item scale developed to measure cognitive and behavioral aspects of student academic procrastination (see Appendix C). The first half of the test lists six academic pursuits including writing a term paper, studying for an exam, keeping up with weekly reading assignments, performing administrative tasks, attending meetings and performing other general academic tasks. Each of the six tasks are rated on the frequency of, reasons for and desire to stop procrastinating using three 5-point Likert scales (ranging from "a" = *never procrastinate*, *not at all a problem*, and *do not want to decrease*, respectively, to "e" = *always procrastinate*, *always a problem*, and *definitely want to decrease*, respectively). A total score is obtained by first assigning a numerical value to the 5-point Likert scale (i.e., a=1,

b=2, c=3, etc.) and then summing the first *two* questions of each of the six procrastination areas. The higher the score the greater the degree of self-reported procrastination.

The second half of the test presents a hypothetical procrastination situation involving the recollection of a term paper that has been delayed by the respondent. Twenty-six potential reasons for procrastinating on this task are provided (e.g., "Really disliked writing term papers.") and students are asked to rate each reason on a 5-point Likert scale ranging from *not at all reflects why I procrastinated* to *definitely reflects why I procrastinated*. For all of these items, two statements are used to describe each of the thirteen reasons provided. They include: 1) evaluation anxiety, 2) perfectionism, 3) difficulty making decisions, 4) dependency and help-seeking, 5) aversiveness of the task and low frustration tolerance, 6) lack of self-confidence, 7) laziness, 8) lack of assertion, 9) fear of success, 10) tendency to feel overwhelmed and poorly manage time, 11) rebellion against control, 12) risk-taking, and 13) peer influence. From these individual items, Solomon and Rothblum (1984) have created seven factors with factor loadings ranging from 0.56 to 0.98. They include fear of failure, aversiveness of task, difficulty making decisions, dependency, lack of assertion, risk-taking, rebellion against control.

According to Solomon and Rothblum (1994), test-retest reliability for the PASS was found to have a correlation of .80 overall. Specifically, one month test-retest correlations for the prevalence of procrastination was .74 and .56 for the reasons for procrastinating. In addition, tests for reliability using split-half (odd versus even) comparisons found the *prevalence* of procrastination coefficient to be .26 and .81 for the *reasons* for procrastinating (Ferrari et al., 1995). The former reliability coefficient may be considered low and is due perhaps to the fact that it included six different target areas

(Ferrari et al., 1995). However, the procrastination coefficient for "writing a term paper" was moderately high (.81) (Ferrari et al., 1995). Cronbach alphas for the present research were .79 for the prevalence of procrastination and .83 for the reasons for procrastinating.

This measure was useful in two ways. First, it provided a general level of overall student academic procrastination. Second, it provided various reasons as to why these students procrastinated (e.g., "You were worried you would get a bad grade."). Furthermore, the latter half of the PASS may be of particular importance in terms of treatment because it "is useful in both identifying potential focal areas for intervention, and in tracking changes in procrastination over time" (Solomon & Rothblum, 1994, p. 446).

Academic Procrastination State Inventory (APSI). The APSI is a 23-item scale, developed by Henri Schouwenburg (1992), designed to measure fluctuations in academic procrastination behavior and thoughts (see Appendix D). It contains three valid and reliable subscales (*academic procrastination*, *fear of failure*, and *lack of motivation*) with coefficient alphas of .90, .85, and .79, respectively (Ferrari et al., 1995). Cronbach alphas for the present research were .77, .78, and .78, respectively. Respondents are asked to rate the frequency of engaging in the items during the *last week* along a 5-point scale. It should be noted, however, that the APSI was originally written in Dutch and when it was translated to English the rating scale was not consistent with other scales (i.e., 1 = *not*, 2 = *incidentally*, 3 = *sometimes*, 4 = *most of the time*, and 5 = *always*.) Hence, to maintain congruity and clarity, the wording of the rating scale was slightly modified to include 1 = *not at all*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *all the time*. Two examples of

items include "Gave up studying because you did not feel well." and "Interrupted studying for a while in order to do other things." Ferrari referred to the APSI as a "newer and promising measure" that was appropriate for this research (personal communication, October 17, 1997). A total score was obtained by summing all items for each subscale, separately. Only the first factor (i.e., the *procrastination* subscale) had an item that needed a reverse score. The item in question was "Studied the subject matter that you had planned to do." Finally, it should be noted that the order of the items were randomized in the present study such that the specific subscales were not discernible to the individual who completed it.

Measures of Subjective Well-Being (SWB). Two measures were used to assess both cognitive and affective aspects of subjective well-being (SWB). The first measure (see Appendix E1), the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985), was used to assess the cognitive aspects of SWB. Ratings were made along a 7-point Likert scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). Scores were obtained by summing all five items (e.g., "I am satisfied with my life."). Diener et al. (1985) report their two-month test-retest correlation coefficient to be .82 with a coefficient alpha of .87. The Cronbach alpha for the present research was found to be .88. The SWLS is a robust measure originally designed to tap the global judgment of quality of life and has been suggested to be useful for clinical application (Diener, et al., 1985). Specifically, Pavot and Diener (1993b) state "the SWLS has shown sufficient sensitivity to be potentially valuable to detect change in life satisfaction during the course of clinical

interventions" (p. 164). Hence, this scale was chosen as an appropriate outcome measure for this research.

The second measure (see Appendix E2), a 9-item positive and negative affect scale (Diener & Emmons, 1984) was used to assess the affective aspects of SWB. Both scales have demonstrated temporal reliability and internal consistency with coefficients approaching .90 (Diener & Emmons, 1984). Alpha coefficients for both positive and negative affect scales have been found to be high at .89 and .84, respectively (Emmons, 1991). The present research found the Cronbach alphas to be .88 and .72 for both positive and negative affect scales, respectively. The positive items consisted of four adjectives (i.e., happy, joyful, pleased and enjoyment/fun) while the negative items consisted of five adjectives (i.e., depressed, unhappy, frustrated, angry/hostile and worried/anxious). Scores were obtained by summing across respective items. It should be noted that the additional item of *guilt* was included in the negative affect scale. Past research (e.g., Pychyl et al., 2000) has indicated that guilt is a significant positive correlate of procrastination; therefore, it was included in the scale because it was considered that changes in an individual's guilt might be an important index for clinical intervention. Moreover, this measure was included to provide an overall indicator of SWB and, as such, was used as an outcome variable to reflect changes in student life satisfaction and affect over time.

Modified Personal Projects Analysis (PPA). As previously discussed, personal projects analysis may be used as an assessment device to study various aspects of an individual's everyday pursuits and goals and as an indirect measure of SWB (e.g., Little,

1983, 1986). With PPA, typically respondents are asked to write down as many personally salient projects as they can think of in ten minutes in what is called the *elicitation list* or "*project dump.*" Participants then choose ten projects from this list, write them down in the PPA matrix and appraise each project along a number of dimensions (see Appendix F1). The PPA instructions were modified to obtain academic projects only. In other words, participants were asked to list only their academic projects. The projects are appraised on an 11-point scale from zero to ten where a zero indicates a low rating and a ten indicates a high rating on a particular project dimension.

In this study, projects were rated across 16 PPA dimensions including: importance, enjoyment, difficulty, visibility, control, initiation, stress, time adequacy, outcome, self-identity, other's view, positive impact, negative impact, progress, challenge and absorption. Additional relevant dimensions were also included in the PPA matrix including *procrastination* and *guilt*. This was based upon previous research that found a significant correlation between procrastination and the standard project dimensions (Blunt & Pychyl, 2000; Pychyl, 1995) as well as guilt (Blunt & Pychyl, 2000; Pychyl, 1995; Pychyl & Little, 1998).

Project dimension scores were calculated by summing across all project ratings. The mean score for each of Little's five project factors was then obtained by collapsing across the corresponding project dimensions (see Table 1). These five factors included *meaning*, *structure*, *community*, *efficacy*, and *stress*. These factors served as important outcome variables by revealing an individual's overall project system. A complete list of the project appraisal dimensions grouped by project factor are presented in Table 1.

In sum, two measures of procrastination and three measures of subjective well-being were used in this study. The former included both the degree to which students procrastinated, as well as their reasons for delaying academic tasks. The latter contained both cognitive and affective aspects of SWB including the level of students' life satisfaction (cognitive), their general positive and negative feelings (affective) and their appraisals of the academic projects that they were working on (cognitive and affective). Taken together, these variables were used to determine the extent to which treatment helped to decrease procrastination and improve the everyday lives of students.

Table 1.

Original Five Factors of PPA and Their Respective Project Dimensions

Factor	Project Dimension
MEANING	Importance, Enjoyment, Self-Identity, Absorption
STRUCTURE	Control, Initiation, Time Adequacy
COMMUNITY	Visibility, Other's View
EFFICACY	Outcome, Progress
STRESS	Difficulty, Stress, Challenge

Procedure

All participants were asked to read and sign an informed consent form before completing the questionnaire package (Appendices A1, A2 and A3). The actual questionnaires received during any given period depended upon the group and time interval. A summarized testing schedule indicating what measures were given, when they were received, and by whom is presented in Table 2.

Students in both comparison groups were scheduled, according to individual availability, to meet on campus to complete the questionnaires. As such, the testing for most of the students belonging to the comparison groups did not coincide with the *exact* day of testing for the treatment group. However, all the testing for these students occurred within the same week as the treatment group. An informal debriefing was provided for all participants at the end of Time 4 data collection (Appendices B1, B2, and B3).

Table 2.

Summarized Testing Schedule for All Groups Across All Time Intervals

Group	Time 1 (Pre-session)	Time 2 (Session 3)	Time 3 (Session 6)	Time 4 (Follow up)
Treatment	all measures	PPA only	all measures	all measures
Comparison Group 1	all measures	PPA only	all measures	all measures
Comparison Group 2	all measures (except PPA)	none	all measures (except PPA)	all measures (except PPA)

Note. The order of all measures was randomized within each session.

Academic Procrastination Workshop and Research Procedure

The following section provides the content and format for both the workshop and research procedure. The research component describes the procedure involving ***both*** the treatment group and comparison groups. It should be noted that much of the content overlapped between workshop sessions. This was unavoidable and, in fact, necessary considering the very nature of group therapy. When ideas and concepts are shared, it is not uncommon to revisit previously discussed topics. Some may argue that this is inevitable with respect to cognitive-behavioral approaches given that the aim is to modify pre-existing beliefs that are often resistant to change (Kuehlwein & Rosen, 1993).

The treatment group participated in six, two-hour, workshop sessions (one pre-session and five treatment sessions) that took place once a week at Carleton University. The sessions and data collection were conducted in the winter term of 1998. Former university counsellor, Margaret Delicate, facilitated the workshop. The experimenter co-facilitated the group under Ms. Delicate's supervision.

The day before each session, the experimenter called the students to remind them about the workshop. For those students who missed sessions, a telephone check-up was made to inquire about their reasons for not attending.

Pre-session

Treatment component. A brief overview of the workshop objectives was outlined and issues of confidentiality and commitment to the workshop were discussed with the participants.

The cognitive-behavioral approach of this workshop was based upon a previous treatment program offered at Carleton University with the purpose of providing increased insight, skills and strategies to help students overcome their academic procrastination. As Delicate (1998) outlined in her presentation for the Canadian Association of College and University Student Services (CACUSS, June 1998), her goals in working with procrastination were to: 1) change the thinking patterns that sustain procrastination; 2) reduce the often paralyzing feelings of guilt and anxiety; and 3) help students manage their workload by breaking down large tasks into smaller ones and, thus, prevent feelings of being overwhelmed. These aspects of the treatment were similar to various other cognitive-behavioral approaches (e.g., Johnson & McCown's "Doing It Now" (DIN) program, see Ferrari et al., 1995) as well as treatment strategies and techniques mentioned previously (e.g., Burka & Yuen, 1983; Knaus, 1998).

Research component. This was the first testing interval (T1) (see Table 2). Every participant was required to complete a consent form (Appendices A1, A2, and A3). For those students attending the workshop, a description about the research study was provided, followed by a questionnaire package that was to be completed before participants left the group. The package contained all five measures as described in the previous section. The students in the first comparison group received the same package of questionnaires while the students in the second comparison group received all measures *except* for the PPA.

Session 1

Treatment component. The purpose and goals of the workshop were explained along with participant introductions to the group. Definitions of procrastination were explored together with the pros and cons of task delay. Participants were asked to share personal thoughts and feelings pertaining to their own experiences of academic procrastination. The issue of taking responsibility for one's own behavior was addressed. From this, discussions surrounding students' thoughts and feelings about academia ensued. Aspects of procrastination such as task avoidance, fear of failure (e.g., Rothblum, 1990) and irrational thoughts were discussed in an attempt to dispel any cognitive myths (e.g., "I should be productive all the time"), as well as challenge existing maladaptive thoughts that sustain procrastination (e.g., "If I start earlier, then I will have less or no time to do enjoyable things."). Students were asked to write down their feelings about procrastination and replace their pre-existing, unfavorable thoughts with more helpful ones using exercise sheets that were handed-out (Appendix G). On the first sheet, students were asked to document their thoughts and behaviors and rate their feelings (on a ten-point scale) associated with academic procrastination before, during and after a chosen task or activity. However, the results of these exercises were not a part of this study. The second sheet was the same as the first except, in this instance, students were asked to replace their previous thoughts with more helpful ones that they generated on their own based upon some tips given in the session (see Appendix G). Next, they were asked to rate their feelings and behaviors associated with these new thoughts relative to the chosen task or activity. At the end of the session, the implications of anxiety upon procrastination were raised, and participants were taught relaxation

exercises (involving visualization) to help minimize this anxiety. Assignments for the following session were to practice the relaxation technique and to continue to use the exercise sheets. It should be noted that thoughts, feelings, and behaviors pertaining to procrastination were revisited throughout the workshop.

Research component. None, no data collection.

