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An Examination of the Relations between
Emotional Intelligence and Procrastination

by

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In

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Abstract

The purpose of this thesis was to explore the relations between the components of Trait Emotional Intelligence (EI), which define the effective appraisal and utilization of emotions, and various forms of procrastination (general, academic, and Internet). Study 1, a self-report study, showed that the EI component of self-control was the only component to predict combined procrastination scores, however the EI components of emotionality, sociability, and well-being were predictors of academic and/or Internet procrastination. Study 2 examined how Trait EI related to the amount of breaks taken during the completion of a reading and writing task as well as task performance in an experimental context. Results indicated no significant relations between Trait EI components, total breaks, and task quality. The results are discussed in relation to role of EI in the process of self-regulation failure, particularly the priority of short-term mood repair over long-term goal pursuit typical of procrastination.

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Eric Heward

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An Examination of the Relations between Emotional Intelligence and Procrastination

A recurring problem for many people is procrastination in completing assigned tasks. These people may not be lazy or irresponsible, but when faced with an aversive task, they may choose to needlessly delay acting when they intended to act. One possible reason for this procrastination stems from the negative emotions associated with aversive tasks (Blunt & Pychyl, 2000) as well as the strategies that individuals use to repair negative moods (Tice & Bratslavsky, 2000). Considered most generally, we prefer to feel good now, and we accomplish this by delaying work on aversive tasks at the expense of long-term goals. Prioritizing emotional repair can undermine self-control needed to stay on-task. And, although all of us do this at some time, it is truly problematic for subset of people who have been labelled chronic procrastinators in the research literature (e.g., Ferrari, Johnson & McCown, 1995).

Given that short-term emotional repair is related to procrastination and other forms of self-regulatory failure, I argue that a key individual difference that may account for the variance we see in procrastination across the population is emotional intelligence. Emotional intelligence describes the skills required to effectively identify and utilize emotions to guide behaviour (Mayer & Salovey, 1997; Petrides & Furnham, 2003). This construct is composed of a number of sub-components related to resolving negative emotions and exerting self-control that may well be related to decreasing the frequency and severity of procrastination. In this thesis project, I argue that there are emotion-laden skills, such as emotional awareness and control that can help us in initiating work on and

completing our intended tasks in a timely manner, as opposed to coping with negative emotions through unnecessary task delay.

For my thesis research, I examined the relations between the sub-factors of Emotional Intelligence (EI) and procrastination. I begin with a review of the literature of self-regulation failure stemming from the prioritization of mood repair. This is followed by a review of a resulting behaviour of mood repair, procrastination. In this section, I clearly explain how procrastination is a problem of self-regulation failure that may be best understood as a prioritization of short-term mood repair over long-term goal pursuit. In the sections that follow this, I examine self-control, emotion regulation and the methods by which individuals control and repair their moods. Overall, I argue that emotion regulation is an essential ability to help understand the reasons for procrastinating and to develop strategies to stop such behaviour. Finally, in the last section of the review, I explore EI, its distinct models, and the how each model conceptualizes the effective identification and utilization of emotions. Based on this review, I argue that a fruitful avenue to reducing procrastination may come from understanding how the sub-factors of EI bolster our self-regulation to complete the appointed task. This thesis project is the first study to thoroughly explore the relations between the sub-factors of EI and the breakdown in volitional action commonly known as procrastination.

“Giving in to feel good” – Prioritization of short-term mood repair

It is quite common to experience negative emotions when faced with an aversive task. When we start an activity for work or school, many emotions arise that make the task an unpleasant one. These emotions can range from anger, boredom, anxiety or intense worry all of which are unpleasant and aversive (Blunt & Pychyl, 2000; see also, Ferrari, 2000; Lay, 1992; Lay & Brokenshire, 1997; Solomon & Rothblum, 1984). It is common for many people, and chronic for some, that we seek to repair these negative emotions despite the potential consequences in the long-term (Tice & Bratslavsky, 2000).

Short-term mood repair is the topic of interest in previous research by Tice and Bratslavsky (2000), who noted the prioritization of mood repair when faced with negative emotions. Their research showed that by making mood repair a priority, we are undermining our self-control needed to complete our target behaviour, specifically curbing maladaptive behaviours. This is also known as “giving in to feel good” (Tice & Bratslavsky, 2000). When we give in to feel good, we succumb to the impulsive urges to gamble, drink alcohol, spend money recklessly, and procrastinate, all in the effort to avoid negative emotions. These activities are used in order to prolong a positive emotion or, as in most cases, avoid negative emotions (Parrot, 1993; Tice & Baumeister, 1993). In other words, people who “give in to feel good” would often opt to alleviate negative emotions by avoiding them or by replacing them with something that they believe can elicit positive emotions (e.g., gambling, eating fattening foods, having a shopping spree, delaying effort). As a result, self-control may fail in controlling target behaviours needed to fulfill our long-term aspirations.

One notable aspect of self-control failure from prioritizing mood repair is the emphasis on short-term benefits despite the long-term consequences (Baumeister, 1997; Baumeister, Heatherton, & Tice, 1994; Mischel, 1974, Mischel, Canter, & Feldman, 1996 as cited in Tice & Bratslavsky, 2000). In this regard, mood repair seems to be a more pressing concern for the individual than the target behaviour. Most often, the individual would seek to do the opposite of his or her target behaviour. For example, people frustrated with their diet regimen may cheat and have calorie-rich foods, which were strictly forbidden for health reasons. In their review of emotion regulation and self-control behaviour literature, Tice and Bratslavsky (2000) emphasize the high cost of failure to properly regulate emotions when trying to control certain types of maladaptive behaviours. It is important to note that their review primarily focused on how mood repair undermines self-control for some of the more impulsive behaviours such as binge eating, gambling, and procrastination, all of which require rigorous planning and stern discipline in order to resist the impulse to “give in.”

The idea of giving in to feel good was explored in a follow-up study by Tice, Bratslavsky and Baumeister (2001) that involved a series of experiments involving mood repair and impulse-control via the use of emotion freezing, where participants are told that there is no way to change affect in the short-term. Each experiment dealt with a different form of impulsive behaviour; including binge eating, delay of gratification or procrastination. Participants were induced into a negative mood and placed in either a normal condition or an “emotion-freezing” condition in which experimenters told the participants that impulsive behaviour (e.g., eating snacks or playing games) would not

immediately change mood. Results from each experiment showed that participants who were in a negative mood and were under the impression that their mood could be changed (i.e., those not in the emotion-freezing condition) were more likely to engage in the impulsive behaviour more often or to a higher degree than those who believed that their mood could not be changed. These experiments suggest that mood repair will take priority over distal goals if people think that the impulsive behaviour can change their mood in the short-term. Of course, the authors also note that people may feel worse later, as the impulsive behaviour may interfere with long-term goals, such as weight loss through a diet.

Overall, the above studies on emotion regulation and self-control emphasize the potential cost of prioritizing mood repair over more important long-term goals and that the prioritization of emotional repair can undermine the ability to self-regulate behaviour. This cost is especially evident in the case of procrastination, which is conceptualized as a persistent form of self-regulation failure (e.g., Steel, 2007). We can also note the role of emotions in the process of deciding to procrastinate, as when given the option, we will choose to delay our aversive tasks in favour of activities we perceive as more enjoyable (Pychyl et al., 2000). This focus on short-term mood repair, preferring the more enjoyable task now over the more aversive task related to a long-term goal, may be a key emotional-regulation process that we need to recognize in order to understand procrastination.

Procrastination

Procrastination is the voluntarily delay of an intended course of action despite knowledge of the negative consequences for the delay (Steel, 2007). This is the most recent and comprehensive definition based on previous research (e.g., Schowenborg & Lay, 1995; Ferrari, Johnson, & McCown, 1995; Schowenborg, Lay, Pychyl & Ferrari, 2004). Procrastination involves the voluntary delay of a task that is irrational, as the person knows that staying on-task would likely yield more positive outcomes.

Procrastination is a behaviour that is associated with significant long-term costs. For example, research suggests that students who procrastinate perform more poorly (lower GPA) than students who do not procrastinate on a regular basis (e.g., Tice & Baumeister, 1997; Steel, 2007). Of course, lower grades may result in serious long-term consequences such as lost scholarships and ineligibility for advanced educational programs. Previous research also notes that there is a significant gap between the intention to complete work and the actual process of completing assigned tasks, which may potentially impair the quality of work (Steel, Brothen, & Wombach, 2001).

In addition to poor performance, procrastinators tend to display more detrimental health behaviours (Sirois, Melia-Gordon, & Pychyl, 2003; Sirois, 2004b; 2007). This research focuses on how procrastination is related to the increased likelihood of stress as well as fewer health behaviours such as less frequent medical and dental checkups. This type of behaviour may have some serious long-term consequences, as medical checkups are one of the best preventative measures to reduce the likelihood of serious illness. Procrastination adversely affects our subjective well-being as well. This is evidenced in a

previous study, in which procrastinators that reported low stress and good health at the beginning of a semester later reported more anxiety, negative events, and more illnesses at the end of the semester (Tice & Baumeister, 1997). This is in addition to the low grades they also received as a result of working at the last minute.

Overall, procrastination is a maladaptive pattern of behaviour, in which people sacrifice long-term goals and aspirations for specious short-term gains. People may feel good in the short-term in avoiding their work, but such behaviour usually has negative future consequences.

Procrastination: Causes and correlates

There is an extensive literature on the causes and correlates of procrastination. One of the most basic causes of the behaviour is the characteristics of the task such as the aversiveness of the task (Blunt & Pychyl, 2000) and the timing of punishments and rewards (Steel, 2007). These characteristics influence the perceived difficulty of the task as well as the effects of the rewards. If a task is difficult and yields very few immediate rewards, typically people feel hesitant to initiate and complete the task.

Procrastination is also linked to personality, specifically Costa and McCrae's (1992) Five Factor Model (FFM). The factor that is most highly related to procrastination is conscientiousness (Schouwenburg & Lay, 1995; Watson, 2001; Lee, Kelly & Edwards, 2006). This relation is a negative one, as conscientiousness entails personality traits that are contrary to procrastination behaviours such as deliberation, dutifulness, and high striving for achievement. Neuroticism is also noted as related to procrastination, but this relation is a positive one as there are many characteristics that

may be present among procrastinators such as low self-esteem, self-handicapping, and depression (Steel, 2007). Extraversion is also positively related to procrastination (albeit weakly) in that extraverts are more likely to be impulsive and seek sensation, which may increase the likelihood to procrastinate (Pickering et al., 1997; Ainslie, 1992 as cited in Steel, 2007). Agreeableness and openness to experience were found to have very little to no relation to procrastination (Schouwenburg & Lay, 1995; Watson, 2001). However, Watson (2008) asserted that from the openness to experience factor, there was a significant correlation between procrastination and fantasy, which suggests that people may fantasize to escape from the negative states elicited by the task or work project.

Procrastination is also noted as a motivation problem (van Eerde, 2003). These motivation problems deal primarily with the fear of failure and perfectionism, two constructs that deal with the avoidance of negative feedback. Like the other possible causes noted above, deficits in motivation illustrate characteristics that may increase the likelihood of procrastination. As noted in this section, there are multiple causes or reasons for people to procrastinate. However, as different as each cause may be from each other, they all contribute to the underlying cause of procrastination, that being the failure to regulate behaviour.