Session 2

Treatment component. This session began with a discussion of the previous session's assignment. An overview of the cognitive beliefs which sustain procrastination were discussed further (e.g., perfectionism: "I should be perfect, if not I am worthless."). Issues around getting started were brought up. Reinforcing the content from the previous session, students were asked to brainstorm on how to change their "cognitive script" (i.e., new statements to replace the old less helpful statements). Subsequently, students broke off into dyads to help each other find solutions to their individual problems and suggest alternatives to their irrational thinking (e.g. irrational thought: "If I like [a particular subject] I should be good at it and it should come easy to me."). Another exercise sheet adapted from psychologist Neil Fiore (as cited in Burka & Yuen, 1983) was handed-out called "the un-schedule." Here, students were supplied with a blank timetable for the week (weekends included) that divided each day into 30 minute intervals. Students were asked to fill in all timeslots that pertained to routine activities, such as getting ready in the morning, transportation to and from university, scheduled classes, etc. This included predictable activities as well, for example, appointments, meetings, etc. If it was uncertain when exactly a particular activity would be done (e.g., grocery shopping),

students were asked to estimate the time and day they might do it. Finally, they were instructed to *not* record doing any academic work until *after* they had done some. At this point, they were asked to take the un-schedule home and, over the course of the week, indicate the *actual* time spent on any coursework by writing it in the schedule. The purpose of the un-schedule was to provide students with a more realistic view of what their individual schedules were like. This exercise allowed students to make several observations including when they were studying, how long they were studying and where else in their schedules they could make time to study. This helped students: 1) look ahead to see how much of their time was already committed and, hence, see the maximum amount of time left to complete tasks: and 2) look back to see where their time had gone.

Research component. This was the second testing interval (T2). Participants who previously completed the PPA (the treatment group and first comparison group) were asked to complete the PPA again (see Appendix F2 for modified instructions). Projects were rated along all project dimensions as previously done in the pre-session. No research testing was required for the second comparison group.

Session 3

Treatment component. In this session, the topic of project management was introduced in conjunction with feedback from using the un-schedule given in the previous session. Goal-setting was mentioned in the context of breaking down projects into manageable parts. Each student was asked to choose one project to work on and to team up with a partner to plan how she or he were to go about working on it. All participants were instructed to take turns listening to and strategizing with her or his partner about a

specific academic task. In addition, students were encouraged to consider possible self-sabotage statements or circumstances that may be preventing them from reaching their goal. A discussion concerning choice brought up issues regarding control (or fear of losing it), self-actualization, societal expectations and resentment from the group. The counsellor then addressed the issue of low frustration tolerance, and she also elaborated further upon concepts such as fear of success as well as failure (e.g., Rothblum, 1990), the distinction between the two and comfort zone issues (i.e., using procrastination to be connected to others). Further, thought-keeping was mentioned in light of easing the sometimes paralyzing guilt students may be feeling. For example, students were encouraged to avoid using words like "should" or "must" with themselves when trying to overcome procrastination. Another dyad exercise gave students the chance to correct this "lecturing or parental style" that many participants had embedded as part of their cognitive script. Students were encouraged to monitor and modify their cognitive scripts and irrational negative self-talk over the course of the week as well as continue to work on the task they chose to focus on with their partner at the beginning of the session.

Research component. None, no data collection.

Session 4

Treatment component. At the beginning of this session, as with previous sessions, students were asked for feedback as to how they were feeling, what they were doing, what obstacles or self-sabotaging (if any) had occurred in the past week. Negative self-appraisals (e.g., "I'm too stupid to finish this."), as well as problem-oriented solutions were addressed as needed. The group, as a whole, offered solutions for specific students

in need of help. The issue of project management was revisited. To assist students in their progress, the counsellor presented an outline of seven guidelines towards meeting goals. These objectives were as follows: 1) make your task specific and concrete; 2) break your task into small steps; 3) start up ; 4) visualize your progress; 5) optimize your chances of completing your task; 6) stick to a time limit; and 7) do not wait until you feel like it. The notion of commitment was introduced along with the costs and benefits of procrastinating. For example, it was pointed out that some students may be feeling "stuck" because they perceived becoming more productive a threat (e.g., "No longer procrastinating might mean that people will expect me to continue to do well.").

Research component. None, no data collection.

Session 5

Treatment component. During this session, overall feedback about the workshop was discussed within the group and, with the permission of all participants, was audio-recorded by the experimenter. Students were asked whether they felt that they had benefited from the treatment and in what way. They were also asked to comment on what they disliked about the workshop and made suggestions on how to improve it. Specific feedback comments are provided in the Discussion section. It is important to note that these tape-recordings were used to help understand the numerical data and were not systematically quantified or analyzed in any other manner as the focus was on the outcome measures of procrastination and SWB.

Research component. This was the third testing interval (Time 3). The complete questionnaire package was given to all three groups. However, only the groups that previously completed the PPA were asked to complete it again.

Follow up session

Treatment component. None.

Research component. This was the fourth testing interval (Time 4). A follow-up appointment was scheduled in mid-April (approximately 2 weeks after treatment ended). All participants were asked to complete the questionnaire package. The PPA was completed by the treatment group and the first comparison group in the same manner as in Session 5. Similarly, feedback was audio-recorded for those participants who did not attend Session 5. A debriefing summary was provided to each participant upon completion of the questionnaire package (see Appendices B1, B2, B3).

Results

Of the total sample of 50 students, 62% (n=31) were enrolled in the Faculty of Arts and Social Sciences (FASS), 14% (n=7) in Science, 10% (n=5) in Public Affairs and Management, 8% (n=4) in Engineering, and 6% (n=3) in Law. The majority of these students (n=42) were registered in full-time studies.

With respect to the treatment group, three students did not complete the workshop and, as such, did not complete the questionnaire throughout all of the testing sessions. Therefore, any data pertaining to these participants were eliminated from the analysis. This reduced the original number of participants in the treatment group from 18 to 15. From this remaining group, the majority of students (n=13) attended at least 4 out of 6 workshop sessions while the rest of the participants (n=2) attended half of the workshop sessions. The most common reason given by students for missing a workshop session pertained to other academic commitments (e.g., had to write an assignment).

In response to the PASS question, "To what extent do you want to decrease your tendency to procrastinate on this task?" the mean pre-test scores for each of the three groups, across all six academic domains, were 4.17 (SD = .57), 3.87 (SD = .68) and 4.07 (SD = .53), respectively. A one-way ANOVA revealed no significant difference between groups at the pre-test for this item suggesting that all three groups appeared to be equivalent in their desire to decrease their procrastination across all six academic domains on the PASS.

Similarly, all three groups were equivalent in terms of age (see Table 3). With respect to gender, however, females were overrepresented in the treatment group. This gender imbalance was unavoidable, as this group volunteered on a first-come, first-

enrolled basis. This gender bias is not a surprise according to Rothblum (as cited in Boice, 1996, p. 30) who found procrastination to be "more common among women." Furthermore, research done by Jourard (1971) has found that females are often socialized to self-disclose more than males. In addition, females often connect with others when they are in need of support. For example, a study examining social support during a transition into a new school found that, "Girls may be more likely than boys to seek out other sources of support when their peers do not provide it" (Dunn, Putallaz, Sheppard, & Lindstrom, 1987, cited in Steinberg, 1993, p. 331). This is particularly relevant considering that many students in the treatment group were in their first year of university. Hence, these reasons may have motivated more female than male students to participate in the workshop given its support-group format.

Table 3.

Age and Gender: Descriptives Across Groups

Descriptive	Treatment Group	Comparison Group 1	Comparison Group 2
Age			
M	22.86	21.24	20.22
SD	5.29	5.30	2.13
Gender			
Female	10	8	9
Male	5	9	9

Note. Comparison Group 1 received PPA. Comparison Group 2 did not receive PPA.

Analysis Overview

All statistical analyses were performed using SPSS 7.5. Due to the small sample size for each of the three groups, it was decided that T1 outcome variable scores would be used as a covariate in order to adjust for any pre-existing differences between groups and, hence, maintain a sufficient amount of power needed to detect any significant changes (Keppel, 1991). Separate ANCOVAs were used to analyze each of the dependent variables. Follow-up planned comparisons were performed for pre- and post-scores for both between-groups and within-subjects analysis. No family-wise error correction was made due to the fact that these were planned comparisons (i.e., a priori) and, as such, could be justified theoretically.

Procrastination Assessment Scale-Students (PASS) Scores

The results of the PASS are divided into two sections. The first section presents the results pertaining to the overall level of self-reported academic procrastination. The second section presents the results pertaining to the reasons for procrastinating across several factors previously defined by Solomon and Rothblum (1984). Both sections include the results for between-groups and within-groups analyses separately.

In order to investigate whether a significant decrease in the prevalence of procrastination would occur over time for the treatment group relative to the comparison groups, the first section of the PASS provided a total procrastination score and was analyzed using a repeated measures ANCOVA with T1 PASS scores as a covariate. The PASS scores for each group at each time interval are presented in Table 4. The Levene's test of homogeneity was significant at T3. Consequently, as recommended (e.g., Keppel,

1991), a more conservative p-value ($p < .01$) was used for rejecting the null hypothesis to account for this small violation in the assumptions. As expected, an omnibus F test yielded a significant difference between groups ($F(2, 46) = 8.18$, $p < .001$).

Table 4.

Mean PASS Scores Across Groups Over Time

	Time Interval		
Group	T1	T3	T4
Treatment			
M	44.33	38.33	40.73
SD	5.23	9.83	6.10
Comparison 1 (w/PPA)			
M	44.58	44.47	44.76
SD	8.06	7.43	6.53
Comparison 2 (w/o PPA)			
M	43.44	42.67	43.22
SD	5.62	6.27	6.94

Note. The PASS was not administered at T2.

Follow-up comparisons revealed the mean difference in PASS scores for the treatment group to be significantly less than scores for both comparison groups at T3 ($D = -5.91$, $p < .003$ and $D = -5.14$, $p < .01$, respectively) as well as T4 ($D = -3.83$,

$p < .01$ and $D = -3.21$, $p < .03$, respectively). In other words, this finding reflected a significant reduction in procrastination for the treatment group relative to the comparison groups, both after treatment had ended and at the follow-up. There was no significant difference between the comparison groups themselves.

Using paired-samples t tests, within-subjects analysis for the treatment group revealed significant decreases in PASS scores for T1 vs. T3 ($t(14) = 2.85$, $p < .01$) and T1 vs. T4 ($t(14) = 3.89$, $p < .002$). There were no significant differences within-subjects for the remaining two groups. Taken together, these results suggest that the workshop had some effect in lowering the level of procrastination for the treatment group over and above chance alone.

The second section of the PASS provided possible reasons for procrastinating and was analyzed using a repeated measures ANCOVA with T1 scores as the covariate. Overall mean factor scores were found by collapsing the items across seven categories: 1) fear of failure, 2) aversiveness of task, 3) difficulty making decisions, 4) dependency, 5) lack of assertion, 6) risk-taking, and 7) rebellion against control. An omnibus F test yielded a significant difference between groups ($F(2, 41) = -3.63$, $p < .04$) for the factor *difficulty making decisions*. A follow-up comparison found that at T4, only the comparison groups were significantly different ($D = -.81$, $p < .02$) with the second comparison group reporting significantly more difficulty making decisions than the first comparison group. None of the six remaining PASS factors demonstrated statistically significant differences between groups.

Using paired-samples t tests, within-subjects analysis for the second comparison group (i.e., did not receive PPA) revealed a significant increase in the *difficulty making*

decisions factor for T1 vs. T3 ($t(17) = -2.15$, $p < .05$). There were no significant differences within-subjects for the remaining two groups.

On the whole, the results from the second part of the PASS seem to suggest that regardless of whether they were receiving treatment for their procrastination or not, students did not differ in their reasons for procrastinating.

With respect to individual items reflecting why students procrastinate, this research yielded similar findings when compared to normative data. Two commonly endorsed reasons were: "Just felt too lazy to write a term paper" (42.7%) and "Really disliked writing term papers" (30.7%). Comparatively, students in Solomon and Rothblum's sample (1984) self-reported: "Just felt too lazy to write a term paper" (42.4%), and "Really disliked writing term papers" (47.0%).

Academic Procrastination State Inventory (APSI)

In order to investigate whether a significant difference occurred between groups as a result of treatment in terms of overall thoughts and behaviour as they pertained to procrastination, an ANCOVA was used to analyze APSI scores. Table 5 presents the mean APSI scores between groups across all three time intervals for all three of Schouwenburg's factors: *procrastination*, *fear of failure*, and *lack of motivation*.

A repeated measures ANCOVA found a significant difference between groups for the factor *procrastination*, $F(2, 46) = 4.57$, $p < .02$, only. Follow-up comparisons revealed that the treatment group engaged in significantly less thoughts and behaviors pertaining to procrastination at T3 ($D = -.37$, $p < .01$) and T4 ($D = -.47$, $p < .01$) compared to the first comparison group. The results suggest that, over time, students in

the treatment group perceived themselves to be engaged in significantly less thoughts and behaviors pertaining to procrastination than the comparison group receiving PPA. No significant difference was found between the treatment group and the second comparison group. However, a significant difference was found between the comparison groups at T3 ($\underline{D} = .37$, $\underline{p} < .01$) with the second comparison group indicating a decrease in their procrastination scores relative to the first comparison group. No significant difference was found between comparison groups on their procrastination scores at T4. Neither of the two remaining APSI factors demonstrated statistically significant differences within or between groups.

Using paired-samples $\underline{t}$ tests, within-subjects analysis for the treatment group revealed significant decreases in APSI factor procrastination scores for T1 vs. T3 ($\underline{t}(14) = 4.13$, $\underline{p} < .001$) and T1 vs. T4 ($\underline{t}(14) = 2.48$, $\underline{p} < .03$). In other words, the treatment group showed significant decreases in behaviors and/or thoughts relating to procrastination after attending the workshop (post-test) compared to before attending the workshop (pre-test). Similarly, the second comparison group's procrastination scores decreased for T1 vs. T3 ($\underline{t}(17) = 2.50$, $\underline{p} < .02$) and T1 vs. T4 ($\underline{t}(17) = 2.37$, $\underline{p} < .03$). Thus, it would appear PPA without counselling had an effect on procrastination as measured by the APSI. No significant within-subjects differences were found for the remaining comparison group.

Table 5.

APSI: Means and Standard Deviations for Three Factors Across Time and Group

	Time Interval		
Factor	T1	T3	T4
Procrastination			
Treatment	3.61 (.45)	3.30 (.51)	3.20 (.52)
Comparison 1 (w/PPA)	3.81 (.55)	3.86 (.59)	3.72 (.39)
Comparison 2 (w/o PPA)	3.77 (.49)	3.50 (.60)	3.52 (.61)
Fear of Failure			
Treatment	3.03 (.84)	2.76 (.80)	2.76 (.91)
Comparison 1 (w/PPA)	2.76 (.98)	2.69 (1.02)	2.80 (.91)
Comparison 2 (w/o PPA)	2.84 (.95)	2.69 (.69)	3.08 (.93)
Lack of Motivation			
Treatment	2.88 (.82)	2.98 (.88)	2.85 (1.06)
Comparison 1 (w/PPA)	3.04 (1.07)	2.87 (1.05)	2.85 (.80)
Comparison 2 (w/o PPA)	3.33 (.88)	3.25 (1.00)	3.08 (1.08)

Note. Standard deviations are in parentheses.

Subjective Well-Being (SWB) Measures

In the sections that follow, measures of SWB were analyzed separately. The first section provides the results of the cognitive component to SWB, namely, the Satisfaction With Life Scale (SWLS). The second section provides the results for both positive and negative affective scales, separately.

SWLS Scores. The overall mean score on the SWLS was 21.32, with a standard deviation of 7.29. This mean score was lower than that of undergraduates in the study done by Diener et al. (1985) that found the mean on the SWLS to be 23.5, with a standard deviation of 6.43. Table 6 presents all group means and standard deviations across time for students in the present study. In order to investigate whether mean satisfaction with life scores changed, over time, a repeated measures ANCOVA was used to detect any significant differences between groups. The analysis revealed no significant difference in SWLS scores between groups. These results suggest that none of the participants differed in how they cognitively perceived their satisfaction with life. Similarly, a within-subjects analysis revealed no significant differences over time for any of the three groups. This is contrary to previous research that found the life satisfaction of clients in therapy changed significantly from 14.1 (SD = 1.9) at the start of therapy, to 26.9 (SD = 3.6) after one month of therapy (Friedman, 1991, cited in Pavot and Diener, 1993b).

Table 6.

Mean SWLS Scores Across Groups Over Time

	Time Interval		
Group	T1	T3	T4
Treatment			
M	19.40	20.60	21.33
SD	8.19	8.53	8.09
Comparison 1 (w/PPA)			
M	21.53	23.88	22.64
SD	7.80	7.65	7.56
Comparison 2 (w/o PPA)			
M	19.67	21.22	21.39
SD	6.36	7.83	8.04

Note. The SWLS was not administered at T2.

Affect Scales. Using a repeated measures ANCOVA, both affect scales were analyzed separately across groups and time. The means and standard deviations are presented in Table 7 below. Despite participants rating their overall positive feelings higher than their negative feelings, no significant differences between groups were found suggesting that participants were similar and consistent in how they felt over time. Similarly, a within-subjects analysis revealed no significant differences over time for any of the three groups. These results were contrary to what was originally expected as it was

hypothesized that the treatment group would show increased positive and decreased negative affect.

Table 7.

Mean Positive and Negative Affect Scores Across Groups Over Time

	Time Interval		
	T1	T3	T4
Positive Affect			
Treatment	18.80 (4.84)	20.00 (4.65)	19.47 (5.24)
Comparison 1 (w/PPA)	21.76 (4.01)	21.65 (3.43)	22.24 (4.94)
Comparison 2 (w/o PPA)	20.44 (4.41)	19.67 (4.20)	18.78 (5.01)
Negative Affect			
Treatment	27.00 (6.40)	25.73 (6.60)	26.00 (5.53)
Comparison 1 (w/PPA)	26.18 (6.02)	24.00 (10.01)	25.18 (9.42)
Comparison 2 (w/o PPA)	26.11 (5.27)	25.44 (5.80)	27.61 (7.27)

Note. The affect scale was not administered at T2. Standard deviations are in parentheses.

Personal Projects Analysis

The results of PPA are divided into two main sections. The first section presents the results for the five original factors of PPA. The second section presents the results for selected project dimensions within PPA. Both sections include separate results for between-groups and within-subjects analyses.

For the purposes of this research, the project dimensions *positive impact* and *negative impact* were not analyzed as they do not fall under any particular PPA factor (see Table 1). Twenty representative examples of the projects students listed are provided in Table 8. These projects were randomly selected with the purpose of demonstrating the varying range of academic tasks on which students were working.

Project Factors

Within-subjects Analysis. Scores for each of the first 16 PPA dimensions were summed across all of the projects and their respective means were grouped into Little's (1983, 1989) original five factors: *meaning*, *structure*, *community*, *efficacy* and *stress*. The factor means and standard deviations for all four time intervals are presented in Table 9. Using paired-samples t tests for both groups separately, only the treatment group revealed within-subjects significance over time for three PPA factors: *structure*, *community*, and *efficacy*. The treatment group's appraisal of project structure increased at the end of treatment ($t(14) = -2.76$, $p < .02$) as well as at the follow-up ($t(14) = -3.82$, $p < .002$) relative to before treatment began. Similarly, this group reported project community to be higher at the follow-up ($t(14) = -2.66$, $p < .02$); however, this increase

Table 8.

Sample of Student Academic Projects

1) Work on math problems
2) Read *Watership Down*
3) Raise my GPA
4) Keep up with readings on a daily basis
5) Study for finals
6) Research on Web
7) Speak to an academic advisor
8) Prepare for presentation
9) Start viewing ITV tapes
10) Meet with accounting group
11) Drop geography
12) Register for summer courses
13) Finish Java assignment
14) Make study notes for Spanish
15) Find a tutor
16) Pick up marked assignment
17) Get chemistry notes
18) Improve attendance at lectures
19) Review difficult physics questions
20) Read remaining psychology chapters

Table 9.

Means and Standard Deviations Between Groups Over Time for Five Factors of PPA

	Time Interval			
Factor	T1	T2	T3	T4
Meaning				
Treatment	5.59 (1.50)	5.82 (1.54)	5.93 (1.78)	6.18 (1.26)
Comparison 1 (w/PPA)	6.02 (1.54)	6.30 (1.20)	6.29 (1.23)	6.20 (1.45)
Structure				
Treatment	5.11 (1.52)	5.68 (1.63)	6.40 (1.13)	6.40 (1.14)
Comparison 1 (w/PPA)	5.22 (1.78)	5.50 (1.55)	5.63 (1.70)	5.86 (1.92)
Community				
Treatment	4.00 (2.48)	4.35 (2.27)	4.12 (2.72)	5.48 (2.46)
Comparison 1 (w/PPA)	4.90 (1.57)	5.12 (1.54)	4.92 (1.24)	5.49 (1.78)
Efficacy				
Treatment	4.85 (0.94)	5.26 (1.65)	5.46 (1.25)	5.30 (1.29)
Comparison 1 (w/PPA)	5.24 (1.43)	5.17 (1.26)	5.38 (1.37)	5.16 (1.41)
Stress				
Treatment	5.94 (1.40)	5.85 (1.45)	5.43 (1.78)	5.71 (1.37)
Comparison 1 (w/PPA)	5.15 (0.78)	5.15 (1.20)	5.27 (1.21)	4.88 (1.60)

Note. Comparison group 2 did not receive PPA.

did not occur at the end of treatment (T3). On the contrary, project efficacy increased at the end of treatment ($t(14) = -2.21$, $p < .04$) but not at the follow-up, compared to before treatment. These pre- vs. post-test results for the treatment group are presented in Table 10. It was decided that no family-wise error correction was needed due to the theoretical rationale that the comparison between pre- and post-test scores was planned for all significant PPA factors.

In general, these results suggest that project systems for those students receiving treatment for their procrastination were more structured and visible to others. It also suggests that these students perceived themselves to be more self-efficacious by the end of treatment compared to when they started.

Between-groups Analysis. A repeated measures ANCOVA was performed using T1 project appraisal ratings as a covariate, for each of the PPA five project factors (*meaning*, *structure*, *community*, *efficacy* and *stress*). No significant differences between groups were found.

Project Dimensions

Within- subjects Analysis. Only the underlying PPA dimensions of the three significant factors (i.e., structure, community and efficacy) from the within-subjects analysis of the treatment group were explored, respectively. No significant difference in project dimension appraisals, across these three factors, was found for the comparison group.

Table 10.

Treatment Group: Paired-Samples t test Results of Pre- vs. Post- Test Ratings for all Significant PPA Factors

PPA Factor	T1 vs. T3	T1 vs. T4
Structure	$t(14) = -2.76, p < .02$	$t(14) = -3.82, p < .002$
Community	n.s.	$t(14) = -2.66, p < .02$
Efficacy	$t(14) = -2.21, p < .04$	n.s.

Note. n.s. = not significant

Paired-samples t tests found several project dimensions to be significantly different when mean pre- vs. post-test scores were compared; these included: *outcome*, *time adequacy*, *control* and *other's view*. The project dimension *procrastination* was also examined given the focus of this study. The means and standard deviations for each of these PPA dimensions are presented in Table 11 along with those of the comparison group. The results of the t tests for these project dimensions are presented in Table 12.

Relative to the pre-test, *procrastination* project dimension appraisals significantly decreased by the end of treatment ($t(14) = 2.15, p < .05$). Interestingly, this result was not significant by the follow-up, despite that the overall *procrastination* rating at the follow-up was lower than before treatment began. In other words, it would appear that the treatment group's ability to decrease their project-level procrastination, or at least their self-reports of their project procrastination, rebounded somewhat after treatment sessions

had ended. This may indicate that the treatment effects are not sustainable over time in terms of project procrastination.

The remaining four significant project dimensions, namely, *outcome*, *time adequacy*, *control*, and *other's view* improved over time. Specifically, in terms of the successful completion of their projects, or project outcome, students appraised their projects as potentially more successful by the end of treatment compared to before treatment began ($t(14) = -3.00$, $p < .01$). However, an improved appraisal of the project dimension outcome was not observed at the follow-up. Similarly, in terms of time adequacy, students considered the amount of time they spent on their projects to be more adequate, but only at T4 relative to T1 ($t(14) = -2.55$, $p < .02$) *not* T3 relative to T1. The same was found with respect to how important projects seemed to be by relevant people (i.e., other's view) ($t(14) = -2.88$, $p < .01$). In other words, the treatment group considered that other people perceived their projects to be more important at the follow-up than at any other time. However, in the case of project *control*, appraisals were significantly higher at both the post-test ($t(14) = -2.56$, $p < .02$) and the follow-up ($t(14) = -2.75$, $p < .02$), relative to the pre-test. This would seem to suggest that treatment may have improved students' sense of control over their projects.

Table 11.

Means and Standard Deviations for Significant Project Dimensions Across Groups and Time

	Time Interval			
Factor	T1	T2	T3	T4
Procrastination				
Treatment	8.04 (1.45)	7.09 (1.97)	6.66 (2.49)	7.08 (1.62)
Comparison 1 (w/PPA)	7.76 (1.53)	7.59 (1.65)	7.52 (1.41)	7.27 (1.53)
Outcome				
Treatment	6.59 (1.00)	7.08 (1.58)	7.33 (1.20)	6.84 (1.37)
Comparison 1 (w/PPA)	7.15 (1.39)	7.12 (1.03)	7.38 (1.05)	7.03 (1.82)
Time Adequacy				
Treatment	2.93 (1.80)	4.14 (1.76)	4.40 (2.34)	4.24 (1.94)
Comparison 1 (w/PPA)	3.49 (2.03)	3.74 (2.17)	4.25 (2.21)	4.41 (2.79)
Control				
Treatment	6.23 (1.91)	6.35 (1.52)	7.81 (1.88)	7.51 (1.52)
Comparison 1 (w/PPA)	6.78 (2.33)	7.26 (1.52)	7.04 (2.18)	7.23 (1.79)
Other's View				
Treatment	4.72 (2.99)	5.17 (2.49)	4.81 (2.92)	6.40 (2.76)
Comparison 1 (w/PPA)	5.91 (2.39)	5.60 (2.30)	5.54 (2.21)	6.47 (2.00)

Table 12.

Treatment Group: Paired-Samples t test Results of Pre- vs. Post-Test Ratings for all Significant PPA Dimensions

Factor	T1 vs. T3	T1 vs. T4
Procrastination	$t(14) = 2.15, p < .05$	n.s.
Outcome	$t(14) = -3.00, p < .01$	n.s.
Time Adequacy	n.s.	$t(14) = -2.55, p < .02$
Control	$t(14) = -2.56, p < .02$	$t(14) = -2.75, p < .02$
Other's view	n.s.	$t(14) = -2.88, p < .01$

Note. n.s. = not significant

Discussion

The purpose of this research was to evaluate whether a campus-based workshop designed to treat academic procrastination had an effect upon students' overall self-reports of their academic procrastination as well as their subjective well-being (SWB). The data collected in this quasi-experimental design yielded several significant and interesting findings with the main result being that treatment decreased participants' perceptions of their level of procrastination, but did not have an impact on their SWB. However, caution is needed in interpreting the results due to the small sample sizes for each group which reduced the amount of power and, subsequently, may have increased the risk of committing a Type II error (Keppel, 1991).

This section is divided into two main parts. The first section presents the results of the outcome variables, namely, those for procrastination and SWB, respectively. The second section presents the limitations of the present research along with several recommendations for future research in the area of academic procrastination treatment.

Procrastination

One of the main objectives of the workshop was to help students decrease their tendency to procrastinate. The results of this research revealed three key pieces of evidence, all of which were indicative that the treatment had some degree of success in reducing procrastination. The first of these pertains to the Procrastination Assessment Scale-Students (PASS), whereby a significant difference between groups revealed a decline in self-reported academic procrastination for the treatment group relative to the comparison groups at both the post-test and follow-up testing intervals. Additionally, the

within-subjects analysis for the treatment group indicated that the PASS scores significantly decreased at the end of treatment as well as at the follow-up, relative to before treatment began. Secondly, the Academic Procrastination State Inventory (APSI) procrastination scores for the treatment group decreased significantly relative to the first comparison group at both the post-test and follow-up testing intervals. Similarly, a within-subjects analysis of this factor revealed a significant decrease in thoughts and behaviours pertaining to procrastination, over time, for those participants who received treatment. Thirdly, the PPA project ratings of procrastination significantly decreased over time for the treatment group upon examination of within-subjects analysis. This was not the case for the comparison group.

In sum, the combination of these results strengthens the position that the workshop sessions had a positive effect upon students, reducing their tendency to procrastinate, according to their self-reports, as one student commented, "It was more of just having the opportunity to actually look at what I was doing and actually examine it, like you have the catalyst there to examine it closely that really helped."

Past evidence of significant academic procrastination treatment effects have been noted in the literature (e.g., Schubert Walker, in press) and, therefore, support the results of the present research. However, it could be argued that the change in procrastination scores was not clinically significant, based upon the on-going debate with respect to what constitutes meaningful change (see Jacobson & Revenstorf, 1988). It will be recalled that despite observed statistical significance, the question surrounding whether a treatment was truly effective may depend more upon other indicators of meaningful change; for example, a level of change that is recognizable among peers and significant others

(Kazdin, 1977; Wolf, 1978 as cited in Jacobson & Truax, 1991; Kendall & Grove, 1988). Other experts believe that the benchmark for meaningful change in participants is whether the treatment demonstrated a real effect in their daily lives or "...if the participants are better in any *practical* way for having participated in the program" (Posavac & Carey, 1992, p. 143). When asked if they perceived any difference in their procrastination, one student in the treatment group of the present research commented, "It's [procrastination] decreasing very, very slowly but it's still there." Similarly, another student remarked, "Um, not a big difference.... There's a shift but not a big, big shift just a little bit with the way I'm thinking." Therefore, it may be argued that although procrastination reduced significantly, statistically speaking, for the treatment group, it may not have necessarily been as significant from a clinical standpoint.