Procrastination as self-regulation failure

Of all the possible causes of procrastination, the one that receives the most attention is procrastination as a specific instance of self-regulation failure. Chronic procrastinators seem unable to regulate their own behaviours, which results in them completing the work at the last minute, if at all. At times, they may succeed, but research

shows that their own self-awareness is skewed, and the cognitive load stemming from the amount of information results in fewer tasks completed and more errors in experimental settings (Ferrari, 2001). These emotions are compounded by time constraints, a direct result of working at the last possible moment. Decisional procrastination, the inability to make decisions in a quick and timely matter, is also related to poor self-regulation (Ferrari, Johnson, & McCown, 1995; Ferrari & Pychyl, 2007). Indecisive people are prone to take longer in a stroop task and expend more energy doing so. This may result in a weakened self-regulation and the likelihood to fail in controlling behaviour (Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2004). Research on procrastination emphasizes the ability to regulate behaviour as a key aspect in staying on-task. Once that self-regulatory resource is depleted, the likelihood to delay the intended course of action increases.

Taken together, what the existing research indicates is that procrastination is primarily a problem with regulating behaviour. This failure to self-regulate is even present in one of our most valued tools, the Internet. The emergence of new communication technologies, specifically instant messaging and social networking tools have gained more popularity and may have certainly influenced the frequency of procrastination in the workplace and academic context (e.g., Lavoie & Pychyl, 2000). Paradoxically, a tool that most students and professionals use to complete work is also used for distractions and delays. In this sense, our failure to self-regulate our behaviour is even present when we take short “e-breaks.”

Procrastination in the technological era

Since its rise in North American society, the Internet has been used for both an important work tool and a source of distraction. Paradoxically, the Internet, a tool used to disseminate, organize and access information, can also lead to and facilitate procrastination (Lavoie & Pychyl, 2000; Thatcher, Wretschko, & Fridjhon, 2008). Other Internet uses, such as online gaming, *YouTube*, and online-shopping websites have added to the notable distractions for both professionals and students. This is a troubling trend, as the computer, a fundamental tool for work and study, can also act as a venue for procrastination and costly delays. Research by Lavoie and Pychyl (2000) on “cyber-slacking” has shown that Internet procrastination is positively correlated with the perception that the Internet is a relief from stress, the perception that the Internet is a tool for work, trait procrastination, and negative affect. Although this research was conducted before the arrival of more time-consuming Web 2.0 Internet applications such as social networking sites and online gaming, it still presents a compelling sign of how the Internet can and is being used for procrastination.

More recent research has shown that online chat features and online gaming are strong predictors of Internet procrastination (Thatcher, Wretschko, & Fridjhon, 2008). Online activities such as social networking can absorb so much time and attention that the assigned work or task is pushed to the periphery, thus causing delays. For example, the problematic use of online chat, blogging or gaming is related to increased procrastination and decreased experiences of flow (i.e., the state in which the enjoyment of a task that stems from the person’s perceived skills match the requirements and skill demands for

the task [Csikszentmihalyi, 1997]). Thatcher, et al. (2008) also point out the enticing features of the Internet such as instant messaging and online gaming include high levels of social interaction, perceived control and accessibility, and are common activities for chronic Internet use as a form of procrastination.

In addition, previous research has revealed that there is a great deal of time wasted in the workplace by procrastinating on the popular social networking website *Facebook* (Nucleus Research, 2009). From a random sample of 237 office workers, the use of *Facebook* across all employees created a loss of approximately 1.5 percent in productivity in the workplace. Although the loss of productivity may seem small, this is troubling to employers, as it is an unnecessary loss of time and resources.

Interestingly, there is research that suggests, contrary to the Nucleus Research (2009) study, that taking small “e-breaks” during the course of work may help to improve concentration (Coker, 2009). In his research, Coker asserts that taking a small break by engaging in an enjoyable activity on the Internet would be more refreshing than sitting in a break room and can re-invigorate workers’ concentration, which can be depleted over time. Overall, there is conflicting research that is for and against taking small e-breaks during work periods. Indeed, using the Internet as a small break may help refresh a tired worker, but there is also the possibility for procrastination if Internet privileges are taken for granted, causing a loss of productivity. There is also research suggesting that media multi-taskers, people that conduct multiple computer tasks and Internet activities, are unable to maintain focus as well as workers that do not multi-task (Ophir, Nass & Wagner, 2009). Research by Ophir et al. (2009) has revealed that heavy media multi-

taskers performed worse in a test of task switching ability than participants that conducted less multi-tasking. In this case, the heavy multi-taskers were unable to parse out any interfering or irrelevant stimuli in the task.

Taken together, this research indicates that the Internet is another venue for distraction, a potential distraction for “giving in to feel good,” that can undermine self-control. It is possible that using the Internet in small e-breaks may refresh concentration, but there is the issue of excessive use and abuse of the Internet, which undermines the ability to self-regulate. With the advent of more Internet distractions, the likelihood that an individual would give in to feel good by surfing the Web instead of getting work done has increased. There are many distractions available to us in the Internet. It is simple for most people to find an enjoyable activity when engaged in an aversive task; in fact, a strategy for emotional regulation is only a click away. What is required to avoid this short-term, “giving in to feel good” trap, is self-control.

Self-control

The concept of self-control is described as the overriding of dominant behaviours to successfully achieve goals and enhance long-term well-being (Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000; Oaten & Cheng, 2006). In most cases, self-control involves the inhibition of behaviour that provides short-term gain in favour of behavior that result in more long-term benefits. Exerting self-control has been shown to assist in avoiding the harmful consequences of impulsive behavior such as underachievement in work and school, interpersonal conflict, and various addictive behaviours (Baumeister & Vohs, 2004). When self-control is exerted, the impulse to

engage in potentially self-destructive behaviours is overridden by an internal mechanism that focuses on long-term goals and benefits. Self-control can also help in enhancing the behaviours needed to accomplish academic goals. For example, Oaten and Cheng (2006) found that students that exert self-control are more likely to avoid distractions and debilitating emotions when studying for exams. In this regard, the exertion of self-control helped to strengthen the discipline and resolve needed to stay on task.

The most documented model of self-control likens the construct to a muscle; the more it is exerted, the more likely it will experience fatigue and even exhaustion (Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000). For example, in a series of experiments involving two consecutive self-control tasks, Muraven, Tice and Baumeister (1998) found that performance was impaired in the second task. Each task required a different method of self-control than the other, but on the second consecutive task, participants who used self-control in the first task, frequently experienced lower performance scores, as their self-regulatory resources were depleted in the completion of the first task. For example, the first study involved a form of mental self-control; the second task utilized a physical self-control method (hand squeezing from a hand shake), which suffered from decreased proficiency. The effort exerted from the first task impaired the performance in subsequent self-control tasks. As documented in this model, self-regulation failure is likely to occur when an individual exerts self-control too frequently. The energy and the resources needed to maintain control are drained, and the individual is more susceptible to follow their impulses.

The willpower-as-a-muscle theory is comprised of five separate principles (Muraven & Baumeister, 2000). First, self-control energy is a vital component of the self to initiate self-control behaviour. In other words, we require the necessary volition or will to control our behaviour. Second, the power to engage in self-control behaviour is limited and has a finite capacity. Willpower can be exerted to control behaviour only so often before impulsive urges take over. Third, all uses and types of self-control draw energy from the same source. Therefore, controlling behaviour mentally may hamper physical self-control as they tap into the same resource pool. Fourth, self-control behaviour is only successful when there is enough strength to complete the action. If the strength needed to control behaviour exceeds the desire to engage in impulsive behaviour, it is likely that control will be exerted. Fifth, all self-control behaviours exert energy. Although some actions exert more energy than others, resources are always depleted when self-control is exercised.

Overall, the self-control as a muscle theory is suitable for my research as it does explain how self-control can fail. It stands to reason that self-control behaviour cannot always be exerted. Like all muscles, it is necessary to have a period of rest to avoid strain and exhaustion. It is important to understand, on an individual level, how large the resource supply is and how long self-control can be exerted before the supply runs out.

As a construct normally associated with personality, self-control differs between individuals. Some people will naturally have more resources to exert self-control than others (Muraven & Baumeister, 2000). From birth, it is possible for some people to have a large resource pool for self-control, while others will have a significantly smaller one

and would be more susceptible to their impulses. However, it is assumed that the self-control reservoir can also grow larger with continual use and practice (Muraven & Baumeister, 2000). Like a muscle, the more it is efficiently exerted, the less energy is required to perform an action with it. The more we exert certain self-control behaviours, the less energy it will consume in subsequent uses.

Other behaviours related to self-control are also vulnerable to burnout. Muraven and Baumeister (2000) suggest that behaviours like the delay of gratification and emotion regulation also use energy and resources and are privy to the same burnout as self-control. For instance, the notion of delaying gratification relies heavily on controlling mood (Fry, 1975; Mischel, Ebbsen, & Zeiss, 1972; Schwarz & Pollack, 1977; Seemant & Schwarz, 1974 as cited in Muraven & Baumeister, 2000). Each of these studies examined the gratification of children in different affective conditions. In each study, children in negative moods prefer to choose the small reward immediately rather than a larger reward after a longer period of time. In each case, negative mood influenced how and when people experience gratification. Such research underscores the importance of understanding how self-control functions and *how emotions influence* self-control behaviour. In addition, it has become increasingly important to understand the dynamics of how we manage our emotions, as our affective state can be an important factor in controlling our behaviour.

Emotion Regulation

Emotion regulation can be defined as, “The processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions.” (Gross, 1998, pg. 275). In other words, emotion regulation is the method in which individuals make decisions about emotions and how to express and act on them. This construct also has five principles to understand how emotion regulation is used. First, the underlying principle of emotion regulation is to maximize positive emotions and to minimize the frequency of negative emotions (Parrott, 1993 as cited in Gross, 1998). The repair of negative emotions is the underlying feature of emotion regulation, as it is when negative emotions are experienced that we may feel the need to regulate our emotions. Second, not all emotion regulation processes in our neural network overlap, suggesting that there are different methods and processes to attend to different emotions (LeDoux, 1994; Panksepp, 1982; 1996 as cited in Gross, 1998). These differences in emotion regulation processes account for the idea that not all emotions are handled in the same manner. Third, emotion regulation as defined by Gross (1998) suggests that emotion regulation is a process that is strictly involved with the internal regulation of our emotions. Emotion regulation in this sense does not involve the manipulation of others’ emotions. Fourth, emotion regulation is a conscious process (Gross, 1998). People that exert emotion regulation are aware of when they are controlling their emotions. Fifth, emotion regulation is a process that can be helpful in some situations and harmful in others (Thompson & Calkins, 1996, as cited in Gross, 1998). Emotion regulation may help in some cases, yet it may hinder the individual in

other cases such as when people “give in to feel good” instead of completing a task in a timely manner to achieve a valued long-term goal to the best of their ability.

In the emotion regulation literature, there are two distinct strategies identified to control emotions. Cognitive reappraisal involves a change in cognition that is characterized by appraising an emotion-laden situation in a different manner to change emotional affect (Lazarus & Alfert, 1964). Said another way, the emotions elicited in the situation are appraised in a fashion to either maximize or minimize emotional affect. For example, an individual may decide to focus on the positive aspects of a situation in order to soften the severity of the negative event or to develop new strategies to increase positive affect. This strategy is considered to be an effective form of emotion regulation, and it is linked to improved psychological well-being (Gross & John, 2003; John & Gross, 2004). This is an interesting point, as previous research on procrastination has suggested that there are benefits from reflecting on positive outcome to negative events (Sirois, 2004a). This research illustrated that procrastinators often use downward counterfactual thinking (reflecting on how a negative event could have turned worse), as a method to repair mood. It seems that actively thinking of ways to improve negative situations may be more beneficial in such situations where we may feel distressed.