On the other hand, it may be premature to conclude that these feedback statements mentioned above suggest that the treatment may not have had a substantial impact upon reducing academic procrastination, clinically speaking, if it is considered that the statements may simply reflect the fact that: 1) modifying pre-existing irrational beliefs that sustain procrastination takes considerable time and poses an "intellectual challenge" to overcome for most individuals (Kuehlwein & Rosen, 1993, p.79); and 2) the length of treatment was too brief to expect these changes to occur quickly and to their fullest extent. Yet, despite these restrictions, it is plausible to conclude that the treatment did help to initiate some degree of cognitive change as reflected in the self-reported behavioral changes observed (i.e., the decrease in procrastination scores on both the PASS and APSI), as well as in the comments of one student who began to assume responsibility for his actions:

> ...you just have these knee-jerk reactions to things like in the middle of studying and then we'll have a thought and then all of a sudden we're not studying those things anymore. I think that was a big realization. So, like...before you'd just completely go off...like think about what you're doing.

Satisfaction With Life and Affect Scales

It was originally hypothesized that changes in subjective well-being would occur for students participating in treatment for their procrastination. The hypothesis was that over the course of treatment, satisfaction with life would improve, negative affect would decrease, and positive affect would increase as a result of a reduction in procrastination. Surprisingly, no significant findings resulted between-groups or within-subjects. It may be argued that this lack of significant change in SWB is conceivable given that some researchers have stated that "how one feels at the moment and also how happy one feels on average over time – are primarily a matter of chance" (Lykken & Tellegen, 1996, p. 189) and that the effects of events may "be transitory fluctuations about a stable temperamental set point or trait that is characteristic of the individual" (Myers & Diener, 1995 cited in Lykken & Tellegen, 1996, p. 189) rather than SWB per se. Moreover, the lack of change in SWB scales, resulting from this research, may be particularly relevant if one takes into account that both the SWLS and affect scales have been designed to measure global aspects of quality of life (e.g., Diener et al., 1985 and Pavot & Diener, 1993b) that are apt to change upon the recent occurrence of major life events (e.g., death of a loved one) (Diener, Suh, & Fujita, 1996). In this study, only the academic projects of

students were examined which is merely one aspect of their lives as a whole. Therefore, it would be justifiable to argue that these SWB measures may not have been sensitive enough to detect changes in student's well-being if these changes were solely related to academia, rather than major life events.

Furthermore, past research, which has tracked changes in SWB over time, have had longer periods of time between testing intervals (e.g., Diener, Suh, & Fujita, 1996). Therefore, it may be argued that perhaps these measures of SWB were not sensitive enough to detect *short-term* change. This is further supported by the previous reports of "temporal stability" on the part of the SWLS (Diener et al., 1985).

That said, some researchers have found SWB changes in the short-term. For example, Diener, Suh, and Fujita (1996) state "at least for a short period of time, recent life events do affect SWB beyond the influence of stable personality or baseline levels of SWB" (p. 1097). However, once again, the extent to which academic procrastination may be considered an important issue in a student's life, in general, remains in question and may help to explain the lack of significance over time for this variable.

Perhaps another explanation for why no changes in SWB were observed in the present research was due to the possibility that not all of the scales used formed comprehensive aspects of affect as they pertain to procrastination. This rationale is supported by McGregor & Little (1998) who contend that "conventional measures of subjective well-being miss important aspects of what it means to be psychologically well" (p. 505). For example, procrastinators often report high levels of anxiety and low frustration tolerance (Burka & Yuen, 1983; Knaus, 1998; Solomon & Rothblum, 1984), common emotional consequences to delaying or avoiding tasks. Yet, neither one of these

two constructs was measured extensively. Thus, it may have been beneficial to have included specific measures of the constructs most pertinent to procrastination and monitor their respective changes over time.

In short, despite the fact that some previous research has found significant changes in SWB using global measures, these outcome variables may not have been adequate in capturing specific constructs targeting the most relevant affective components for procrastinators which, in turn, may have been more suited to test the original hypotheses.

Research by Pychyl, Lee, Thibodeau and Blunt (2000) also offers an explanation as to why no significant change in either positive or negative affect was observed in the present study. Despite finding a significant correlation between negative affect and trait procrastination, the results of their research yielded no significant correlation between moment-to-moment procrastination and immediate positive or negative affect, as measured by using the experience-sampling method (see Csikszentmihalyi, Larson & Prescott, 1977). A lack of a significant decrease in negative affect was explained in terms of self-regulation to the extent that "procrastination has been identified as one means to regulate negative emotions that may accompany a task, at least in the short term" (Pychyl et al., 2000, p. 240). Therefore, given this fact, "...when students are procrastinating, they are not concurrently experiencing negative affect in terms of depression, anger, frustration, worry or unhappiness. On the contrary, they are doing something they see as pleasant" (Pychyl et al., 2000, p. 248). It would, therefore, seem reasonable to expect a significant increase in positive affect, as a result. However, this was not the case. When the students in their study were procrastinating they were also reporting significantly

higher levels of guilt and lower levels of motivation. Thus, it was concluded that "...as students' motivation decreases, their susceptibility to procrastination becomes greater which subsequently results in an accompanying increase in guilt" (Pychyl et al., 2000, p. 247). Hence, despite rating activities they were involved in while procrastinating as more pleasant than the activities they were avoiding, positive affect may have been offset by feelings of guilt for avoiding these activities in the first place.

The conclusions provided by the above research along with the previously mentioned limitations of the research using conventional measures of SWB, in general, provide further clarification as to why no significant increases in positive affect and decreases in negative affect occurred with respect to the treatment group of the present research.

Lastly, the issue of the follow-up (T4) testing period may provide another interpretation for the lack of significant change in SWB in the present research. During this time interval, students were in the middle of final examinations -- a critical time in the school year with respect to academic performance. Needless to say, students may have been feeling an increase in stress overall. As such, no increase in positive affect would be expected at this time period relative to the pre-test. On the other hand, some of these students had yet to write one exam at the time of testing, while other students were either halfway through or had finished all of their exams. In terms of affect, it would seem plausible to suggest that a mix of positive and negative emotions would result and, hence, not provide a coherent or consistent picture as to how the treatment was affecting students. In other words, the event of final exams may be considered a confounding variable to the extent that it interfered with the ability of both the satisfaction with life

scale (SWLS) and affect scales to reflect an accurate indication of students' SWB as a group.

Despite the absence of any *statistically* significant results with respect to SWB, a common theme found in the audio tape-recordings of participants' feedback revealed that students felt the workshop helped to decrease their feelings of isolation or aloneness in their procrastination and that helped them to feel better to some extent. This common reaction to the treatment is best illustrated by the comment of the following student:

> The group discussions I really liked because you could relate to everyone like I just thought I was the only one who procrastinated but seeing that it's a problem a lot of people have, I kind of feel normal.

In turn, this shared sentiment helped another student in terms of personal well-being:

> ...somehow it [the treatment] kind of gave me...made me feel a little better about myself knowing that there's other people that have the same problem that I do too.

Overall, despite the lack of any significant statistical findings with respect to satisfaction with life or positive and negative affect, the treatment appeared to help initiate some degree of behavioral change in terms of procrastination as well as some cognitive changes, albeit to a lesser extent. However, very little, if any, evidence of real affective change resulted.

Personal Projects as a Measure of SWB

It may be recalled that McGregor and Little (1998) adapted personal projects analysis (PPA) in order to examine the relationship between goal appraisals and SWB. Likewise, the present research used PPA as an outcome measure of SWB in order to determine the effectiveness of academic procrastination treatment. The results revealed no significant differences between groups across project factors (i.e., meaning, structure, community, efficacy and stress). This non-significant finding may have resulted from the possibility that not enough statistical power was available to detect a significant difference, given the small sample size in the present study.

With respect to within-subjects analysis for the treatment group only, it should be recalled that project structure, community and efficacy increased significantly upon comparing the project appraisals of participants after treatment relative to before treatment. Subsequently, the project dimensions associated with these factors were also found to be significant. These significant project dimensions included: time adequacy, control, other's view and outcome. At the end of treatment, the appraisals of all four project dimensions increased significantly. Given that two out of the four project dimensions, namely, time adequacy and control load onto the factor *structure*, the results would seem to indicate that treatment did more for improving project structure than it did for project community and project efficacy (as indicated by the remaining two project dimensions other's view and outcome, respectively). Evidence of perceived improvement in project structure may be found in the comments of the following workshop participant:

> ...[the workshop content presentations] gives you ideas of what you might try to do and if you get different ideas something might work for you, some things won't but at least you have different things to do and different things to try. So I liked that and I'd probably encourage a bit more of that and spending more time on these exercises here because I found it more powerful when I do them here because I focus on doing them.

Each of the project dimensions that demonstrated a significant change over treatment have interesting implications for understanding academic procrastination treatment, so each is considered separately in the following section of the discussion. In addition, despite its lack of significance, the dimension progress was included in this section due to its direct association with the concept of procrastination. Possible reasons as to why no significant change was observed in this variable, in the present research, are discussed.

Time adequacy. As presented in the Results section, the project dimension time adequacy was found to be significant for the treatment group, within-subjects analysis, only. There is supporting evidence in the literature (e.g., Pychyl, 1995; Pychyl & Little, 1998) of an existing negative correlation between time adequacy and procrastination. That is to say, the less adequate time one feels to have spent on a project, the greater the likelihood they would have procrastinated on that project. Similarly, in a study done by Lay (1990), it was found that for short-term projects (e.g., "write essay for my history class"), trait procrastination was negatively related to time adequacy.

The significant increase in time adequacy ratings for post-test scores relative to the pre-test suggests that the treatment may have helped students devote more adequate

amounts of time to their projects. Indirectly, this may be a result of reduced procrastination, on the whole, as seen in the PASS and APSI scores. Specific workshop content presented by the counsellor, namely, that the amount of time it takes to complete a given task is often at least *double* the predicted time may have also been a contributing factor. Additionally, participants were strongly encouraged to start early, work consistently and, not to wait until they felt "ready" (Boice, 1996). This last component is supported by Knaus (1998) who listed, "Focus yourself along an action pathway where you place your emphasis on your Do It Now! plan – even when you don't feel like it" (p. 202) as his sixth cognitive-behavioral self-regulation strategy for overcoming procrastination.

On the other hand, the significant difference in time adequacy ratings for the treatment group occurred between the pre-session (before treatment) and the follow-up (during examinations) only. This outcome once again implicates the confounding variable, namely, the follow-up (T4) testing period, as previously described. In this case, the extent to which time adequacy would have been relevant may have depended upon where along the continuum a student lies in terms of project progress. For instance, if students had already completed all of their coursework including examinations before testing, time adequacy would be irrelevant. Alternatively, if a student had been procrastinating at the time of the follow-up, then the amount of time she or he devoted to a project "at the last minute" may have been perceived as adequate under the circumstances.

Moreover, to the extent that time adequacy is considered to be an indirect measure of procrastination, students who report not having enough time to complete their projects

may be doing so because they are procrastinating, as illustrated in the comments by the following student:

> I have an Economics exam on Friday and I'm freaking out because I've got an exam tomorrow that I should be studying for but I want to study for my Economics because it's more important to me. But I need to study for my other exam because it's there. It's procrastination because I should have started studying last week.

However, the reverse may be true as Pychyl (1995) notes in his dissertation on doctoral students and their personal projects, "some students reported having more than adequate time, at least in the sense that they found time to procrastinate" (p. 72). This may have been the case for some of the treatment participants, as one student confided:

> I've got my procrastination down to a science where if I say it's going to take me hours to do an essay and to do a good job and to have it completely finished it'll take exactly eight hours. So long as I begin when I say I'm going to and keep at it, I'm realistic when it comes to that.

Although, in terms of the present study, it could be argued that given the significant decrease in procrastination scores for the treatment group, the likelihood of students' appraising the project dimension time adequacy, in this manner, diminishes. In the end, the discussion regarding the confounding variable (i.e., testing during the examination period) may provide the most likely explanation for why there was a significant increase in the treatment groups' perception that they had adequate time in which to complete their projects, at the time of the follow-up.

Control. Relative to the comparison group, it appeared that students who received treatment for their procrastination increased their sense of control over their projects. As one participant commented:

> When I came into the workshop I was feeling really out of control like...broken...now I feel like I have the tools and have an understanding of what's going on so I'm not completely at a loss...

This factor was the only PPA dimension to be significant at both post-testing intervals suggesting that perhaps treatment helped students organize their projects – a first step towards project completion. In their research, Blunt and Pychyl (2000) demonstrated a correlation between control and task aversiveness during Gollwitzer's (1990) Actional stage. This relationship is anticipated if it is considered that the actional stage includes striving towards goal completion through goal-directed behaviors, hence, as Blunt (1998) writes, "we might expect individuals to procrastinate to a greater extent on projects which are less structured and difficult to coordinate" (p.53). In fact, this negative correlation between control and procrastination was found by Szawlowski (1987). The results from his research seem to support this hypothesis, in that, as control increased, procrastination decreased. It should be noted, however, that this study did not determine whether control (or, rather, lack thereof) is a cause or an effect of procrastination. It also did not determine which variable changed as a direct result of treatment. It may have been that the treatment influenced project control which, in turn, helped to decrease procrastination. Or, it may have been that procrastination decreased, with the help of treatment, which increased the self-perception of control over one's projects. Hence, caution must be

exercised when making overall judgments about whether self-reported project control improved as a result of the treatment used in the present research.

Although the control dimension was found to increase over time, some students did not feel in control of their projects, which resulted in feelings of frustration and discontentment, as one student expressed about obtaining her degree:

> It seems like the steps aren't my goals, it's just the final goal. It's like all of this is just awful, what I have to go through, and it won't be until the final stage that it'll be like, "Now I have what I want." And the rest was just torture to go through it. It feels really separated from me because I don't have a lot of choices in what courses to take. There's so many restrictions and there's so many courses that I'd like to take in philosophy and religion...all different sorts of things and it's so limited. And it's frustrating because there's courses that you have to take that you shouldn't...I think I shouldn't have to take because I'll never use it and it's really to fulfill a requirement that someone else has made for me. It just doesn't make sense to me. I don't feel like I have a lot of control over my life at this point because of the courses I'm assigned to take.