Another method is expressive suppression, which involves the inhibition of the expression of emotion (Gross, 1998). When this type of regulation is used, the individual ignores the emotion and refuses to express it. Generally, expressive suppression is considered a less-preferred emotion regulation strategy as it does not decrease the intensity of the emotion (Gross, 1998), it is detrimental to one’s mental health (Gross &

John, 2003), and it may fatigue self-regulatory resources or willpower (Baumeister, 1997). Simply ignoring or pushing aside the emotion does not affect the influence of the emotion, and the appraisal of the emotion does not change. It would still be as unbearable as when it was first experienced, and this emotional suppression may undermine self-regulatory strength for subsequent self-control.

The difference between cognitive reappraisal and expressive suppression is evidenced in the prediction of risk behaviours. Recent research from Magar, Phillips and Hosie (2008) involved a sample of 153 undergraduate psychology students who completed a battery of self-report scales to measure levels of emotion regulation, cognitive regulation risk-taking behaviours and social desirability. Results showed that emotion regulation predicted actual risk-taking behaviours, with the likelihood of smoking and drinking alcohol at an earlier age by using expressive suppression more often. From this study, we can see that suppressing the impulse to conduct risky behaviours does not decrease the emotion's intensity. Instead, we should actively re-appraise emotions in order to guide our behaviour and make the right decisions. Effective emotion regulation is required to support our self-control; otherwise we may be prone to undermining our self-regulation and engage in maladaptive behaviours.

The concepts of self-control and emotion regulation are important to understand as they outline the strategies that are used internally to manage behaviour and emotions. Indeed, the ability to control behaviour and emotions may seem to be necessary components of reducing procrastination. But how can we control our emotions without the necessary competency to effectively utilize emotions, or even acknowledge our

emotions to complete goals? I argue that it would be difficult to control our emotions and regulate behaviour without the knowledge of our internal emotional states. It would be more beneficial to have an internal mechanism to understand why we feel negative emotions when engaged in aversive tasks instead of favouring short-term mood repair. This is where the construct known as Emotional Intelligence (EI) comes into play. Described as the competency in appraising and utilizing emotions to attain goals, EI also has the distinction of having self-control and emotion regulation within its taxonomy. Perhaps it is the interplay with other components of EI that make self-control and emotion regulation effective strategies to reduce procrastination. Understanding the components or sub-factors of EI can provide important individual difference variables that may shed some light on how emotions may be utilized to attain behaviours that are related to specific goals.

Emotional Intelligence

Emotional intelligence (EI) is a construct that is defined as the ability to accurately identify and utilize emotions to guide thought and behaviour (Mayer & Salovey, 1990). The research on emotional intelligence is divided into two camps. Ability EI theorists envision it as an ability that is measured objectively through tests of competency, much like a standard intelligence (Mayer & Salovey, 1997). In contrast, researchers of Trait EI conceptualize it as a personality trait, and their focus is on consistencies in behaviour as measured via self-reports and observations (Petrides & Furnham, 2000). Although different in how they are conceptualized and measured, both models do emphasize the ability to utilize emotions to achieve specific goals. In addition,

each model emphasizes the importance of managing emotions to guide behaviour. The next section provides a brief summary of each model and how EI is measured.

Ability EI

The ability model of emotional intelligence was first developed by Mayer and Salovey (1990) and it described the skills and abilities used to effectively identify and utilize emotions. In its inception, the EI (1990) model was primarily used as a form of social competence and the understanding of emotions from others. The model was later modified to define emotional intelligence as a cluster of skills and abilities to identify and utilize emotions from self and others to guide thought and action (Mayer & Salovey, 1997). This model consists of four distinct branches, each containing their own set of skills that make up total emotional intelligence: 1) the ability to perceive emotions from the self and from others, 2) the ability to use emotions to guide thought, 3) the ability to understand emotions and the underlying information conveyed in each emotion, and 4) the ability to manage emotions to attain specific goals. The full taxonomy of the emotional intelligence model is presented in Table 1.

Table 1: Factor structures of Mayer and Salovey's (1997) Ability EI model

Factor	Level 1 skill	Level 2 skill	Level 3 skill	Level 4 skill
Accurately perceive emotions (self and others)	Monitor own thoughts, feelings and emotions	Recognize emotions in other people	Express emotions to communicate wants/needs	Distinguish between accurate/inaccurate and sincere/insincere representations of emotion
Use emotions to guide thought	Prioritizing thinking and focusing on important information	Use strong emotional information to guide judgment and memory	Appreciate rapid changes and multiple points of view in emotional information	Facilitate different methods of problem solving via specific mood and emotions
Understanding emotions	Label emotions and recognize the difference between the emotional label and the emotion itself	Interpret emotion's meaning in relation to the outside world	Acknowledge complex emotions and complicated relationships	Recognize transitions from one emotion to another
Managing emotions to achieve goals	Open to experience both positive and negative emotions	Engage or avoid an emotion by gauging its utility	Monitor emotions in self and others	Manage emotions of self and others by enhancing positive emotions and decreasing negative emotions

The ability model of emotional intelligence uses an inter-locked set of skills that is conceptualized as a form of intelligence (Mayer, Salovey, Caruso, & Sitarenios, 2001). As a form of intelligence, it is argued that competency can be measured via a set of tests that require participants to utilize each branch of the Ability EI model via measures like the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, Caruso, & Sitarenios, 2003). As a cognitive skill or type of intelligence, Ability EI measures such as the MSCEIT and the Multibranch Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 1999) have positive correlations with verbal/crystalized intelligence scales ($r = .36$), supporting the claim of the MSCEIT as an index of emotion-related knowledge that is related to verbal intelligence (Mayer, Roberts, & Barsade, 2008). Overall, the Ability EI model is one of optimal-performance, a model that can be measured like a cognitive skill or a standard form of intelligence.

However, one major criticism of this model is its inability to measure emotional intelligence objectively (Roberts, Zeidner, & Matthews, 2001; Petrides & Furnham, 2001; 2003). It is argued that the scoring of the MSCEIT, which uses consensus scores from both emotion experts and participants, does not create an objective competency test of the skills it seeks to measure. In addition, Ability EI measures do not account for emotions of the participants, and how efficient people feel about their understanding and use of emotions. The subjective nature of emotions can undermine the ability to create and score tests under set criteria to describe a sample (Petrides, Furnham, & Mavroveli, 2007). This is in contrast to the Trait EI model, which utilizes more self-report data to measure differences in emotional intelligence between individuals.

Trait EI

Trait EI is a different construct from Ability EI in that it is situated within personality psychology and it is measured via self-reports instead of tests of competency (Bar-On, 1997; Petrides & Furnham, 2000; Salovey, Mayer, Goldman, Turvey & Palfai, 1995). Although it is defined as a component of personality psychology, the term emotional intelligence was used to describe Trait EI as well. For example, the word “intelligence” is used to describe the collection of the characteristics of the model (i.e. emotional self-awareness, reality testing) and the word “emotional” is used to imply that this set of characteristics is different from a form of cognitive intelligence (Bar-On, 1997 as cited in Van Rooy, Viswesvaran, & Pluta, 2005). However, other proponents of Trait EI suggest that the construct is not related to cognitive abilities and that emotional self-efficacy is a more suitable title to describe Trait EI (Petrides, Furnham, & Mavroveli, 2007). As a personality trait, emotional intelligence is more concerned with the cross-situational consistencies in emotion-related behavior rather than specific abilities that are likened to intelligence. Trait EI also focuses on self-perceptions in dealing with emotion-laden information. As a result, Trait EI would involve behaviours that may not explicitly be skills, but are loaded with personality constructs that are high in emotional affect. Examples of these emotion-related behaviors include: empathy, assertiveness, and optimism. Such behaviours, while not dependent on emotions, do involve some utilization of emotions to enhance overall well-being or to develop relationships with others.

One of the earliest models of Trait EI was developed by Bar-On (1997), which was developed into the Bar-On Emotional Quotient Inventory (EQ-i). This model contains fifteen factors grouped in the following five categories: Intrapersonal EQ, Interpersonal EQ, Stress management EQ, Adaptability EQ, General mood EQ. All fifteen factors and their definitions are presented in Table 2.

Table 2: Factor structure of the EQ-I (Bar-On, 1997b; 2000)

Factor	Definition
Intrapersonal EQ	
Self-regard	Understanding and accepting oneself
Emotional self-awareness	Recognize and understand one's emotions
Assertiveness	Express feelings to defend oneself in a non-destructive manner
Independence	Being self-direct and free of any emotional dependency
Self-actualization	Realizing potential and of what one wants and can do
Interpersonal EQ	
Empathy	Acknowledge and respect the emotions of others
Social responsibility	The ability to cooperate with others
Interpersonal relationship	Establish and maintain mutually satisfying personal relationships
Stress management EQ	
Stress Flexibility	Able to withstand stressful and adverse situations without losing control of oneself
Impulse control	Inhibit impulses and temptations and to control one's own emotions
Adaptability EQ	
Reality testing	Able to assess the relation between internal and external events
Flexibility	Adjusting thoughts and feelings to fit situations
Problem solving	Identify personal/social problems and implement solutions
General Mood	
Optimism	"Looking on the bright side of life"
Happiness	The ability to feel satisfied with one's life and experience positive emotions

Similar to the Bar-On's (1997b) model, there is a model of Trait EI based on the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides & Furnham, 2003). This model has many of the same characteristics as the EQ-i, however it consists of four factors instead of five, and places more emphasis on emotion regulation as a method of stress management. Described by Petrides' (2009) in the test manual, the first component, well-being, reflects long-term feelings of happiness, contentment in past achievements, and optimistic expectations for the future. Second, self-control emphasizes the ability to interrupt habitual or impulsive behaviour and cope with stress. The third component, emotionality, reflects the beliefs in emotion-laden skills. People high in emotionality have very little difficulty in recognizing and expressing emotions and using emotions to develop meaningful relationships. Sociability, the fourth component, emphasizes understanding the emotions of others in order to improve social status. In this model, there are fifteen distinct characteristics that make-up the TEIQue and its sub-factors. However, two of these sub-factors do not belong to any TEIQue component, but they do contribute to overall Trait EI scores (Petrides, Pita, & Kokkinaki, 2007). The following table presents the theoretical structure of the TEIQue.

Table 3: Factor Structure of the TEIQue (as cited from Petrides, Pita, & Kokkinaki, 2007)

Factor	High scorers perceive themselves as...
Well-being	
Self-esteem	Successful and self-confident
Trait happiness	Cheerful and satisfied with their lives
Trait optimism	Confident and likely to “look on the bright side” of life
Self-control	
Emotion regulation	Capable of controlling their emotions
Stress management	Capable of withstanding pressure and regulating stress
Impulsiveness (low)	Reflective and less likely to give in to their urges
Emotionality	
Emotion Perception (Self and others)	Clear about their own and other people’s feelings
Emotion expression	Capable of communicating their feelings to others
Relationship skills	Capable of having fulfilling personal relationships
Empathy	Capable of taking someone else’s perspective
Sociability	
Social awareness	Accomplished networkers with excellent social skills
Emotion management (others)	Capable of influencing other people’s feelings
Assertiveness	Forthright, frank, and willing to stand up for their rights
Characteristics Unaligned with any particular TEIQue sub-factor	
Adaptability	Flexible and willing to adapt to new conditions.
Self-motivation	Driven and unlikely to give up in the face of adversity

In terms of validity, there have been multiple studies that support the construct and incremental validity of Trait EI and its four factors. The first example was a series of three studies from Petrides, Perez-Gonzalez, and Furnham (2007) that examined the relations between measures of Trait EI (the EQ-i and the 1.00 version of the TEIQue) and measures of rumination, life satisfaction, depression, dysfunctional attitudes, and coping styles (specifically infrequent use of maladaptive coping styles), which acted as the criteria variables. All of these scales involved the use of emotions and covered components of the Trait EI models. Results from the first two studies showed that both scales were significantly related to each of the criterion variables. In addition, the results remained significant after controlling for the variance from Costa and McCrae's (1992) Big Five personality factors (neuroticism, extraversion, conscientiousness, agreeableness, and openness to experience). The only non-significant relation when controlling for the Big Five stemmed from the relations between the EQ-i and maladaptive coping styles. The third study, showed a significant negative relation between the TEIQue and depression even after controlling for positive and negative mood. Other studies have also attested to Trait EI's construct and incremental validity (see Mikolajczak, Luminet, Leroy, & Roy, 2007; Freudenthaler, Neubauer, Gabler, Scherl, & Rindermann, 2008). Overall, the studies show that Trait EI is a distinct personality construct that can predict behaviour even when controlling for the Big Five and mood (Petrides, Perez-Gonzalez, & Furnham, 2007). Trait EI is a valid personality construct that can predict behaviours that are related to emotions.

As noted earlier, Trait EI is a diverse concept that consists of various emotional and social behaviours that are measured via self-reports. However, it is this diversity that is its source of criticism. Detractors of Trait EI claim that it consists of too many independent components and that it is difficult to develop a global scale/model to research the topic (Mayer, Salovey, & Caruso, 2008). Despite this criticism, the two Trait EI models are used frequently to study the importance of effective emotional understanding on various behaviours and personality traits (Craig et al., 2009; Parker, Taylor, Eastabrook, Schell, & Wood, 2008; Petrides & Furnham, 2001; Singh & Woods, 2008).

Ability and Trait EI

Taken together, both Ability and Trait EI have overlapping features but are fundamentally different in the way the constructs are measured. Ability EI is measured as a cognitive skill, whereas Trait EI is measured as a personality trait. In fact, previous research has shown that the relations between Ability and Trait models of EI are low enough to be considered two distinct constructs (Van Rooy, Viswesvaran, & Pluta, 2005). Overall, the two models of EI share some features (emotional awareness and emotion regulation), but focus on different paradigms of psychological research. Ability EI focuses on cognitive skills and intelligence, whereas Trait EI is more involved with personality traits. As a result, there are low statistical relations between the two models. Given this low relation between the two models, critics of EI research assert that the concept of EI is too confusing to understand, as there are two models that have claimed the title, but are not strongly related (Matthews, Zeidner, & Roberts, 2007).

In order to resolve any confusion about the constructs, Petrides and Furnham (2003) suggested re-labeling Ability EI as “cognitive-emotional awareness” and Trait EI as “emotional self-efficacy.” With these labels, it is easier to see Ability EI as a construct measured by maximal performance and Trait EI self-perceptions involving emotion-laden information. Regardless of the construct’s label, both models of emotional intelligence provide extensive information about how the ability (or perceived competency) to understand emotions to guide action and thought is important to successfully pursue goals. As mentioned earlier, both Ability and Trait EI models do have some theoretical overlap, specifically in the sub-factors emotional awareness and emotion management (Petrides & Furnham, 2003). Given this theoretical overlap between the two constructs, it would be beneficial to recognize that neither construct is more correct than the other; both models provide a reasonable taxonomy of emotional competence.

Recent literature has sought to integrate research in both emotional intelligence models via a 4-week program based on Mayer and Salovey’s (1997) model (Nelis, Quoidbach, Mikolajczak & Hansenne, 2009). In this study, 37 participants completed a four-session workshop and completed the Trait Emotional intelligence questionnaire (TEIQue; Petrides & Furnham, 2003), the Emotional Regulation Profile Questionnaire (ERP-Q; Mikolajczak, Nelis, Hansenne & Quoidbach, 2008), Emotional Management Abilities test (EMA; Fruedenthaler & Neubauer, 2005), Dimensions of Openness to Emotional Experiences (DOE; Reicherts, 1999), the Toronto Alexithymia Scale (TAS-20, Bagby, Parker & Taylor, 1994), and the Situational Test of Emotional Understanding (STEU; MacCann & Roberts, 2008). As the workshop was modeled after the Mayer and

Salovey (1997) model of Ability EI, the training was split into four separate topics, each representing a factor in the model. The first skill, understanding emotion, was taught via role-play to illustrate the importance of emotions and lectures on the key concepts of emotions and EI. Identifying emotions, the second skill of the model, was reinforced via the use of activities to strengthen the ability to recognize emotions via cognitions, facial recognition, and reading body language. The third skill, expressing and using emotions, was taught using lessons to use emotions to improve positive outlooks and problem solving. The final skill, managing emotions, involved lessons in coping strategies and positive re-appraisal via role-playing.

Results showed that there was a significant increase on the TEIQue, ERP-Q, EMA, DOE, and a significant decrease in TAS-20 scores. This is noteworthy as it shows that this type of training did indeed increase the participants' level of emotional intelligence, emotion regulation, and emotion identification. In addition, the training helped to decrease the level of alexithymic behaviours in a normal sample of participants. Also important to note is that the effects of the training were persistent after a six-month follow up procedure. This is the first such study that sought to improve Trait EI via all four sub-factors of the Ability EI model, and it demonstrated that a training regimen may predict improvement in one's ability to effectively identify and utilize the emotions of self and other to enhance thinking and action.

Emotional intelligence and Personality

As a personality construct, Trait EI is tied to many personality constructs and behaviours. For the purposes of this review, only personality constructs related to procrastination and self-control are examined. First, in terms of personality, EI has been positively associated with extraversion, conscientiousness and openness to experience (Brackett & Mayer, 2003; Craig et al., 2009). Neuroticism, on the other hand, has been found to have a negative (Dawda & Hart, 2000) and positive (Kemp et al., 2005) relation with EI, so there is still much to be resolved with research in this area. However, EI seems to be more definitely associated with adaptive traits and personality factors.

Second, there is also research on how EI influences specific behaviours. For example, Mikolajczak and Luminet (2008) asserted that people high in EI exhibit greater self-efficacy to cope with stress and appraise stressful situations as a challenge instead of a threat. In this case, people high on Trait EI were able to effectively identify their stressors and develop strategies to counter them. As a result, they showed greater confidence in their coping and appraised the situation to reflect this confidence.

Another similar study showed that each sub-factor of Trait EI promoted the use of adaptive coping strategies when faced with stress and negative emotions such as anger, sadness, fear, and shame (Mikolajczak, Nelis, Hansenne & Quoidbach, 2008). This study involved the examination of Trait EI in promoting the use of adaptive/maladaptive coping strategies in dealing with stress and in regulating negative emotions. All coping strategies were measured using the Cognitive Emotion Regulation Questionnaire (CERQ;

Garnefski, Kraaij, & Spinhoven, 2002). Adaptive coping strategies include: Acceptance (accepting stressful events as a part of life), refocus on planning (problem-solving), positive refocus (invoking pleasant thoughts to remove negative emotions), positive re-appraisal (changing the influence of a stressful event to invoke less negative emotions), and putting the problem into perspective (decreasing the severity of stressful events by comparing it to other events). Maladaptive coping strategies include: self-blame (focusing on how the self is at fault and unable to change events for the better), others-blame (placing others at fault for stressful events), rumination (continuous thoughts of stressors), and catastrophisation (continuous focus on the negative consequences of stressful events). Regression analyses using the TEIQue showed that high Trait EI promoted the use of adaptive coping strategies. More specifically, overall adaptive coping strategies were positively correlated with all four sub-factors of the TEIQue, with the highest correlations being with the well-being ($r = .51, p < .001$) and self-control ($r = .42, p < .001$) sub-factors. In addition, Trait EI promoted the use of adaptive coping strategies when experiencing negative emotions (anger, fear, jealousy and shame) as well as maintaining positive emotions. Overall, Trait EI is composed of multiple sub-factors that are related to effective coping of stressful events and negative emotions. All Trait EI sub-factors can contribute to addressing stressful situations effectively to regulate stress.

Interestingly, in light of the proposed study on procrastination in an Internet era, a recent study showed that EI was a significant predictor of addiction-related behaviors among young (age 13-15 years) and old adolescents (age 16-18 years), specifically in the areas of gambling, video games, and Internet usage (Parker, Taylor, Eastabrook, Schell &

Wood, 2008). These results were found from a sample of early- and late-adolescents using a battery of questionnaires including the Internet Addiction Questionnaire (IADQ; Young, 1998), the Problem Video Game Playing Scale (PVGS; Salguero & Moran, 2002), the South Oaks Gambling Screen-Revised (SOGS-RA; Winters, Stinchfield, & Fulkerson, 1993), and the youth version of the Emotional Quotient Inventory (EQ-i: YV; Bar-On & Parker, 2000). Results from a pathway analysis revealed that EI was a predictor of the aforementioned addictive behaviours among adolescents that accounted for 58% and 31% of the variance in these behaviours among young and old adolescents, respectively (Parker, Taylor, Eastabrook & Wood, 2008). As for specific components of the EQ-i, interpersonal EQ provided the highest negative correlations with problematic video gaming ($r = -.36, p < .05$), Internet use ($r = -.29, p < .05$), and gambling ($r = -.32, p < .05$). In addition, stress management was significantly correlated with problematic, video gaming ($r = -.15, p < .05$), Internet use ($r = -.27, p < .05$), and gambling ($r = -.16, p < .05$) as well. The remaining two EQ-i factors, intrapersonal EQ and adaptability, also provided significant, albeit lower, negative correlations with each of the addictive behaviours. Overall, the research has illustrated the importance of EI in predicting maladaptive behaviours among youth in an age of technological saturation.

Recent research has also examined the relationship between Trait EI and decisional conflict styles, how people deal with the uncertainty and emotional stress in making decisions (Janis & Mann, 1977 as cited by Di Fabio and Blustein, 2010). In a recent study, Di Fabio and Blustein (2010) assessed the relations between the factors EI using Bar-On's Emotional Quotient Inventory: Short version (EQ-i:S; Bar-On, 2002) and

the Melbourne Decision making Questionnaire (MDMQ; Mann, Burnett, Radford, & Ford, 1997) to examine the role of EI in predicting participants' decision making styles. The results indicated that the adaptability (reality testing, flexibility, and problem-solving) factor of Bar-On's EQ-i the best predictor of vigilance decision-making style, which involves careful consideration of goals and the actions needed to achieve them (Mann, Burnett, Radford, & Ford, 1997 as cited in Di Fabio and Blustein, 2010). In addition, the intrapersonal factor, which consists of emotional self-awareness and self-actualization, inversely predicts maladaptive decision making styles such as avoidance (avoiding the situation and placing responsibility on others) hyper-vigilance (impulsively adopting the first option that appears), and procrastination (postponing making a decision). This is important as it does show that emotional self-awareness can help people in making decisions in an efficient manner. Our emotions and our awareness of them can assist us in making tough choices that others avoid or postpone unnecessarily.

Trait Emotional Intelligence and Academic Performance

Literature on the relations between Trait EI and Academic performance suggest that Trait EI is a significant predictor of academic success. For example, Trait EI has been connected to academic success in high school (Parker et al., 2004) and the first year of post-secondary education (Parker, Summerfeldt, Hogan, & Majeski, 2004). In both studies, all five factors of Bar-On's (1997b; 2000) EQ-i model (interpersonal EQ, intrapersonal EQ, adaptability, stress management, and general mood) were shown to have significant positive relations with higher GPA. These studies underscore the importance of emotional competency in performing academic tasks. It is important to

have a high level of Trait EI to successfully overcome the stress of academic assignments and achieve a high final grade.