In sum, the evidence presented above suggests that the academic procrastination treatment may have had a significant effect in terms of improving students' perception of control over their projects, thereby supporting the original hypothesis that overall project structure would increase by the end of treatment. After all, one of the main goals of the treatment used in the present research was to help participants manage their workload by using various strategies (e.g., breaking down large tasks into smaller steps) and

techniques (e.g., relaxation exercises), not to mention the attempts to restructure their maladaptive cognitive beliefs that sustained their procrastination.

Other's view. From the original hypotheses, it was expected that participation in the treatment would increase the overall sense of community in students given that group support fosters a considerable amount of disclosure amongst its participants. Therefore, it is understandable that the project dimension other's view would be appraised significantly higher for the treatment group relative to the comparison group. However, the fact that this significant difference did not occur immediately after treatment (T3) but rather during the follow-up (T4) is interesting and open to interpretation. It may be the case that participation in the treatment increased students' awareness of other's perceptions, in general, and this, coupled with the fact that exams are seen as perhaps more important academic projects, produced this result. In this instance, perhaps the self-selection for treatment may be an important difference between the groups. The students who sought out treatment recognized the need for help with their problems regarding procrastination and others in their lives may have influenced this as well. In any event, it is impossible to know exactly why this treatment group effect emerged at T4, and it may only be left to speculation at this point based upon an understanding of the PPA dimension other's view and research related to procrastination.

Outcome. This PPA project dimension was appraised significantly higher for the treatment group at the post-test (T3) relative to the pre-test (T1) only. By the end of treatment, students felt that they significantly improved their chances of successfully completing their academic projects, on average, than before the workshop began. This would suggest that the treatment may have had some effect on improving student's self-

efficacy -- the PPA factor comprised of project progress and outcome dimensions. Interestingly, Pychyl & Little (1998) found progress in doctoral student's projects to be positively correlated to time adequacy ($r = .05$, $p < .001$) and negatively correlated to procrastination ($r = -.037$, $p < .01$). However, in this same study, project outcome was not significantly correlated with progress for these students suggesting that perhaps expectation for success may still remain high despite procrastination on tasks or limited time in which to complete projects. The expectation of project success was also found to be positively associated to how much control doctoral students had with respect to their projects ($r = .33$, $p < .01$) (Pychyl & Little, 1998). These last two research findings relate specifically to the present research given that: 1) no significant increase in project progress was found (see the following section) despite the significant increase in project outcome at the end of treatment (T3) and; 2) the treatment group perceived themselves at having significantly more control over their projects after treatment had ended.

Similar to the time adequacy dimension, caution needs to be taken regarding the interpretation of project outcome ratings of the present research. It is important to take into consideration that T3 occurred near the end of the semester and that many students may have already completed or neared completion of many academic projects they had (with the exception of final examinations), thus, reflecting a possible positive account in the outcome rating. By the follow-up, no significant improvement between T1 and T4 was found suggesting that perhaps, by then, students were engaged in last-minute cramming and may have felt that they were not going to do well on their upcoming examinations. Alternatively, as previously discussed, a non-significant finding may have been a non-event depending upon what stage students were at in their schedules (e.g.,

they had no more examinations to write). Future research that would take this into account is needed to eliminate this confound.

Progress. It is interesting to consider that despite reporting sufficient time in which to complete their projects (i.e., time adequacy dimension), students' appraisals of their project progress did not change significantly over the course of the procrastination treatment. This result does not support the original hypothesis of anticipating an increase in progress ratings by the end of treatment. Previous research done by Pychyl (1995) found that "the progress [doctoral students] are currently making on their projects may be more related to having adequate blocks of time in which to engage in projects which they are passionate about and for which they have social support" (p. 185). The lack of significantly improved progress for students in this study is even more puzzling when one considers that procrastination decreased over time. In other words, as the project system suggests, students receiving treatment sense that they have enough time in which to complete their projects and feel that they are procrastinating less on tasks and, yet, no significant amount of perceived project progress has been made! One explanation may be due perhaps to the notion that, at the time of testing, the majority of these projects were finished, recently assigned, or just started. In other words, the particular stage (Little, 1983; Blunt & Pychyl, 2000) a project belonged to may be important to understanding progress scores overall. For example, post-testing (T3) may have coincided with many students submitting end-of-term assignments which, in turn, may have accounted for lower progress ratings as they begin the new projects of preparing for exams on which they have made little progress.

Alternatively, the lack of significant progress may lie in the very nature of the progress dimension itself. The standard PPA Project Appraisal Matrix asks respondents to rate "how successful you have been in a project so far". The use of the term "successful" may have been interpreted by students to be at the level of progress "quality" rather than the degree of completion. For instance, it may be the case that a student fails to produce a large quantity of work (the volume of work generated may be thought of as being directly proportional to finishing a particular task) and, yet, considers the quality of the work produced to be quite good. As a result, this may translate into a higher project progress rating. In contrast, it may be the case that quantity is high, but the end product may be so poor or trivial that it is not deemed to be a worthy marker of success. Hence, a student may assign a low progress rating despite meeting a deadline. One may further speculate that the latter project appraisal may be typical of the perfectionist. This personality characteristic is important when one considers that research has found a positive correlation between perfectionism and procrastination (Ferrari, 1995; Flett, Blankstein, Hewitt, & Koledin, 1992; Saddler, & Sacks, 1993).

Furthermore, with respect to academic life, several other speculations may be made. Firstly, it is important to bear in mind that academic pursuits are almost exclusively assigned by others (i.e., professors) and are often carried out in isolation. Hence, despite their importance, students may not find their academic projects particularly enjoyable or, to some extent, difficult. This may result in decreased project commitment (e.g., Brunstein, 1993; Pychyl, 1995; Pychyl & Little, 1998). Although it was not measured directly, this lack of project commitment may have had significant negative implications in relation to project progress. This cascade of events may be even

more pertinent to the procrastinating student who, for instance, may also be motivated by fear of negative project evaluation *not* to take necessary action to complete projects (or even start them!) in order to avoid criticism (Little, 1983). At any rate, either one of the above scenarios could have had an impact on progress ratings in such a manner as to fail to yield significant results.

Finally in terms of the PPA, the issue of project meaning in relation to project efficacy needs to be addressed because: 1) it was originally hypothesized that students would appraise their projects as more meaningful and; 2) even though project meaning was not found to increase significantly over the course of treatment, it may still be considered a potentially important marker of SWB (e.g., Little, 1986, 1989; McGregor & Little, 1998). The following section explores a possible rationale as to why project meaning was not found to significantly increase, as originally anticipated, as a result of treatment.

Based upon past literature, project efficacy has been a robust predictor of SWB (e.g., Little, 1989; Wilson, 1990; Yetim, 1993) to the extent that "people feel better when they are doing well and when they expect to be doing well in the future" (McGregor & Little, 1998, p. 505). In light of the results of the PPA from the present study, it would appear that SWB improved somewhat given that project outcome increased by the end of treatment. However, it would be premature to speculate that project efficacy is the only significant predictor of SWB. In fact, according to Little (1998) "...mere efficacy, in the absence of project meaning, is not likely to enhance well-being" (p. 207). And, it may be argued that this has implication with respect to the project systems of participants in this study because, "the least meaningful projects are clearly those related to academic tasks"

(Little, 1998, p. 200). This statement, in and of itself, along with the fact that students often find academic projects less enjoyable compared to other types of personal projects, only partially explains the absence of a significant increase in project meaning as a result of treatment.

In their study, McGregor and Little (1998) considered goal efficacy or "how likely one's project are to be successful" (p. 495) to be associated with happiness (satisfaction with life, more positive affect than negative affect – the traditional standards of SWB) and goal integrity or "how consistent one's projects are with core aspects of the self" (p. 495) to be associated with meaning (feelings of connectedness, purpose and growth). These authors claim that a certain "tension" may arise between efficacy and integrity to produce a "meaning and manageability tradeoff". For example, if the emphasis of project systems is on manageability (i.e., goal efficacy), people may feel happy because they are accomplishing and managing their goals, but it may also be that they are engaged in projects that are not particularly meaningful or what is referred to as "trivial pursuits" (Little, 1989). Additionally, this focus on action may be a way for people to avoid recognizing a lack of meaning in their project system as described in the following statement:

> ...immersing oneself in the busy pursuit of efficacy can at least distract one from the experience of meaninglessness. Perhaps this is why a discussion of meaning is so often met with sincere bewilderment. For busy people, it may seem like an irrelevant construct. (McGregor & Little, 1998, p.507)

Therefore, it is conceivable that for some individuals, efficacy may overshadow the construct of meaning with respect to SWB. This is particularly relevant for the

participants of the present research where the emphasis of academic procrastination treatment is on encouraging self-efficacy and manageability of projects rather than project meaning per se. Thus, it is conceivable that students' appraisals of project structure would significantly increase but that appraisals of project meaning would not.

Finally, the present research did not examine goal integrity as it was presented above. Although, the project dimension *self-identity* (i.e., one of the project dimensions that loads onto the factor *meaning*) was included in the Project Appraisal Matrix, many students commented to the researcher on the difficulty of relating such an abstract concept to their academic tasks. This is not uncommon, in fact, McGregor and Little (1998) cite this dimension as a limitation in their own research, "...it is unclear how accurately participants were able to rate projects, especially on some of the more abstract dimensions, such as self-identity" (p. 508). In addition, the project dimension *value congruency* (one of the original project dimensions of PPA; see Little, 1983) was omitted from the Project Appraisal Matrix because its relevance to academic pursuits was also questionable. Thus, to avoid confusing students who completed PPA, it was left out of the Project Appraisal Matrix. Perhaps if these issues were addressed and clarified in future research, a significant change in project meaning would be revealed and a clearer picture of the effects of treatment on SWB would be possible.

Limitations of the Research and Future Directions

There are four key shortcomings in the present research that need to be considered. These limitations in the study lead to a number of suggestions for future research in this area.

First and foremost, the most relevant limitation of this research was the sample size. Despite efforts made in recruiting students on a voluntary basis, only a handful of students ended up participating. This was due, in part, to the fact that the recruitment for the workshop itself was rather brief. This shortcoming may have severely hampered attempts to gain sufficient visibility of the existence of the workshop thereby reducing the chances of not only obtaining a larger sample, but also obtaining a more diverse group of students. In addition, it will be noted that the sample size was also limited by the fact that funding for only one treatment group was available. Furthermore, at the counsellor's request, the treatment group could not be larger than about 30 participants. Consequently, this limitation of sample size imposed serious restrictions upon the interpretability of the results by significantly reducing the amount of statistical power of the research design. However, through the usage of ANCOVA to control for individual differences at the outset, an attempt was made to preserve the statistical power in the design. Overall, given the lack of power, it is important to be cautious when interpreting the results, particularly non-significant trends in the PPA data.

Second, generalizations are limited due to the lack of randomization of participants or what Cook and Campbell (1979) consider a threat to external validity. A way to compensate for this limitation may have been to analyze the data of both: 1) students who dropped out after registering for the workshop and 2) students who made initial contact in response to the poster announcement, but then never actually registered to participate in the workshop. Data obtained from these groups of students could then be compared to those students who participated in the workshop. This is relevant if one considers that "what appears to be a successful program may only be successful with

some" (Posavac & Carey, 1992, p. 189). It should be noted that five students satisfied the first condition. When contacted by phone to find out why they decided to not participate, students mentioned that they had either school or job commitments that would interfere with their workshop attendance. One student dropped out of the university altogether to work full-time and commented, "Maybe that's why I procrastinated, because I really didn't want to be there." In the case of the second condition, by word of mouth, the experimenter often heard remarks by fellow students who said that they "would like to attend the workshop" but they were "too busy to fit it in right now." It would be sheer speculation at this point to wonder whether these students would have benefited more from the workshop than the actual treatment group did. Perhaps they would have exhibited significant SWB improvements over the course of treatment relative to the comparison groups. In other words, by their very nature, these students may have been different than the students who actually participated. Thus, it may have been beneficial if these students were asked to complete the questionnaire package despite not being able to attend the workshop, to help improve the external validity of the present research.

This lack of randomization also applies to the comparison groups. Although participants in these two groups were randomly assigned, the pool from which they were drawn may have lacked sufficient representativeness. It will be recalled that the entire comparison group sample was randomly selected from the Procrastination Research Group mass testing pool based upon scoring in the top 30% on a procrastination measure. However, it was originally intended that *all* participants in this research would have originated from the same source, in particular, by voluntarily coming forth in search of help for their procrastination. If enough students responded to the poster announcement

then this could have been a reality, random assignment would have been possible, and all participants could have been considered equivalent across groups. Unfortunately, this did not occur and is a common shortcoming in quasi-experimental designs (Cook & Campbell, 1979).

In addition, Cook and Campbell (1979) also warn of the difference between generalizing *to* a specific target population as opposed to *across* populations. In the case of the present research, these results may only apply to students in an academic setting, the target population of interest. In other words, these results do not necessarily reflect those of the average population, in general, outside of an academic setting.

Third, another limitation may be in the treatment design itself. Past research indicates that there is no single existing manner in which to treat procrastination. As of yet, no universal intervention has been developed that may be applied on a larger scale as is similar to the 12-step program used by Alcoholics Anonymous (AA), for example. However, within the context of the treatment used, several suggestions of how to improve upon the existing program were made by the participants themselves. These included: increasing the number and duration of sessions, more emphasis on making specific projects public to the group such that participants would have a greater sense of accountability towards meeting their goal, less redundant content information, and having the workshop commence earlier in the term so students could have enough time to apply what they learned over the course of the semester. The latter improvement is shared by Boice (1996) who suggests "that timely interventions should occur early...during the period when they can more easily set an efficacious course" (p.80).

Fourth, another limitation with respect to the sample in the present research pertained to the students themselves. Although the exact figures were not obtained in this study, several students (from both treatment and comparison groups) mentioned privately to the experimenter that they suffered from Attention Deficit and Hyperactivity Disorder (ADHD). This pre-existing condition may have been a contributing factor to student academic procrastination as individuals with ADHD often experience poor concentration or an inability to stay focused on the task at hand for long periods of time. In other words, procrastination may have been a symptom of having ADHD. Consequently, this aspect of individual variability is likely to have increased the amount of error variance overall and weakened the statistical power of the design.

These limitations in the present study, particularly the limitations related to the research design, lead to a number of suggestions for future research such as tracking specific projects, categorizing different types of projects, adding other PPA project dimensions, and including more objective measures pertinent to procrastination.

One improvement in the experimental design might include incorporating a method of "tracking" specific projects or groups of projects over the course of treatment. For instance, in one of his studies, Lay (1990) asked students to indicate a deadline for their projects, for example, within 2 months (i.e., short-term), beyond 2 months (i.e., long-term), or no specific deadline. He then tested students at three different time intervals asking them to rate each project, using a version of PPA, across various emotions. The results revealed a significant relationship between procrastination, short-term deadlines, and dejection. For example, relative to non-procrastinators, procrastinators reported higher levels of dejection with respect to short-term deadlines.