A recent study on the relation between Trait EI and academic performance focused on how Trait EI as well as the preference for intuition (making decisions based on emotional states) or deliberation (the use of deep thought) influenced the performance of a short-term academic task (Labrode, Dosseville, & Scelles, 2010). In this study, students were presented a 45-minute lecture followed by a multiple-choice exam based on the lecture. The Trait Emotional intelligence Questionnaire (TEIQue; Petrides & Furnham, 2003) and the Preference for Intuition or Deliberation (PID; Betsch, 2004) were given to participant after the exam. Affect was also measured before and after the exam using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1998). Results from the study showed that Trait EI predicted higher scores in the multiple choice exam as well as lower negative affect before and after the exam. Intuition predicted higher negative affect whereas deliberation predicted positive affect.

Overall, the studies reviewed above support the notion that having a high level of Trait EI is associated with achieving academic success in high school and university. Academics can be very stressful, as the expectations are rather high in completing assignments, exams, and oral presentations. Having a sense of emotional competency would be necessary in order to overcome the pressure and negative emotions related to studying.

Trait Emotional Intelligence and Health

Recent meta-analyses on the topic of EI has suggested that Trait EI is a plausible predictor of good mental, psychosomatic, and physical health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007; Martins, Ramalho, & Morin, 2010). In both studies, a selection of research articles consisting of EI (both ability and trait models) and health concerns (physical, mental, and psychosomatic) were collected and analyzed to examine the trends and relations between EI and health. Of course, the Martins, Ramalho, and Morin (2010) study is more comprehensive as it does consist of more measures and studies to analyze; thus it will be the primary focus of this section. The results are organized by EI measure and health concerns however mental health received the most coverage as there is little research on the relations between EI and physical and psychosomatic health. Results suggest that emotional intelligence measured as a trait is more associated with health than emotional intelligence as a cognitive ability. Moreover, the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009) has the highest association with mental health ($r = .50$) followed by Bar-On's (1997b; 2000) Emotional Quotient Inventory EQ-i ($r = .44$; Martins, Ramalho, and Morin, 2010).

Overall, the meta-analyses on the relations between EI and health suggest that Trait EI is a possible predictor of good mental health. This is an interesting result as it does support the idea of Trait EI as a measure of our perceived competency of using emotions to enhance well-being. Perhaps having a high level of Trait EI may help in reducing the level of behaviours that may be maladaptive or self-destructive in practice,

such as procrastination (Sirois, 2004b; 2007). However, thorough research on the factors of EI is necessary to examine how Trait EI predicts less procrastination.

Emotional Intelligence and Procrastination: The Thesis Project

As I have argued through a summary of the research literature, people experience negative emotions when faced with an aversive task, and this may lead to making mood repair a priority over engagement in the intended task. This focus on short-term emotional repair has been called “giving in to feel good,” and it is known to undermine the ability to control impulses when attempting to curb maladaptive behaviours such as gambling, alcohol abuse, and procrastination (Tice & Bratslavsky, 2000). I think that this is especially true of the rather mundane problem of procrastination, as it seems reasonable to seek the short-term benefits of mood repair in favour of the long-term reward of delaying gratification and completing the assigned task right now. Although it is may be reasonable to assume that a small delay would not hurt, it is this rather benign nature of procrastination that may lead to additional delays, missed deadlines and related negative consequences.

Considering that procrastination is primarily a problem of self-regulation, it seems that exerting more self-control would be a key component to reducing voluntary delay. However, self-control itself can be undermined in cases where repairing negative moods takes priority over distal goals. Even before self-control can be exercised, we must be able to recognize when we are “giving in to feel good,” and to recognize that such behaviour will only mask negative emotions as opposed to removing them. Knowing that

self-control is a sub-factor of Emotional Intelligence (EI), it seems that emotions play a vital role in regulating behaviour. At this stage, the level of self-control seems like an obvious relation between EI and procrastination. However, there are other sub-factors of EI, such as emotional perception from the emotionality sub-factor that may be related to procrastination. Given the benefits of EI in terms of using awareness of internal emotional states and stress management to cope more effectively, I argue that there is the potential for a negative relation between all sub-factors of EI and the breakdown in volitional action known as procrastination that we have yet to explore.

The purpose of my thesis project was to explore the relations between the components of EI and procrastination. To this end, I conducted two studies. The first study was a survey-based study involving self-report data to explore how the sub-factors of EI related to measures of procrastination (general, academic, and Internet). The second study was a quasi-experimental design that utilized a time-tracking computer application to explore the relations between the sub-factors of EI and participants' ability to stay on task and complete an English proficiency test in an experimental setting. For both studies, the EI measure was taken from the Trait EI model from Petrides and Furnham's (2003) current version of the TEIQue, as it measures the emotion-laden attributes that I think would best predict procrastination. As the research literature revealed, the sub-factors of this test seem to be best suited to measure the individual differences in Trait EI among high and low procrastinators.

The goal of the first study was to model the relations between the components of EI and procrastination using self-report data. A diagram of the hypothesized model for

this study is presented in Figure 1. Noting that procrastination is primarily a failure of self-regulation, it stands to reason that self-control is a vital component of EI to affect the frequency of procrastination. Comprised of the characteristics emotion regulation, stress management, and low impulsiveness, the self-control sub-factor of EI has the necessary characteristics of enduring with the negative emotions connected with aversive activities while staying on task. In addition, previous research has noted the relations between the self-control (stress management for the EQ-i) sub-factor and adaptive coping strategies (Mikolajczak, Nelis, Hansenne & Quoidbach, 2008) and reduced addiction behaviours (Parker, Taylor, Eastabrook & Wood, 2008). In other words, people high in the self-control sub-factor are more likely to use coping strategies that help in adapting to a situation and focus on completing a task. Such a strategy is contrary to the coping strategies used by procrastinators, who are not task-oriented (Flett, Blankstein, & Martin, 1995 as cited in Steel, 2007). For this reason, I hypothesized a significant negative correlation between the self-control component and procrastination.

I argued that reducing procrastination would involve an awareness of when we “give in to feel good,” which requires a better understanding of internal emotional processes. This is where the sub-factor of emotionality may be important psychologically, as emotion perception is a component of that sub-factor. In addition Di Fabio and Blustein (2010) indicated that the Intrapersonal sub-factor of the EQ-i:S is an inverse predictor of maladaptive decision conflict styles of which procrastination is considered as a decision-making style. In other words, people high in the Intrapersonal sub-factor of the EQ-i:S had a better understanding of their internal emotions and were

less likely to postpone an important decision. This is one of the first published studies documenting the relations between emotional awareness (from a model of Trait EI) and a form of procrastination. As such, I hypothesized a significant, yet smaller, negative correlation between emotionality and procrastination. The reasoning for this relationship stems directly from the component of emotionality known as emotion perception, where the awareness of the emotional states during the process of procrastination is likely to be explained. This awareness of emotional states may be instrumental in understanding the specious benefits of delaying an aversive task.

In addition to the hypotheses regarding the self-control and emotionality sub-factors, I also hypothesized positive relations between the well-being sub-factor of Trait EI and procrastination. This is based on the previous research from Mikolajczak, Nelis, Hansenne, and Quoidbach (2008) which showed that the well-being sub-factor had the highest relation with adaptive coping strategies. Given that higher self-esteem is related to coping with stressful events, I hypothesized that people high in this sub-factor would be able to cope with the negative emotions resulting from an aversive task. For example, people high in this sub-factor would be able to put a positive appraisal on their situation and are more likely to continue working. I also hypothesized a significant negative relation between the sociability sub-factor and procrastination. This hypothesis is based on the previous research from Parker, Taylor, Eastabrook, and Wood (2008) which showed that the interpersonal factor of Bar-On's EQ-i (1997b; 2000), a factor similar to the sociability factor of the TEIQue, was the largest predictor of maladaptive use of the Internet, gambling activities, and video games. It is a possibility that people high in this

sub-factor have the motivation to succeed in their tasks, but may also be aware that the implications of procrastination are not always directed towards the self. Procrastination is a behaviour that affects others (e.g., broken promises, unfulfilled obligations), so there is the potential that we may avoid procrastination to enhance our relations with other people.

As noted in the hypotheses, the focus is on the individual components of Trait EI as opposed to a global score. The reason for this focus is that a global score of Trait EI does not have the same explanatory power to reveal how Trait EI could reduce procrastination. For this study, the four Trait EI components (well-being, self-control, emotionality, and sociability) were the independent variables for this research. Although global scores and scores from individual characteristics are reported in the analyses, only the individual components are used for explaining what aspects of Trait EI are related to procrastination.

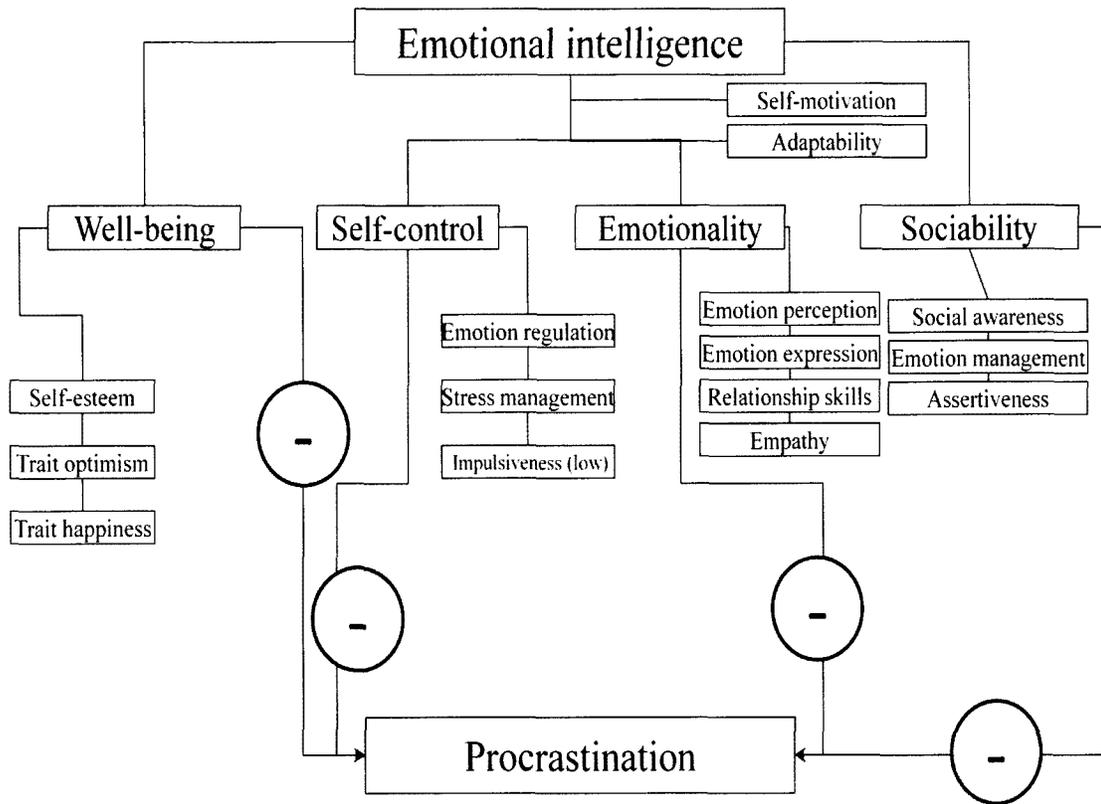


Figure 1: Hypothesized model for the current research

The goal for the second study was to examine the role of the sub-factors of EI on the time spent off-task in a quasi-experimental design. I based this study on research published by Thatcher, Wretschko, and Fridjhon (2008), who suggest that online chat, social networking and gaming are significant predictors of Internet procrastination. Internet procrastination is a relatively recent problem that has been addressed in many workplaces by means of using Internet applications such as *Rescuetime*, *Manictime*, and *Meetimer* that monitor the amount of time individuals spend on their computers and Internet applications that distract them from actual work. So, in the second study, I examined how much time people spent on distracting activities rather than on the assigned task in an experiment, and how this time off-task related to the components of

Trait EI. In sum, participants completed a relatively lengthy (ninety minute) academic reading-and-writing task (based on an English Proficiency test) on a computer while being monitored by the Internet application *Rescuetime*, which tracked how much time was spent working on the assigned task as well as time spent procrastinating during the course of the experiment. The dependent variables were procrastination as measured by the *Rescuetime* recording of time off-task, which is also measured via personal observation, and the overall quality of the writing tasks. The independent variable in this experiment was the EI self-report scores, with special attention paid to the sub-factors of the Trait EI test.