Therefore, given that many academic projects have a short-term deadline, a replication of Lay's methodology may be interesting to examine in the context of treatment.

In terms of project type, the notion of project categorization might be useful in providing further exploration of procrastination in relation to PPA and SWB. For instance, analyzing projects based upon their classification with respect to molarity (e.g., Little, 1983, 1988, 1989) (e.g., "write my English essay" versus "get into graduate school") as well as content (e.g., reading projects, writing projects, group projects) may be worth exploring in the future. In the research done by Elliot, Sheldon and Church (1997), two dichotomous categories referred to as *avoidance goals* (e.g., "avoid procrastination") and *approach goals* (e.g., "be more conscientious and efficient") were created from the lists of personal strivings students provided during testing. The results revealed that students with a greater proportion of avoidance goals reported lower global SWB over the course of the semester. Through path analyses, perceived progress was found to be a mediator between avoidance regulation and SWB as the authors explain:

> ...the pursuit of avoidance goals would lead to low perceptions of progress and that low perceived progress, in turn, would be negatively associated with SWB....the focus on negative possibilities inherent in the pursuit of avoidance goals is likely to induce worry, threat, anxiety, and research has clearly shown that such states undermine the process of self-regulation. (p. 916)

Further, those students who reported fewer self-regulatory skills were found to have a greater number of avoidance projects. A negative correlation between avoidance goals and expected progress was also found ($r = -.19$, $p < .05$) suggesting that the more avoidance goals students had, the more students expected to do poorly on their goals.

Taken together, these results help to support the notion that much may be gained from the future analyses of various categories of personal projects. It also provides an alternative way of determining the change in SWB relative to personal projects in the context of procrastination.

Future research might also benefit greatly by expanding upon the PPA project dimensions which are by no means comprehensive and may "not capture all of the elements that underlie global appraisals of...[project] systems" (Pychyl & Little, 1998, p. 452). Possible dimension additions may include dejection, anxiety, and commitment, to name a few. From his research, Lay (1990) found a repeated link between dejection and trait procrastination. Dejection-related emotions consisted of: exhilarated, hopeful, happy, sad, disappointed, and disgusted. Lay concluded that dejection be treated as an outcome variable in future research. Thus, it would be appropriate to include this construct as an added dimension to PPA, or perhaps even in the affect scales of SWB. Likewise, the construct *anxiety* may be relevant, given that relaxation techniques were a part of treatment, and may be included as either an added dimension of PPA, an extra item in the negative affect scale, or even as a separate scale altogether. The inclusion of commitment, as another ad hoc dimension, may be another good choice as it is supported by previous research by Pychyl (1995) who concluded that the likelihood of success, with any given project, may depend more upon a student's personal sense of commitment to that project. Furthermore, "in terms of academic life at least, this seems to be an important element in a student's sense of well-being" (p. 105). The comment from one workshop participant, from the present research, emphasizes this issue:

> I think just actually going to [the workshop], I mean I know I didn't make it to all of them but just still following through with it, it was kind of a way of like reaffirming that I'm committed to trying to stop procrastination even though I'm still procrastinating.

These ad hoc dimensions, along with others, may serve to capture significant changes within workshop participants, over time, which may not be revealed through typical SWB measures alone.

Finally, future research examining the effectiveness of procrastination treatment should include objective dependent variables, as opposed to self-reports, exclusively, as part of the testing procedure. For instance, others' ratings of the individual's procrastination might be used. Additionally, the number of projects that fail to be completed or are submitted past their due date, over the course of the semester, could be tallied as another objective measure of procrastination.

Conclusions

In summary, the academic procrastination treatment appeared to be moderately successful at reducing academic procrastination in the participants, based upon the self-reported scores for several procrastination measures (i.e., PASS, APSI, project dimension procrastination). This was the main purpose of the present research and provided evidence in support of the original hypotheses. However, contrary to original predictions, the expected changes in SWB were not observed. Similarly, no between-group differences resulted for any of the PPA project factors. However, within-subjects analysis of the treatment group yielded significant increases in students' appraisals of project

control, time adequacy, outcome and others' view suggesting that treatment for academic procrastination helped to improve the project systems of students by increasing their perceptions of project structure, efficacy and community. However, the interpretation of these results warrants caution given the limitations of the overall research design, for example, the small sample size. Therefore, future replication of this study would be beneficial along with the recommendations of tracking and categorizing various types of academic projects, adding other PPA project dimensions, and including more objective measures of procrastination. These suggestions would help provide further evidence of the efficacy of this treatment program as well as extend the outcome research, in general, with respect to academic procrastination treatment.

Endnotes

[1]A second comparison group not receiving PPA or treatment was included in the design of the present research to determine whether PPA had some form of clinical impact upon students. The possibility that PPA could prove to be therapeutic originated from Little (1986) who stated that PPA, "...allows the therapist/counsellor to unpack the dimension into those particular projects and pursuits which generated the client's interuality score, a tactic which may well have therapeutic or interventional significance" (p. 602). Further, Little adds that the project dimensions, "...map on well to recurring issues in clinical and counselling psychology [adding] further impetus to treating these as having potential relevance to diagnostic and therapeutic activities" (p. 607). It was, therefore, conceivable that by engaging students and helping them to monitor, be aware of, and identify their feelings about their academic projects, PPA may have had an impact upon students, clinically, to some degree. Hence, this may be considered similar to receiving treatment to some extent. Consequently, in light of the potential for this prediction to occur, PPA was considered to have an effect therapeutically if no significant differences occurred between the treatment group and the first comparison group, and significant differences occurred between the first and second comparison group, in terms of SWB.

References

Aitken, M. (1982). *A personality profile of the college student procrastinator.* Unpublished doctoral dissertation, University of Pittsburgh.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Barlow, D.H. (1981). On the relation of clinical research to clinical practice: Current issues, new directions. *Journal of Consulting and Clinical Psychology, 49*, 147-155.

Baumeister, R.F., Heatherton, T.F., & Tice, D.M. (1994). *Losing control: How and why people fail at self-regulation.* San Diego: Academic Press.

Beck, A.T. (1976). *Cognitive therapy and the emotional disorders.* Madison, CT: International Universities Press.

Birner, L. (1993). Procrastination: Its role in transference and countertransference. *Psychoanalytic Review, 80*, 541-558.

Blunt, A. (1998). *Task aversiveness and procrastination: A multi-dimensional approach to task aversiveness across stages of personal projects.* Unpublished master's thesis, Carleton University, Ottawa, Ontario, Canada.

Blunt, A., & Pychyl, T.A. (2000). Task aversiveness and procrastination: A multi-dimensional approach to task aversiveness across stages of personal projects. *Personality and Individual Differences, 28*, 153-167.

Boice, R. (1996). *Procastination and Blocking: A novel, practical approach.* Praeger: Westport. CT.

Brunstein, J.C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology, 65*, 1061-1070.

Burka, J.B., & Yuen, L.M. (1983). *Procrastination: Why you do it. What to do about it.* Massachusetts: Perseus Books.

Campbell, D.T. (1957). Factors relevant to the validity of experiments in social settings. *Psychological Bulletin , 54*, 297-312.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation: Design & analysis issues for field settings*. Chicago: Rand McNally.

Csikszentmihalyi, M., Larson, R.J., & Prescott, S. (1977). The ecology of adolescent activity and experience. *Journal of Youth and Adolescence, 6*, 281-294.

Delicate, M. (1998, June). *Overcoming academic procrastination*. Presentation for the annual conference of the Canadian Association of College and University Student Services (CACUSS), Ottawa, Ontario.

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*, 1105-1117.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.

Diener, E., Suh, E., & Fujita, F. (1996). Events and subjective well-being: Only recent events matter. *Journal of Personality and Social Psychology, 70*, 1091-1102.

Dunn, S., Putallaz, M., Sheppard, B., & Lindstrom, R. (1987). Social support and adjustment in gifted adolescents. *Journal of Educational Psychology, 79*, 467-473.

Elliot, A.J., Sheldon, K.M., & Church, M.A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin, 23*, 915-927.

Ellis, A. (1962). *Reason and emotion in psychotherapy.* New York: Lyle Stuart.

Ellis, A. (1980). Rational-emotive therapy and cognitive behavior therapy: Similarities and differences. *Cognitive Therapy and Research, 4*, 325-340.

Ellis, A. (1985). Expanding the ABC's of rational-emotive therapy. In M. Mahoney & A. Freeman (Eds.), *Cognition and psychotherapy* (pp. 313-323). New York: Plenum.

Ellis, A. (1991). The revised ABC's of rational-emotive therapy (RET). *Journal of Rational-emotive & Cognitive-Behavior Therapy, 9*, 139-172.

Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination.* New York: Institute for Rational Living.

Emmons, R.A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51*, 1058-1068.

Emmons, R.A. (1991). Personal strivings, daily life events, and psychological and physical well-being. *Journal of Personality, 59*, 453-472.

Ferrari, J.R. (1991a). A preference for a favorable public impression by procrastinators: Selecting among cognitive and social tasks. *Personality and Individual Differences, 12*, 1233-1237.

Ferrari, J.R. (1991b). Self-handicapping by procrastinators: Protecting self-esteem, social-esteem, or both? *Journal of Research in Personality, 25*, 245-261.

Ferrari, J.R. (1992). Psychometric validation of two procrastination inventories for adults: Arousal and avoidance measures. *Journal of Psychopathology and Behavioral Assessment, 14*, 97-110.

Ferrari, J. R. (1995). Perfectionism cognitions with nonclinical and clinical samples. *Journal of Social Behavior and Personality, 10*, 143-156.

Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). *Procrastination and task avoidance: Theory, research and treatment.* New York: Plenum Press.

Ferrari, J.R., & Pychyl, T.A. (Eds.). (2000). Procrastination: Current issues and new directions [Special issue]. *Journal of Social Behavior and Personality, 15* (5).

Flett, G. L., Blankstein, K. R., Hewitt, P. L., & Koledin, S. (1992). Components of perfectionism and procrastination in college students. *Social Behavior and Personality, 20,* 85-94.

Garfield, S.L. (1981). Evaluating the psychotherapies. *Behavior Therapy, 12*, 295-307.

Gollwitzer, P.M. (1990). Action phases and mind-sets. In E.T. Higgins & R.M. Sorrentino (Eds.), *Handbook of motivation and cognition: Vol. 2. Foundations of social behaviour* (pp. 53-92). New York: Guilford Press.

Harris, N.N., & Sutton, R.I. (1983). Task procrastination in organizations: A framework for research. *Human Relations, 36*, 987-996.

Jacobson, N.S., Follette, W.C., & Revenstorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy, 15*, 336-352.

Jacobson, N.S., & Revenstorf, D. (1988). Statistics for assessing the clinical significance of psychotherapy techniques: Issues, problems, and new developments. *Behavioral Assessment, 10*, 133-145.

Jacobson, N., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting & Clinical Psychology, 59*, 12-19.

Jason, L.A., & Burrows, B. (1983). Transition training for high school seniors. *Cognitive Therapy and Research, 7*, 79-92.

Jourard, S.M. (1971). *The transparent self* (2nd ed.). Princeton, NJ: Van Nostrand.

Kazdin, A.E. (1977). Assessing the clinical or applied importance of behavior change through social validation. *Behavior Modification, 1*, 427-452.

Kendall, P.C., & Grove, W.M. (1988). Normative comparisons in therapy outcome. *Behavioral Assessment, 10*, 147-158.

Kendall, P.C., & Norton-Ford, J.D. (1982). Therapy outcome research methods. In P.C. Kendall & J.N. Butcher (Eds.), *Handbook of research methods in clinical psychology* (pp. 429-460). New York: Wiley.

Keppel, G. (1991). *Design and analysis: A researcher's handbook* (3rd ed.) New Jersey: Prentice-Hall Inc.

Knaus, W. J. (1998). *Do it now!* USA: John Wiley & Sons, Inc.

Kuehlwein, K.T., & Rosen, H. (Eds.). (1993). *Cognitive therapies in action: Evolving innovative practice*. San Fransico: Jossey-Bass Inc.

Lay, C. (1986). At last, my research article on procrastination. *Journal of Research in Personality, 20*, 474-495.

Lay, C. (1990). Working to schedule on personal projects: An assessment of person-project characteristics and trait procrastination. *Journal of Social Behavior and Personality, 5*, 91-103.

Lay, C.H., Knish, S., & Zanatta, R. (1992). Self-handicappers and procrastinators: A comparison of their practice behavior prior to an evaluation. *Journal of Research in Personality, 26*, 242-257.

Little, B. R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behavior, 15*, 273-309.

Little, B. R. (1986). Personal projects analysis: A new methodology for counselling psychology. *NATCON, 13*, 591-614.

Little, B.R. (1988). *Personal projects research: Method, theory and research.* Final Report to Social Sciences and Humanities Research Council of Canada (SSHRC), Ottawa, Canada.

Little, B. R. (1989). Personal projects analysis: Trivial pursuits, magnificent obsessions and the search for coherence. In D.M. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions* (pp. 15-31). New York: Springer-Verlag.

Little. B.R. (1998). Personal project pursuit: Dimensions and dynamics of personal meaning. In P.T.P. Wong & P.S. Fry (Eds.), *The human quest for meaning: A handbook for research and clinical applications.* (pp. 193-212). Mahwah, NJ: Erlbaum.

Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science, 7*, 186-189.

McCown, W., & Roberts, R. (1994). A studies of academic and work-related dysfunctioning relevant to the college version of an indirect measure of impulsive behavior. *Integra Technical Paper 94-28*, Radnor, PA: Integra, Inc.

McGregor, I., & Little, B.R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology, 74*, 492-512.

Milgram, N. (1991). Procrastination. In R. Dulbecco (Ed.), *Encyclopedia of human biology* (pp. 149-155). New York: Academic Press.

Muraven, M., & Baumeister, R.F. (in press). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin.*

Muraven, M., Baumeister, R.F., & Tice, D.M. (1999). Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. *Journal of Social Psychology, 139*, 446-457.

Myers, D.G., & Diener, E. (1995). Who is happy? *Psychological Science, 6*, 10-19.

Nietzel, M.T., & Trull, T.J. (1988). Meta-analytic approaches to social comparisons: A method for measuring clinical significance. *Behavioral Assessment, 10*, 146-159.

Omodei, M.M., & Wearing, A.J. (1990). Need satisfaction and involvement in personal projects: Towards an integrative model of subjective well-being. *Journal of Personality and Social Psychology, 59*, 762-769.