Considering the research from Coker (2009), it was difficult to predict if the sub-factors of EI would correlate negatively with time off-task, but I assumed that even people who scored high on the self-control sub-factor may require time off to refresh their concentration abilities. Recall that Coker found that office employees who had the opportunity to surf the Internet were about nine percent more productive than employees that did not (either by choice or company mandate) browse the Internet. Coker also noted that the rise in productivity stemmed from short “e-breaks” that were taken throughout the day which helped workers to refresh their concentration, whereas prolonged or excessive “e-breaks” were detrimental to productivity. As such, it is possible that people high in the emotionality sub-factor would be able to be aware of when they are using the Internet to refresh themselves, or abusing the privilege of having the Internet in the workplace. Conversely, people who multi-task on the computer (i.e., watch a video while working on an assignment) are more likely to have difficulty in parsing out distracting

materials and focus on their assigned tasks (Ophir, Nass & Wagner, 2009). As such, it is possible that people that do decide to take breaks may be unable to work beyond the distraction once the break is over. Given these findings, it may be that even people high on the self-control sub-factor of Trait EI may take short “e-breaks” by using the online programs available, but I hypothesized that low scores in all Trait EI sub-factors would be associated with longer times off-task and more breaks taken.

As for the overall quality of the academic task, I hypothesized that people high in the sub-factors of Trait EI would have higher scores in the English proficiency test than people low in Trait EI. This hypothesis is based on the Laborde, Dosseville, and Scelles (2010) study, which showed that Trait EI predicts higher scores in a short-term academic task. High Trait EI could prove beneficial in dealing with the stress of completing an academic task with little preparation completed beforehand.

For the purposes of this thesis project, EI was operationalized as a constellation of emotion-laden characteristics instead of a singular construct. What this means is that my focus was on the individual scores for each EI sub-factor instead of a global score, which combines all sub-factor data to make a single score. Although emphasizing global scores of a scale can assist researchers in avoiding debates of factor structure, there is a loss of explanatory power in the results (Petrides, Perez-Gonzalez, & Furnham, 2007). For both studies, I was less interested in global scores of the EI construct than I was in the relation of specific sub-factors to procrastination.

STUDY 1

Methods

Participants

The participant sample for this study was composed of a sample of 125 undergraduate students (104 female, 21 male; 73 Caucasian, 11 African, 12 Asian, 10 Indian, 2 Hispanic, 17 declined to provide race) in the Carleton University Psychology program. The ages for the participant sample had a range between 18 and 53 years, with a mean age of 22.55 years ($SD = 5.51$). The participants were spread out in terms of their current year in their respective academic programs: 23 in their first year; 41, in their second year; 36 in their third year, and 23 in their fourth year. Only two participants declined to provide their current year in the university. All participants were enrolled in the first- and second-year psychology courses (PSYC 1001/1002 and PSYC 2000/2001) and received one-half (0.5%) percentage in course credit for their participation in the study. Participants were recruited via the department's SONA system, an online service provided by the department to conduct research.

Procedure

Upon accessing the proposed study through the SONA system, students were introduced to the study from the consent form, which had the details and instructions for the study (See Appendix A). If the terms were acceptable to the students and they had given their consent to participate, they were then navigated to the next page of the study, which allowed them to provide their demographic information and complete the

questionnaires. Participants had the option to skip any question they felt uncomfortable answering. Once the questionnaires were completed, the participants were debriefed on the purpose of the study and the author's contact information was provided if they had any questions about the study (see Appendix G).

All data pertaining to the Trait Emotional Intelligence Questionnaire (TEIQue) was then sent to Dr. Kevin Petrides from University College London to develop the global and sub-factor scores of Trait EI. There are currently no scoring manuals available for the TEIQue, making it necessary to send the test data to Dr. Petrides to score free-of-charge.

Measures

General Procrastination Scale (GPS). The GPS is a 20-item, self-report measure used to measure the participants' global level of procrastination on general life tasks (see Appendix B). In this scale, participants are asked to report on a 5-point Likert-type scale ranging from 1 ("*Extremely Uncharacteristic*") to 5 ("*Extremely Characteristic*"), the degree to which a given action is characteristic of them. The items of the scale are arranged in that ten items involve procrastination behaviours ("*I generally delay before starting on work I have to do*", "*In preparing for some deadline, I often waste time by doing other things*") and ten items that are reverse scored that involve completing tasks promptly ("*I usually make decisions as soon as possible*", "*I usually accomplish all the things I plan to do in a day*"). A high score in this scale suggests that the individual generally procrastinates often.

Research using the GPS has shown it to have a Cronbach Alpha of .82 (Lay, 1986, $N = 76$) as well as a test-retest reliability of .80 (Ferrari, 1989). In terms of validity, the initial Lay (1986) study used three separate experiments in which, the GPS was sent to participants along with other scales. High procrastinators were shown to return the scales later than low procrastinators and reported spending more time on tasks that are visible to others and less time on important daily tasks. Previous research (Schouwenburg & Lay, 1995) has shown a significant negative relation between GPS scores and the conscientiousness factor of the NEO Personality Inventory ($r = -.67$; Costa & McCrae, 1992) as well as a positive correlation with the neuroticism factor ($r = .34$). In addition, Lay and Scouwenbourg (1993) found significant negative correlations between scores of the GPS and the mechanics (planning tasks; $r = -.38$), setting goals ($r = -.45$), and control of time ($r = -.64$) subscales from Macan, Shahani, Dipboye, and Phillips' (1990) time management measure as well finding that procrastinators were more likely to engage in dilatory behaviour. For this study, the GPS yielded a Cronbach's alpha of 0.83 ($N = 125$).

Procrastination Assessment Scale for Students (PASS). For this study, a modified version of the PASS (Solomon & Rothblum, 1984) was used to measure the extent of academic procrastination (see Appendix C). This modified version consisted of 18 items to measure the participants' reported emotions attached to their procrastination on specific academic tasks. Each item is scored on a 5-point Likert-type scale, with each point representing a level of prevalence of procrastination on a given academic task ("a" = "not a problem" to "e" = "always a problem"). The structure of the 18 items is split up

into six distinct sections, each focusing on a task that is common to the college or university experience: Writing a term paper, studying for exams, keeping up with weekly reading assignments, academic administrative tasks (applying for funding, registering for courses), attendance tasks, and school activities in general (purchasing books/supplies for class). Each section is comprised of three questions dealing with the frequency of procrastination on the specific task (“a” = “*never procrastinate*” to “e” = “*always procrastinate*”), the level to which the procrastination is a problem (“a” = “*not a problem*” to “e” = “*always a problem*”), and the level of intention to change the behaviour to resolve the procrastination problems (“a” = “*do not want to change*” to “e” = “*definitely want to change*”). Total scores for the PASS were calculated by summing the totals of the frequency and anxiety (how often the procrastination is considered a problem) sections. High scores in the PASS indicate that the student participant views procrastination as a frequent, problematic behaviour. In terms of reliability, Ferrari (1989) reported a test-retest reliability of .74 for Part 1 of the PASS (i.e., the prevalence of procrastination). In terms of validity, Solomon and Rothblum (1984), found a positive correlation between delaying in completing taking self-paced (take-at-home) quizzes in an introductory psychology course and self-reported procrastination frequencies in writing a term paper ($r = .24, p < .001$), studying for an exam ($r = .19, p < .05$), and keeping up with assigned readings ($r = .28, p < .001$). Reliability testing for this scale resulted in a Cronbach’s alpha of 0.84 ($N = 125$), in this study.

Online Cognition Scale (OCS). The OCS (Davis, Flett, & Besser, 2002) is a 36-item questionnaire that measures problematic Internet use (see Appendix D). All items

are scored on a 7-point Likert scale ranging from 1 (“*Completely disagree*”) to 7 (“*Completely agree*”). The OCS is split into four separate factors that measure maladaptive cognitions about the Internet: Social comfort (“*I am most comfortable online.*”), loneliness/depression (“*I am less lonely when online*”), diminished impulse control (“*I use the Internet more often than I ought to.*”), and distraction (“*I sometimes use the Internet to procrastinate.*”). For purposes of this study, I focused on the diminished impulse control and distraction factors, as they are the most relevant to my research in self-regulation and procrastination. High scores in the impulse control factor indicate a high level of Internet addiction. High scores in the distraction factor indicate that the participant procrastinates using the Internet. In terms of reliability, the OCS showed significant internal consistency for the scale total scale as a measure of problematic Internet use ($N= 211$, $\alpha = .94$) as well as significant alpha coefficients ranging from 0.50 to .079 from diminished impulse control, and 0.55 to 0.80 for distraction (Davis, Flett, and Besser, 2002). In regard to validity, Davis, Flett and Besser showed a positive correlation between the Procrastinatory Cognitions Inventory (PCI, Stainton, Lay, & Flett, 2000) and the diminished impulse control ($r = .55, p < .01$) and distraction ($r = .62, p < .01$) factors of the OCS. Reliability testing showed Cronbach alphas of 0.87 ($N = 125$) for diminished impulse control and 0.79 ($N = 125$) for the distraction sections.

Internet Procrastination Questionnaire (IPQ). For this study, a 20-item questionnaire was designed to measure the extent of procrastination on computer based or Internet activities (see Appendix E). This scale places an emphasis on self-reported work

and procrastination habits when using the computer and the Internet. The twenty items are scored on a 7-point Likert scale ranging from 1 (*“Completely disagree”*) to 7 (*“Completely agree”*). Items cover participants’ behaviour on the Internet (*“Once I start surfing the Internet, I find it hard to stop* and *“I often take longer-than-expected breaks in my work to check my email”*). There are also items that are reverse scored, which describe situations that self-control is exerted when on the computer (*“When I’m working, I use the Internet only for assistance on my assigned task”*). High scores on the Internet Procrastination Questionnaire indicate that the participant procrastinates using the computer/Internet often.

As this was the first study to utilize the Internet Procrastination Questionnaire (IPQ), analyses were necessary to test the internal consistency of the scale. Reliability analysis showed that the IPQ had a Cronbach’s alpha of .883 ($N = 125$). In addition, scores from the IPQ were significantly related to the diminished impulse control ($r = .60, p < .01$) and distraction sections ($r = .66, p < .01$) of the Online Cognition Scale (OCS), a scale dealing directly with Internet usage and the potential loss of control while logging in to the Web. Scores from the IPQ were also significantly related with scores from the General Procrastination Scale (GPS; $r = .42, p < .01$) and the total scores of the Procrastination Assessment Scale for Students (PASS; $r = .33, p < .01$), the scales that are used for measuring general and academic procrastination. For further information on this analysis, Appendix H provides the total mean, standard deviations, and item-total correlations of each item in the IPQ.