Palys, T. S., & Little, B. R. (1983). Perceived life satisfaction and the organization of the personal project systems. *Journal of Personality and Social Psychology, 44*, 1221-1230.

Pavot, W., & Diener, E. (1993a). The affective and cognitive context of self-reported measures of subjective well-being. *Social Indicators Research, 28*, 1-20.

Pavot, W., & Diener, E. (1993b). Review of the satisfaction with life scale. *Psychological Assessment, 5*, 164-172.

Posavac, E.J., & Carey, R.G. (1992). *Progam evaluation: Methods and case studies* (4th ed.) New Jersey: Prentice Hall.

Pychyl, T. A. (1995). *Personal projects, subjective well-being and the lives of doctoral students.* Unpublished doctoral dissertation, Carleton University, Ottawa, Ontario, Canada.

Pychyl, T. A., Lee, J., Thibodeau, R., & Blunt, A. (2000). Five days of emotions: An experience sampling study of undergraduate student procrastination. *Journal of Social Behavior and Personality, 15*, 239-254.

Pychyl, T.A., & Little, B.R. (1998). Dimensional specificity in the prediction of subjective well-being: Personal projects in pursuit of the PhD. *Social Indicators Research, 45*, 423-473.

Pychyl, T.A., Morin, R.W., & Salmon, B.R. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality, 15*, 135-150.

Rothblum, E.D. (1990). Fear of failure: The psychodynamic, need achievement, fear of success, and procrastination models. In H. Leitenberg (Ed.), *Handbook of social and evaluation anxiety* (pp. 497-537). New York: Plenum.

Rothblum, E.D., Solomon, L.J., & Murakami, J. (1986). Affective, cognitive, and behavioural differences between high and low procrastinators. *Journal of Counseling Psychology, 33*, 387-394.

Saddler, C. D., & Sacks, L. A. (1993). Multidimensional perfectionism and academic procrastination: Relationships with depression in university students. *Psychological Reports, 73*, 863-871.

Schouwenburg, H.C. (1992). Procrastinators and fear of failure: An exploration of reasons for procrastination. *European Journal of Personality, 6*, 225-236.

Schubert Walker, L.J. (in press). Overcoming the powerlessness of procrastination. *Canadian Journal of Guidance and Counselling*.

Semb, G., Glick, D.M., & Spencer, R.E. (1979). Student withdrawals and delayed work patterns in self-paced psychology courses. *Teaching of Psychology, 6*, 23-25.

Senécal, C., Koestner, R., & Vallerand, R.J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619.

Senécal, C., Koestner, R., & Vallerand, R.J. (1997). Trait and situational factors in procrastination: An interactional model. *Journal of Social Behavior and Personality, 12*, 889-903.

Silver, M. (1974). Procrastination. *Centerpoint, 1*, 49-54.

Silver, M., & Sabini, J. (1981). Procrastinating. *Journal for the Theory of Social Behaviour, 11*, 207-221.

Silver, M., & Sabini, J. (1982, January). When it's not really procrastinating, *Psychology Today,* 39-42.

Smith, M.L., Glass, G.V., & Miller, T. (1980). *The benefits of psychotherapy*. Baltimore: Johns Hopkins University Press.

Solomon, L. J., & Rothblum, E.D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology, 31*, 503-509.

Solomon, L. J., & Rothblum, E.D. (1988). Procrastination Assessment Scale - Students. In M. Hersen & A.S. Bellack (Eds.), *Dictionary of behavioral assessment techniques* (pp. 358-360). New York: Pergammon Press.

Solomon, L.J., & Rothblum, E.D. (1994). Procrastination Assessment Scale – Students (PASS). In J. Fischer & K. Corcoran (Eds.), *Measures for clinical practice* (pp. 446-452). New York: The Free Press.

Steinberg, L.D. (1993). *Adolescence* (3rd ed.). USA: McGraw-Hill.

Szawlowski, S. (1987). *Procrastination from a project analytic perspective.* Unpublished bachelor's thesis, Carleton University, Ottawa, Ontario, Canada.

Tice, D.M., & Baumeister, R.F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science, 8*, 454-458.

Wilson, D.A. (1990). *Personal project dimensions and perceived life-satisfaction: A quantitative synthesis.* Unpublished master's thesis, Carleton University, Ottawa, Ontario, Canada.

Wolf, M.M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-214.

Yetmin, U. (1993). Life satisfaction: A study based on the organization of personal projects. *Social Indicators Research, 29*, 277-289.

(Note: Appendices were photo-reduced to accommodate binding.)

Appendix A1

Informed Consent Form for Treatment Group

Informed Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement, in order to determine whether you wish to participate in the study.

Present Study: **Academic Procrastination Workshop**

Research Personnel: The following people are involved in this research project and may be contacted at any time: Kelly Binder (Principle Investigator, 520-2600 ext. 2705), Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Purpose: The purpose of this study is to investigate the academic procrastination behavior of students attending an academic procrastination workshop over the course of the semester. No credit will be offered for participation in this study.

Workshop: You will be asked to attend **six** group sessions (one per week). Each session will last two hours. The workshop will help you understand your behavior and offer strategies to overcome your procrastination. Some between-session "assignments" will be given to you throughout the workshop. Follow-up phone calls may be made to you regarding your progress.

Task Requirements: You will be asked to complete several questionnaires at **four** different times throughout the semester. The questionnaires will include questions asking you about how you feel and how you manage your time. The questionnaires will take 2 hours or less to complete each time.

Potential Risk/Discomfort: There are no known risks or discomforts in this study.

Anonymity/Confidentiality: The data collected in this study are confidential. All data are coded such that your name is not associated with the data. Any data reported will be based on group data, or by code number and will only be made available to the researchers associated with this project. Personal disclosure(s) shared within the group by group members must be kept exclusively within the group.

Right to Withdraw: Participation in this study is strictly voluntary. If, for any reason, you wish to withdraw from the study and the workshop, you have the right to do so at any time without academic penalty.

I have read the above description of the **Academic Procrastination Workshop** study and understand the conditions of my participation. My signature indicates that I agree to participate in the study.

Participant's Name (please print)	Researcher's Name
Participant's Signature	Researcher's Signature
Date	

Appendix A2

Informed Consent Form for Comparison Group 1 (with PPA)

Informed Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement, in order to determine whether you wish to participate in the study.

Present Study: Academic Procrastination

Research Personnel: The following people are involved in this research project and may be contacted at any time: Kelly Binder (Principle Investigator, 520-2600 ext. 2705), Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Purpose: The purpose of this study is to investigate the academic procrastination behavior of students over the course of the semester. Your scores on several questionnaires will be compared to the scores of other students participating in an academic procrastination workshop.

Task Requirements: You will be asked to complete several questionnaires at **four** different times throughout the semester. The questionnaires will include questions asking you about how you feel and how you manage your time. The questionnaires will take 2 hours or less to complete each time. Credit(s) may be received for participating in the study depending upon how many credits you have already.

Potential Risk/Discomfort: There are no known risks or discomforts in this study.

Anonymity/Confidentiality: The data collected in this study are confidential. All data are coded such that your name is not associated with the data. Any data reported will be based on group data, or by code number and will only be made available to the researchers associated with this project.

Right to Withdraw: Participation in this study is strictly voluntary. If, for any reason, you wish to withdraw from the study, you have the right to do so at any time without academic penalty.

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

Participant's Name (please print)	Researcher's Name
Participant's Signature	Researcher's Signature
Date	

Appendix A3

Informed Consent Form for Comparison Group 2 (without PPA)

Informed Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement, in order to determine whether you wish to participate in the study.

Present Study: **Academic Procrastination**

Research Personnel: The following people are involved in this research project and may be contacted at any time: Kelly Binder (Principle Investigator, 520-2600 ext. 2705), Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Purpose: The purpose of this study is to investigate the academic procrastination behavior of students over the course of the semester. Your scores on several questionnaires will be compared to the scores of other students participating in an academic procrastination workshop.

Task Requirements: You will be asked to complete several questionnaires at **three** different times throughout the semester. The questionnaires will include questions asking you about how you feel and how you manage your time. The questionnaires will take about 2 hours or less to complete each time. Credit(s) may be received for participating in the study depending upon how many credits you have already.

Potential Risk/Discomfort: There are no known risks or discomforts in this study.

Anonymity/Confidentiality: The data collected in this study are confidential. All data are coded such that your name is not associated with the data. Any data reported will be based on group data, or by code number and will only be made available to the researchers associated with this project.

Right to Withdraw: Participation in this study is strictly voluntary. If, for any reason, you wish to withdraw from the study, you have the right to do so at any time without academic penalty.

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

Participant's Name (please print)	Researcher's Name
Participant's Signature	Researcher's Signature
Date	

Appendix B1

Debriefing Summary for Treatment Group

DEBRIEFING

The purpose of this study was to examine how effective an academic procrastination workshop was on decreasing the tendency for students to procrastinate on university-related tasks (e.g., studying for an exam). Questionnaires were given to you before and after the workshop to see whether there was an improvement in your procrastination. In other words, by participating in the workshop, it was expected that you would procrastinate less.

Generally, people procrastinate for a variety of reasons. For instance, the task may be unpleasant so it is avoided. Another reason someone may procrastinate may be because they are afraid they will not be able to complete the task successfully. This is known as "fear of failure". On the other hand, sometimes people may delay doing something (e.g., write a term paper) because they are worried that if they do well (e.g., get a good mark) they will have to do just as well or even better the next time.

As a result, procrastination often creates feelings of subjective discomfort. In order to measure these feelings, a subjective well-being scale was also included in the questionnaire. The same scale was given to you at two different times. These two times were before and after the workshop. If your scores on the scale *before* the workshop are different from your scores on the scale *after* the workshop it may mean two things: 1) there was a change in your well-being over time, or 2) the change in your well-being was due to the workshop. In general, it is hoped that the workshop helped you to feel better. Therefore, it is expected that your subjective well-being scores will be higher at the end of the workshop than before the workshop.

Procrastination has also been found to be related to depression and anxiety. Therefore, you were asked questions about how you felt so that your depression and anxiety levels would be obtained. This information will help me to rule out other factors that may affect the results of this study.

In addition, you were asked to write down your academic "projects" and rate them on various aspects, for example, how difficult or enjoyable you found these tasks to be. This information was gathered at several different times throughout the semester in order to provide me with a means of tracking your on-going academic progress. In other words, it gives me a record of which projects were carried out by you and how you felt about your projects. In previous research, a relationship has been found between project progress and well-being. That is to say, people who make progress or complete their projects are usually happier than people who do not.

Finally, I do wish to stress that your individual scores/data will be kept strictly confidential. Any data reported will be based on group data or code number to ensure anonymity.

Thank you for your participation in this research. Your time and efforts were greatly appreciated. If, for any reason, this experiment has raised issues of a personal nature for you please contact your family doctor, Health Services (520-6674), or phone the Ottawa Distress Centre at 238-3311.

If you wish to discuss any additional aspects of this research the following people are available for appointments: Kelly Binder (Principle Investigator, 520-2600 ext. 2705) and Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Appendix B2

Debriefing Summary for Comparison Group 1 (with PPA)

DEBRIEFING

The purpose of this study was to examine how your scores on several questionnaires will compare to students involved in an academic procrastination workshop. Specifically, I am interested in knowing how effective this workshop was on decreasing the tendency for students to procrastinate on university-related tasks (e.g., studying for an exam). Questionnaires were given to you at different intervals to see whether there was any change in your tendency to procrastination.

Generally, people procrastinate for a variety of reasons. For instance, the task may be unpleasant so it is avoided. Another reason someone may procrastinate may be because they are afraid they will not be able to complete the task successfully. This is known as "fear of failure". On the other hand, sometimes people may delay doing something (e.g., write a term paper) because they are worried that if they do well (e.g., get a good mark) they will have to do just as well or even better the next time.

As a result, procrastination often creates feelings of subjective discomfort. In order to measure these feelings, a subjective well-being scale was included in the questionnaire. The same scale was given at different intervals to see whether there was any change in your feelings over time.

Procrastination has also been found to be related to depression and anxiety. Therefore, you were asked questions about how you felt so that your depression and anxiety levels would be obtained. This information will help me to rule out other factors that may affect the results of this study.

You were also asked to write down your academic "projects" and rate them on various aspects; for example, how difficult or enjoyable you found them to be. Since this information was gathered at several different times throughout the semester, it was a way of tracking your on-going academic progress. It also provided a record of what projects were carried out and how you felt about their projects. In previous research, a relationship has been found between project progress and well-being. That is to say, people who make progress or complete their projects are usually happier than people who do not.

Finally, I do wish to stress that your individual scores/data will be kept strictly confidential. Any data reported will be based on group data or code number to ensure anonymity.

Thank you for your participation in this research. Your time and efforts were greatly appreciated. If you feel that you need help regarding your procrastination you may contact the Student Life Center (520-6600), or Health Services (520-6674). If, for any reason, this experiment has raised issues of a personal nature for you please contact your family doctor, Health Services (520-6674), or phone the Ottawa Distress Centre at 238-3311.

If you wish to discuss any additional aspects of this research the following people are available for appointments: Kelly Binder (Principle Investigator, 520-2600 ext. 2705) and Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Appendix B3

Debriefing Summary for Comparison Group 2 (without PPA)

DEBRIEFING

The purpose of this study was to examine how your scores on several questionnaires will compare to students involved in an academic procrastination workshop. Specifically, I am interested in knowing how effective this workshop was on decreasing the tendency for students to procrastinate on university-related tasks (e.g., studying for an exam). Questionnaires were given to you at different intervals to see whether there was any change in your tendency to procrastination over the course of the semester.

Generally, people procrastinate for a variety of reasons. For instance, the task may be unpleasant so it is avoided. Another reason someone may procrastinate may be because they are afraid they will not be able to complete the task successfully. This is known as "fear of failure". On the other hand, sometimes people may delay doing something (e.g., write a term paper) because they are worried that if they do well (e.g., get a good mark) they will have to do just as well or even better the next time.

As a result, procrastination often creates feelings of subjective discomfort. In order to measure these feelings, a subjective well-being scale was included in the questionnaire. The same scale was given to you at different intervals to see whether there was any change in your feelings over time.

Procrastination has also been found to be related to depression and anxiety. Therefore, you were asked questions about how you felt so that your depression and anxiety levels would be obtained. This information will help me to rule out other factors that may affect the results of this study.

Finally, I do wish to stress that your individual scores/data will be kept strictly confidential. Any data reported will be based on group data or code number to ensure anonymity.