Trait Emotional Intelligence Questionnaire (TEIQue). The Trait Emotional Intelligence Questionnaire (Petrides & Furnham, 2003) is a self-report questionnaire that consists of 153 items that measure the level of the participants' Trait EI (See Appendix F). All questions are rated on a 7-point Likert scale ranging from 1 ("*completely disagree*") to 7 ("*completely agree*"); a score of 4 indicates a neutral response. The TEIQue is comprised of fifteen different components. However, the components can also be categorized into the following four sub-factors: Well-being (e.g.: "*I generally believe things will work out fine in my life*"), self-control ("*I usually find it difficult to regulate my emotions*"), emotionality ("*Expressing my emotions with words is not a problem for me*"), and sociability ("*I can deal effectively with people*"). There are also two characteristics, self-motivation and adaptability, that are not aligned to any particular sub-factor. However, these characteristics do contribute to the global TEIQue score. High scores in the TEIQue indicate a high level of emotional intelligence and confidence to effectively acknowledge and utilize emotions.

In regard to the reliability of the test, the sub-scales of the TEIQue were shown to be globally normally distributed and reliable (Mikolajczak, Luminet, Leroy, & Roy, 2007; $N = 740$). As for the individual components, recent studies have shown alpha coefficients of 0.83 for well-being, 0.79 for self-control, 0.78 for emotionality, and 0.81 for sociability ($N = 1624$, Petrides, 2006). The TEIQue also shows good construct validity as it does have a significant negative correlation to scores from the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994), a test of alexithymia; a

disorder related to emotional intelligence that is defined as the difficulty in identifying and describing emotions (Mikolajczak, Luminet, Leroy, & Roy, 2007).

Results

As stated earlier, the purpose of this study was to examine the relations between procrastination (general, academic, and online) and the sub-factors of Trait Emotional Intelligence. To this end, I compiled data from test of emotional intelligence as well as scales measuring procrastination in academics, on the Internet, and in general tasks. Using multiple scales of procrastination allowed me the opportunity to examine how the components of Trait EI are related to procrastination in multiple tasks/situations.

At the beginning of the analysis, I examined the correlations of the sub-factors of Trait EI with general, academic and Internet procrastination. The results are presented in Table 4. As we can see from this table, self-control is the only sub-factor related to both general ($r = -.24, p < .01$) and academic ($r = -.20, p < .05$) procrastination scores. However, it is also important to note that academic procrastination is also related to the well-being sub-factor ($r = -.22, p < .05$). In addition, the results from the correlation matrix revealed that the TEIQue factors are more associated with procrastination, distraction, and diminished impulse control involved with the Internet. Emotionality was significantly related with the IPQ ($r = -.20, p < .05$) as well as the diminished impulse control ($r = -.39, p < .01$), and Internet distraction ($r = -.24, p < .01$) sections of the OCS. Well-being also showed significant relations with the IPQ ($r = -.18, p < .05$), diminished impulse control ($r = -.24, p < .01$) and distraction ($r = -.24, p < .01$). In addition,

sociability showed significant relations with both diminished impulse control ($r = -.26, p < .01$) and distraction ($r = -.23, p < .01$). Interestingly, the self-control sub-factor was only significantly related with the OCS distraction section of the OCS ($r = -.22, p < .05$). In sum, this analysis differed from the previous one involving academic and general procrastination in that Trait EI components such as emotionality and sociability, components that were not related with these types of procrastination, are related with Internet procrastination.

Table 4: Relations between TEIQue sub-factors and general, academic, and Internet procrastination

	GPS	PASS	DIC	D	IPQ	WB	SC	E	S
General Procrastination (GPS)		.46**	.24**	.45**	.42**	-.16	-.27**	-.17	-.12
Academic Procrastination (PASS)			.14	.29**	.33**	-.22*	-.20*	-.03	.02
Diminished impulse control (DIC)				.60**	.60**	-.24**	-.13	-.39**	-.26**
Distraction (D)					.66**	-.24**	-.22*	-.24**	-.23*
Internet procrastination (IPQ)						-.18*	-.17	-.20*	-.07
Well-being (WB)							.33**	.57**	.50**
Self-control (SC)								.20*	.16
Emotionality (E)									.61**
Sociability (S)									

Notes. $n = 125$ * $p < .05$ ** $p < .01$

To further explain the relations between the Trait EI sub-factors and procrastination as a whole, I conducted principal component analysis on three total scale scores of procrastination (PASS, GPS, and IPQ). The analysis led to one factor with an Eigen value greater than one. Furthermore, the inspection of the scree-plot also demonstrated a one-factor solution. This factor explained 60.3% of the total variance for principal component analysis. As such, this factor was used as a combined procrastination score, encompassing general, academic, and Internet procrastination into one comprehensive variable for further correlation and regression analyses.

Correlation analysis was also conducted to test the relations between the sub-factors of Trait EI and the total procrastination variable (consisting of the PASS, GPS, and IPQ) created during the principal component analysis. The results showed that total procrastination was related with only the well-being ($r = -.24, p < .01$) and self-control ($r = -.28, p < .01$) Trait EI sub-factors of the TEIQue. Although both Trait EI components had a significant negative relations with Internet procrastination, emotionality and sociability were not related to procrastination as a whole in this study.

A correlation analysis was also conducted using all fifteen characteristics of the Trait EI model. Of the fifteen characteristics, seven showed significant negative correlations with total procrastination. The characteristics related to procrastination are as follows: self-esteem ($r = -.30, p < .01$), emotion expression ($r = -.19, p < .05$), self-motivation ($r = -.47, p < .01$), low impulsivity ($r = -.39, p < .01$), emotion perception ($r = -.25, p < .01$), optimism ($r = -.20, p < .05$), and adaptability ($r = -.19, p < .05$). Of these characteristics, two are from the well-being sub-factor (self-esteem and optimism); one is

from the self-control sub-factor (low impulsivity); two are from the emotionality sub-factor (emotion perception and emotion expression); and two are not associated with any Trait EI sub-factor (self-motivation and adaptability). Sociability does not have any characteristics related with overall procrastination. The full table that includes all fifteen sub-factors and their relation to total procrastination is presented in Table 5.

Table 5: Relations between total procrastination and fifteen characteristics of Trait EI

	<i>TP</i>	<i>SE</i>	<i>EEX</i>	<i>SM</i>	<i>ER</i>	<i>H</i>	<i>E</i>	<i>SA</i>	<i>LI</i>	<i>EP</i>	<i>SMA</i>	<i>EM</i>	<i>O</i>	<i>R</i>	<i>A</i>	<i>AS</i>
<i>TP</i>	-	.30**	-.19*	-.47**	.14	-.16	.03	-.14	-.39**	-.25**	-.13	.10	-.20*	-.14	-.19*	-.15
<i>SE</i>		-	.43**	.61**	.11	.63**	.19*	.56**	.22*	.46**	.24**	.34**	.63**	.37**	.22*	.53**
<i>EEX</i>			-	.28**	-.05	.43**	.46**	.59**	.09	.54**	.02	.42**	.46**	.44**	.19*	.47**
<i>SM</i>				-	.06	.51**	.14	.37**	.49**	.39**	.17	.18*	.51**	.32**	.24**	.43**
<i>ER</i>					-	.22*	.15	.16	.21*	.22*	.68**	-.03	.22*	.09	.41**	-.02
<i>H</i>						-	.32**	.48**	.17	.36**	.34**	.29**	.80**	.52**	.32**	.40**
<i>E</i>							-	.47**	.18*	.54**	.14	.54**	.34**	.51**	.43**	.23*
<i>SA</i>								-	.19*	.56**	.25**	.71**	.43**	.44**	.24**	.75**
<i>LI</i>									-	.23*	.29**	.09	.17	.16	.29**	.09
<i>EP</i>										-	.20*	.42**	.44**	.48**	.27**	.41**
<i>SMA</i>											-	.08	.33**	.11	.49	.16
<i>EM</i>												-	.24**	.30**	.19*	.59**
<i>O</i>													-	.51**	.32**	.36**
<i>R</i>														-	.22*	.24**
<i>A</i>															-	.12
<i>AS</i>																-

Notes. $n = 125$ * $p < .05$ ** $p < .01$. TP = Total procrastination, SE = Self-esteem, EEX = Emotion expression, SM = Self-motivation, ER = Emotion regulation, H = Happiness, E = Empathy, SA = Social awareness, LI = Low impulsivity, EP = Emotion perception, SMA = Stress management, EM = Emotion management, O = Optimism, R = Relationships, A = Adaptability, AS = Assertiveness.

A linear regression analysis was conducted using the same variables, with the results presented in Table 6. For this analysis, all four components were entered at the same time, as there was no need to control for certain components from a theoretical perspective. This was an exploratory study to examine the influences of all four Trait EI components. The regression model showed that only self-control significantly predicted total procrastination ($t = -2.41, p < .05$).

Table 6: Regression model predicting procrastination using Trait EI sub-factors

	β	t	p	r	$r_{partial}$	r_{part}
Constant		3.18	.00			
Well-being	-.16	-1.42	.16	-.24	-.13	-.12
Self-control	-.22	-2.41	.02	-.28	-.22	-.21
Emotionality	-.10	-.86	.39	-.18	-.08	-.07
Sociability	.10	.92	.36	-.08	.08	.08

Table 7 presents the regression model summary for this study. As evidenced in this regression, the components of Trait EI account for for approximately eleven percent of the total variance ($R^2 = .11, p < .01$). With self-control as the only significant predictor of procrastination, it stands to reason that it would be the component that contributes the most variance accounted for in this model. Overall, the regression model is significant, but there is a proportion of the total variance unaccounted that is not explained by Trait

EI. Nevertheless, the results do suggest that self-control is a significant predictor of procrastination.

Table 7: Regression model summary in predicting procrastination via the sub-factors of Trait EI

<i>Model</i>	<i>R</i>	<i>R</i> ²	<i>Standard error</i>	<i>p</i>
1	.33	.11	.96	.01

Independent variables: Self-control, emotionality, well-being, sociability

Dependent variable: Total procrastination

Discussion

The results of Study 1 underscore the importance of self-control in our understanding of procrastination and support the notion of procrastination as self-regulation failure, as self-control was the only factor to predict overall procrastination (general, academic, and Internet combined). However, it is also important to note the relations between the components of Trait EI and individual forms of procrastination. First, self-control was the only component that had a significant negative relation lower general procrastination. Second, both well-being and self-control had significant negative relations with academic procrastination. Finally, all components of Trait EI were to some extent significantly and negatively related with measures of Internet procrastination. This discussion first addresses the role of self-regulation failure and the importance of self-control as a predictor of procrastination. This is followed by an explanation of the relations between well-being and academic procrastination. Next, Internet procrastination and its relations to multiple components of Trait EI are addressed.

Finally, the discussion ends with a summary of the limitations of the study and future directions for research.

Self-control and self-regulation failure

Theoretically, as depicted by Hall and Fong (2007), procrastination can be seen as one outcome, among many, of Temporal Self-Regulation Theory. This theory postulates that behaviour that is in line with our long-term goals and aspirations is reliant upon the interplay of multiple factors including our internal biological, social, and cognitive characteristics. Temporal Self-Regulation Theory consists of three key characteristics: Our self-regulatory capacity (otherwise known as executive functioning), the social cognitive values (how the current behaviour is connected to our goals), and our evaluation of the temporal placement of the outcomes of our behaviour (the proximity of costs and awards; Hall & Fong, 2007). For example, a procrastinator may show a low self-regulatory capacity and would be more likely to choose short-term gains over long-term goals as the benefits of habitual behaviour are closer in proximity and provide short-term feelings of satisfaction. Given this theoretical understanding of self-regulation, it is not surprising to see that procrastination is related to the lack of self-control to override habitual responses. Temporal Self-Regulation Theory also supports the research of Muraven, Tice, and Baumeister, (1998), who argued that our self-regulatory capacity is like a muscle; the more self-control is exerted, the more likely we will exhaust this capacity, and we will give into our impulses. Both theories acknowledge the necessity of a self-regulatory capacity to regulate behaviour. Overall, these studies suggest that our ability to self-regulate is limited by our self-regulatory capacity required to exert self-

control. If we do not have the resources needed to exert self-control, habitual responses would take over.