Thank you for your participation in this research. Your time and efforts were greatly appreciated. If you feel that you need help regarding your procrastination you may contact the Student Life Center (520-6600), or Health Services (520-6674). If, for any reason, this experiment has raised issues of a personal nature for you please contact your family doctor, Health Services (520-6674), or phone the Ottawa Distress Centre at 238-3311.

If you wish to discuss any additional aspects of this research the following people are available for appointments: Kelly Binder (Principle Investigator, 520-2600 ext. 2705) and Dr. T. Pychyl (Faculty Sponsor, 520-2600, ext. 1403). If you have ethical questions/concerns about this study please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 520-2600 ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 520-2600, ext. 2648).

Appendix C

Procrastination Assessment Scale-Students (PASS)

PART I

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on and "a" to "e" scale below according to how often you wait until the last minute to do the activity. Then, indicate on an "a" to "e" scale the degree to which you feel procrastination on that task is a problem. Finally, indicate on an "a" to "e" scale the degree to which you would like to decrease your tendency to procrastinate on each task. Mark your answers by circling the appropriate letter below each question.

I. *Writing a Term Paper*

1. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

2. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

3. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

II. *Studying for Exams*

4. To what degree do you procrastinate on this task?

Never procrastinate				Always procrastinate
a	b	c	d	e

5. To what degree is procrastination on this task a problem for you?

Not at all a problem				Always a problem
a	b	c	d	e

6. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease				Definitely want to decrease
		Somewhat		
a	b	c	d	e

III. *Keeping up Weekly Reading Assignments*

7. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

8. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

9. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

IV. *Academic Administrative Tasks: Filling Out Forms, Registering for Classes, Getting ID Card, etc.*

10. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

11. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

12. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

V. *Attendance Tasks: Meeting with Your Advisor, Making an Appointment with a Professor, etc.*

13. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

14. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

15. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

VI. *School Activities in General*

16. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

17. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

18. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

Think of the last time the following situation occurred:

It's near the end of the semester. The term paper you were assigned at the beginning of the semester is due very soon. You have not begun work on this paper. There are reasons why you have been procrastinating on this task.

Rate each of the following reasons on a 5-point scale according to how much it reflects why you procrastinated at the time. Mark your answers by writing the letter "a" to "e" in the space to the left of each statement.

Use the scale:

Not at all reflects why I procrastinated		Somewhat reflects		Definitely reflects why I procrastinated
a	b	c	d	e

_____ 1. You were concerned the professor wouldn't like your work.

_____ 2. You had a hard time knowing what to include and what not to include in your paper.

_____ 3. You waited until a classmate did his/hers, so that he/she could give you some advice.

_____ 4. You had too many other things to do.

_____ 5. There's some information you needed to ask the professor, but you felt uncomfortable approaching him/her.

_____ 6. You were worried you would get a bad grade.

_____ 7. You resented having to do things assigned by others.

_____ 8. You didn't think you knew enough to write the paper.

_____ 9. You really disliked writing term papers.

_____ 10. You felt overwhelmed by the task.

_____ 11. You had difficulty requesting information from other people.

Not at all reflects why I procrastinated		Somewhat reflects		Definitely reflects why I procrastinated
a	b	c	d	e

_____ 12. You looked forward to the excitement of doing this task at the last minute.

_____ 13. You couldn't choose among all the topics.

_____ 14. You were concerned that if you did well, your classmates would resent you.

_____ 15. You didn't trust yourself to do a good job.

_____ 16. You didn't have enough energy to begin the task.

_____ 17. You felt it just takes too long to write a term paper.

_____ 18. You liked the challenge of waiting until the deadline.

_____ 19. You knew that your classmates hadn't started the paper either.

_____ 20. You resented people setting deadlines for you.

_____ 21. You were concerned you wouldn't meet your own expectations.

_____ 22. You were concerned that if you got a good grade, people would have higher expectations of you in the future.

_____ 23. You waited to see if the professor would give you some more information about the paper.

_____ 24. You set very high standards for yourself and you worried that you wouldn't be able to meet those standards.

_____ 25. You just felt too lazy to write a term paper.

_____ 26. Your friends were pressuring you to do other things.

Appendix D

Academic Procrastination State Inventory (APSI)

PART IV

How frequently **last week** did you engage in the following behaviors or thoughts?

	Not at all 1	Rarely 2	Sometimes 3	Often 4	All the tir 5
1) Put off the completion of a task.....	1	2	3	4	5
2) Allowed yourself to be distracted from your work.....	1	2	3	4	5
3) Gave up studying because you did not feel well.....	1	2	3	4	5
4) Had no energy to study.....	1	2	3	4	5
5) Drifted off into daydreams while studying.....	1	2	3	4	5
6) Had doubts about your own ability.....	1	2	3	4	5
7) Experienced concentration problems when studying.....	1	2	3	4	5
8) Gave up when studying was not going well.....	1	2	3	4	5
9) Doubted that you should have ever taken this course.....	1	2	3	4	5
10) Interrupted studying for a while in order to do other things.....	1	2	3	4	5
11) Thought that you had enough time left, so that there was really no need to start studying.....	1	2	3	4	5
12) Gave up studying early in order to do more pleasant things.....	1	2	3	4	5
13) Did so many other things that there was insufficient time left for studying.....	1	2	3	4	5
14) Studied the subject matter that you had planned to do.....	1	2	3	4	5
15) Felt, when studying, that you disliked the subject.....	1	2	3	4	5
16) Had panicky feelings while studying.....	1	2	3	4	5

PART IV

How frequently **last week** did you engage in the following behaviors or thoughts?

	Not at all 1	Rarely 2	Sometimes 3	Often 4	All the tin 5
17) Experienced fear of failure.....	1	2	3	4	5
18) Felt tense when studying.....	1	2	3	4	5
19) Wondered why you would study if this would mean so much trouble for you.....	1	2	3	4	5
20) Felt that you really hated studying.....	1	2	3	4	5
21) Found the subject matter boring.....	1	2	3	4	5
22) Forgot to prepare things for studying.....	1	2	3	4	5
23) Prepared to study at some point in time but did not get any further....	1	2	3	4	5

Appendix E1

Satisfaction with Life Scale (SWLS)

PART V

Below are five statements with which you may agree or disagree. Using the scale below each item, indicate your agreement with each statement by placing a mark in the appropriate box.

Please be open and honest in your responding.

---

1. In most ways, my life is close to my ideal.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
☐	☐	☐	☐	☒	☐	☐

2. The conditions of my life are excellent.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
☐	☒	☐	☐	☐	☐	☐

3. I am satisfied with my life.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
☐	☐	☐	☐	☐	☐	☐

4. So far, I have gotten the important things I want in life.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
☐	☐	☐	☐	☐	☐	☐

5. If I could live my life over, I would change almost nothing.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
☐	☐	☐	☐	☐	☐	☐

Appendix E2

Positive and Negative Affect Scales

PART VI

This questionnaire consists of ten adjectives which may describe the way you have felt during the past few weeks. Using the scale below each item, please indicate how much each adjective describes how you have felt lately. Indicate your choice by making a mark in the appropriate box.

During the past few weeks did you ever feel . . .

Happy

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Frustrated

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Worried or Anxious

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Joyful

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Pleased

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Angry or hostile

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Unhappy

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Depressed

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Enjoyment/Fun

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Guilt

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extremely Much

Appendix F1

Personal Projects Analysis (PPA)

PART VII

I am interested in studying the kinds of activities and concerns that university students have. I call these *personal academic projects*. As students, we all have a number of personal academic projects at any given time that we think about, plan for, carry out and sometimes (though not always) complete.

Here are some examples of personal academic projects:

Study for my Calculus exam.
Getting into graduate school.
Writing my History term paper.
Choosing a thesis topic.
Go to the library to search for a journal article.
Meet with my professor.
Form a study group for statistics.
Finish reading my book for English class.

I am also very interested in finding out how students feel about these personal academic projects, how enjoyable they are, and so on. I would appreciate it if you could begin by writing down in the next ten minutes as many personal academic projects as you can that you are engaged in or thinking about at the present time – remember these are not necessarily formal projects, or important ones – I would prefer you to give me more of the everyday kinds of activities or concerns that characterize your academic life at present.

List of Academic Projects

Please go ahead and write down as many as you can in ten minutes.

Now **select ten projects** from your list on the previous page that you are most likely to engage in over the next month or so. If you wrote down fewer than ten projects, see if you can think of several more, or break down some of those you listed into several projects. It is important that you try to select ten projects.

Glossary

In rows 1 to 18 please rate each one of your projects using any number from 0 to 10, inclusively, on the following dimensions:

1. Importance: how important each project is to you at the present time (use 10 if the project is very important to you and 0 if it is not at all important to you).

2. Enjoyment: how you enjoy working on each project (use 10 if you enjoy it a great deal and 0 if you do not enjoy it at all).

3. Difficulty: how difficult you find it to carry out each project (use 10 for a project that you find very difficult to carry out and 0 for one that you do not find difficult at all).

4. Visibility: how visible each project is to the relevant people who are close to you, that is how aware are they that you are engaged in this project (use 10 for a project which is very visible to those around you and 0 for a project which is not at all visible to those around you).

5. Control: how much you feel you are in control of each project (use 10 for a project over which you feel in complete control and 0 for a project over which you feel you have no control at all).

6. Initiation: how much you feel responsible for having initiated each project (use 10 if you feel fully responsible for having initiated a project and 0 if you feel you have taken no part whatsoever in initiating a project).

7. Stress: how stressful it is for you to carry out each project (use 10 if a project is very stressful to carry out and 0 if a project is very relaxing to carry out).

8. Time Adequacy: how much you feel that the amount of time you spend working on each project is adequate (use 10 if you feel that the amount of time spent on a project is perfectly adequate and 0 if you feel, for one reason or another, that the amount of time you spend working on a project is not at all adequate).

9. Outcome:	what you anticipate the outcome of each project to be (use 10 if you think that a project will be extremely successful and 0 if you think that a project will turn out to be a total failure).
10. Self-identity:	how typical of you each project is (use 10 is a project is very typical of you and 0 if it is not at all typical of you).
11. Others' view:	how important each project is seen to be by relevant people who are close to you (use 10 if a project is seen by others as very important and 0 if it is seen as not important at all).
12. Positive impact:	how much you feel that each project helps the others. Don't worry whether it hinders or not, we'll get to that on the next dimension (use 10 to indicate that a project greatly increases your chances of working on other projects and 0 to indicate that a project has no positive effect).
13. Negative impact:	how much you feel that each project hinders other projects (use 10 to indicate that a project seriously hinders your chances of working on other projects and 0 to indicate that it does not have any negative effect).
14. Progress:	how successful you have been in a project so far (use 10 to indicate that you have been very successful and 0 to indicate that you have had no success at all).
15. Challenge:	to what extent each project is demanding and challenging to you (use 10 if a project is most challenging and 0 if it is not challenging at all).
16. Absorption:	to what extent you become engrossed or deeply involved in a project (use 10 if you generally get absorbed in an activity and 0 if you ten to be uninvolved when doing it).
17. Guilt:	how much guilt is associated with a project (use 10 if you feel very guilty in regards to this project and 0 if you do not feel guilty at all).
18. Procrastination:	to what extent do you delay or put off doing a project (use 10 for a project that you almost always put off doing and 0 if you do not put off this project at all.

Personal Projects Rating Matrix

Instructions: 1. Write the names of the **ten projects you chose** from your project list(s) in the spaces provided below (i.e., in the ten columns under "List of Projects").
2. **Using the glossary** provided on the previous two pages, rate each of your projects on the project dimensions in the matrix.

Note: **Use ANY NUMBER between "0" and "10" for your ratings.**	**List of Projects**	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Project Dimensions											
1. Importance											
2. Enjoyment											
3. Difficulty											
4. Visibility											
5. Control											
6. Initiation											
7. Stress											
8. Time Adequacy											
9. Outcome											
10. Self-Identity											
11. Other's View											
12. Positive Impact											
13. Negative Impact											
14. Progress											
15. Challenge											
16. Absorption											
17. Guilt											
18. Procrastination											

Appendix F2

Modified Instructions for Personal Projects Analysis (PPA)

Now look over the photocopy I handed back to you containing your list of projects from a few weeks ago. Please check off any project(s) that you either finished or abandoned altogether. Mark an "**F**" in the margin beside the appropriate project if you **finished** it. Mark an "**A**" in the margin beside the appropriate project if you **abandoned** it.

Of the **remaining projects** (i.e., not those projects that have been finished or abandoned) on your photocopied sheet and your new list of projects from the previous page, select ten projects that you are most likely to engage in over the next month or so. If you have fewer than ten projects, see if you can think of several more, or break down some of those you listed into several projects. It is important that you try to select ten projects.

Glossary

In rows 1 to 18 please rate each one of your projects using any number from 0 to 10 on the following dimensions,

1. Importance:	how important each project is to you at the present time (use 10 if the project is very important to you and 0 if it is not at all important to you).
2. Enjoyment:	how you enjoy working on each project (use 10 if you enjoy it a great deal and 0 if you do not enjoy it at all).
3. Difficulty:	how difficult you find it to carry out each project (use 10 for a project that you find very difficult to carry out and 0 for one that you do not find difficult at all).
4. Visibility:	how visible each project is to the relevant people who are close to you, that is how aware are they that you are engaged in this project (use 10 for a project which is very visible to those around you and 0 for a project which is not at all visible to those around you).
5. Control:	how much you feel you are in control of each project (use 10 for a project over which you feel in complete control and 0 for a project over which you feel you have no control at all).
6. Initiation:	how much you feel responsible for having initiated each project (use 10 if you feel fully responsible for having initiated a project and 0 if you feel you have taken no part whatsoever in initiating a project).
7. Stress:	how stressful it is for you to carry out each project (use 10 if a project is very stressful to carry out and 0 if a project is very relaxing to carry out).

Appendix G

Between-session Assignment #1

Record thoughts, feelings (including how intense they are), behaviours, that have to do with procrastination

TASK OR ACTIVITY	FEELINGS (1-10)	THOUGHTS	BEHAVIOURS
BEFORE			
DURING			
AFTER			

MORE HELPFUL/FUNCTIONAL THOUGHTS	FEELINGS (1-10)	BEHAVIOURS
BEFORE		
DURING		
AFTER		

Appendix H

Poster Announcement

Do you find yourself procrastinating instead of studying?
Are you having trouble getting your work done on time?
Too many "all-nighters" in your life?

Come join the FREE

ACADEMIC PROCRASTINATION WORKSHOP*

Starting Wednesday, February 18th from 4:30 to 6:30 pm

Register NOW by calling Kelly at 830-2143

(Limited Enrollment)

*Participation in this workshop involves six weekly sessions as well as your participation in a procrastination research project.