Academic Procrastination

One of the interesting results is that the component of EI known as well-being was negatively associated with academic procrastination. I think there are three explanations for these findings. The first explanation focuses on the relations between the factors of Trait EI and the use of adaptive coping strategies. As I noted earlier, the well-being sub-factor of Trait EI was shown to be associated with the reported use of adaptive coping strategies (Micolajczak, Nelis, Hansenne, & Quoidbach, 2008). Furthermore, the same study also suggested that people high in Trait EI were more likely to experience less negative emotions such as sadness, anger, fear, jealousy, and shame. These people can also maintain positive emotions for longer periods of time. This is important as these emotions are related to periods of stress, such as when trying to complete a university degree. This is in contrast to the tasks involved in the general procrastination scale, which are unlikely to cause significant amounts of stress. People high in Trait EI were also more likely to handle their stress constructively, instead of feeling overwhelmed by their problems. Such findings are applicable to the current research in that completing academic tasks to gain a university degree can be a very stressful period in students' lives. Students can either find constructive methods to counter the stress and maintain positive emotions, or get overwhelmed by the expectations and workload attached with academic work. If students procrastinate, it is likely that the method chosen to deal with stress is not adaptive and would likely cause

more negative emotions in the future. As such, the tasks in an academic setting carry more emotional weight than the tasks listed in general procrastination, making it likely that a heightened sense of happiness and fulfillment would be necessary to continue working effectively.

The second possible explanation for the relation between the well-being component and academic procrastination is that students who procrastinate tend to report higher anxiety in their school year (Tice & Baumeister, 1997). Students who procrastinated during the school year reported more stress and anxiety in the later parts of the school semester. In other words, these students felt worse in the later stages of their school year and reported higher overall stress. As previously stated, procrastinators tend to favour short-term mood repair over long-term rewards, or “give in to feel good” when faced with an aversive task (Tice & Bratslavsky, 2000). In academics, such behaviour is often met with missed deadlines, decreased work quality, and low final grades; resulting in more stress and negative emotions. It is possible that students who report *low* academic procrastination are likely to have an enhanced sense of emotional well-being as they would be able to avoid potential stress and negative emotions by completing their work in a timely manner.

The third and final possible explanation for the relation noted between the well-being component or EI and academic procrastination is that procrastination and the poor performance that results from such behaviour can negatively affect our sense of identity and self-efficacy (Steel, 2007). When students procrastinate, they run the risk of sacrificing the quality of their work. As a result, these students are likely to have lower

assignment or exam grades, or a lower overall GPA. This may cause significant stress and anxiety, as well as foster a lower sense of self-efficacy in performing academic tasks. People high in the well-being Trait EI component report high self-esteem, and in all likelihood feel confident in their school work and achieve high grades. In contrast, academic procrastinators often have lower GPA (Steel, 2007), which could adversely affect their confidence in completing the school year with favourable grades.

Overall, these three explanations are plausible accounts of how the well-being component of Trait EI is potentially related with low procrastination scores. Students high in the well-being component may cope with stress more effectively, report less anxiety, or feel more confident in their role as a student. The tasks involved in students' academic career carry more emotional weight than general tasks, thus making a high sense of well-being necessary to experience less procrastination and its negative effects. Interestingly, the well-being component was also related to Internet procrastination, along with other Trait EI components such as emotionality and sociability.

Internet procrastination

The results of the study revealed an interesting pattern of relations between the components of Trait EI and Internet procrastination. What was most interesting about these results was that all four components of Trait EI (well-being, emotionality, sociability, and self-control to a lesser extent) were negatively related with the scales of Internet procrastination. We have previously noted the involvement of well-being was related to academic procrastination, but now emotionality and sociability also come into

play in the relations with Internet procrastination. This may explain why Internet procrastination is problematic, because it is related to more components of Trait EI. Internet procrastination is associated with emotionality, which is a Trait EI component that describes our reported self-efficacy in dealing with internal emotional states. Lacking the awareness of internal emotional states may explain how excessive Internet use is an addictive and problematic behaviour. Such an idea is supported in the Parker, Taylor, Eastabrook, Wood (2008) study, in which multiple components of the EQ-i (including interpersonal, intrapersonal, adaptability, and stress management) were associated negatively with problematic Internet use. It is possible that surfing the Internet is a behaviour that is addictive and would require us to be aware of our emotions in order to counter the addictive qualities of Internet procrastination. However, more research is needed in order to explore this speculation.

Limitations and conclusions

There was one notable limitation for the current study, that being the difficulty in comprehensively measuring Internet procrastination using self-report data. Considering that the Internet is comprised of numerous activities with new websites and “apps” added everyday, it is difficult to ensure that the self-report is applicable to all users. Individuals tend to use the Internet for different reasons, so it would be challenging to ensure that all Internet related distractions are represented on the scales. However, I think that the activities included in the Internet Procrastination Questionnaire (IPQ) reflect the Internet habits and websites that a majority of students use to procrastinate on the Web. The emphasis on video streaming and social networking are common among students and

would seem like that likely methods that students would use to the Internet to procrastinate.

Despite limitations inherent in any research based on self-report, the current study does make a contribution to the literature, as it is the first study to my knowledge of the relation between EI and procrastination. Overall, the results indicated that self-control is a key individual difference variable, with the remaining three components (well-being, emotionality, and sociability) playing additional roles in explaining procrastination. However, I utilized self-reports on everyday goals and behaviours in this study. No actual behaviour is measured, leaving it uncertain as to whether the components of EI would present themselves in predicting whether or not people would stay on task while working on an actual project. This was the primary reason for the next study which examines the effects of the Trait EI in an experimental task.

STUDY 2

Methods

Participants

The sample for this study consisted of 22 students (15 female, 7 male; 13 Caucasian, 3 Indian, 2 Asian, 3 declined to indicate race) enrolled at Carleton University. The ages of the student sample had a range of 19-50 years of age, with a mean age of 23.91 years ($SD = 6.70$). The participants were recruited via posters distributed throughout campus and via Carleton University's SONA system for PSYC 1001/2 and 2001/2 students to book an appointment. More advertising for the study was done though

the Carleton University's unofficial *Facebook* page, which posts any messages by users that have the words Carleton University in their posts. A student volunteer, Talib Karamally, also assisted in recruiting participants by distributing flyers to fellow students and co-workers. All participants had a one-in-eight chance to win one-of-two \$50.00 (fifty dollar) cash prizes for their participation in the study. Students in the PSYC 1001/2 and 2001/2 courses were given the option of receiving 1.5% credit in their respective classes in lieu of an entry in the draw for the fifty dollar prizes. Six of the participants exercised this option and chose the 1.5% credit over the draw entry.

Procedure

Recruitment was done via posters that had the author's contact information and a short summary of the study (see Appendix I). These posters were approved by the University's communication department and were distributed across campus. An advertisement for the study was also posted on Carleton University's *Facebook* page. Interested students responded to the poster by sending me an e-mail to make an appointment to participate in the study. Students that had access to Carleton University's SONA system also had the option to schedule appointments via the website.

Upon arriving at the research room by individual appointments, the students were seated at a workstation. Informed consent was completed first, as it was the first article placed upon their work package in the workstation. The station consisted of a series of news articles provided by the Canadian Academic English Language Test (CAEL) and a computer to complete the assigned tasks. After the informed consent was signed, the

participants were instructed that the experiment was a test of their reading comprehension and writing skills. In the experiment, the students were asked to read an article selected by CAEL, which focused on one of two topics: Professional ethics or genetically modified food. This was followed by a short questionnaire that tested the students on specific ideas and themes of the news article (e.g., *Why would business schools not make ethics education a priority? How does the reading define genetic modification?*). After the questionnaire was finished, the students were asked to complete a one-page essay based on the following topics: *The advantages of teaching professional ethics outweigh the disadvantages* OR *The advantages of genetically modified foods outweigh the disadvantages*. From this sample, ten participants completed the CAEL test with the professional ethics topic and twelve completed the test with genetically modified foods as the topic. Participants had the option of completing the questionnaire and essay on paper, on the computer, or by a combination of the two.

All participants were instructed that the process would take about ninety-minutes to complete. Given the length of the task, the participants were advised that they could take small “e-breaks” during the testing period by surfing the Internet on the computer. The workstation computer had multiple applications, such as *Internet explorer*, *Facebook*, *My Carleton*, *twitter* and *YouTube*, open in the event that participants wished to take a small “e-break.” All the instructions were scripted and the wording of the instructions was crafted not to encourage taking breaks (see Appendix P), but to advise participants that the option to take breaks was available if they needed to refresh

themselves or their concentration. Once the instructions were given to the participants, the author left the room to provide the privacy needed to complete the task.

During the ninety-minute period, participants were monitored by two methods. The first method was from the time-tracking program, *Rescuetime*, which recorded the time-spent on the Internet and computer applications. Time is accurately recorded by the second on the program/website currently in use. The second method by which participants were monitored was personal observation. This was done through a two-way mirror in the lab, which allowed the author to observe participants and account for time spent off-task that did not involve computer use. Observations were done in five-minute intervals during the entire ninety-minute testing period. In cases where participants were not on-task, the author marked that the participant was off-task and indicated the activity in the comments section. Observed breaks were given an approximate time duration based on when the off-task activity was observed and when the student went back to work. The use of personal observation helped in accounting for breaks that did not involve the use of the computer and were not recorded by *Rescuetime* as well to monitor the progress of participants who opted to complete the CAEL on paper. Breaks were recorded when participants were observed as engaged in activities that were unrelated to the assigned task or when *Rescuetime* recorded a computer/online activity that was over thirty seconds. At the end of the study session, the amount of time off-task (recorded from *Rescuetime* and manual observation) and the number of breaks were calculated and recorded for analysis.

Once the essay was completed, the participants were given the Procrastination Assessment Scale for Students (PASS, see Appendix C) and the Trait Emotional Intelligence Questionnaire (TEIQue, see Appendix F). Upon completion of the questionnaires, the participants were de-briefed on the true purpose of the experiment, that being to record their time off-task on an academic task (see Appendix R-S). After the de-briefing was completed, the participants were given the option to exclude their data from analysis or to release the data for use by signing an additional consent form that details the true purpose of the study (see Appendix J). All participants were compensated for their time (either by receiving course credit or an entry in the draw) regardless of whether their data was used or not. Copies of all consent forms used in the study and a debriefing summary were given to the participants upon leaving the laboratory.

All essays were scored on overall quality by a member of Carleton University's Psychology department faculty. Each essay was scored on a 100-point scale based on the overall quality of the communication in answering the question posed for the test. The questionnaire activity provided by CAEL was evaluated by the author using the answer key provided by the CAEL staff (see Appendices M-N) and was scored on a 34-point scale. As with the previous study, all TEIQue data were sent to Dr. Kevin Petrides for global and sub-factors scores. A cash prize of fifty-dollars was awarded to two participants who are chosen through a random draw. The students who opted to receive course credit were granted the credit upon completion of the study.

For this study, I examined a number of variables. The independent variables were the scores from the TEIQue and Procrastination Assessment Scale for Students PASS,

which were distributed once the participants' completed the essay. The first dependent variable for this study was the time-spent off-task and the number of breaks taken during the completion of the CAEL, as recorded by *Rescuetime* and personal observation via the two-way mirror. The second independent variable was the total test scores from the CAEL, as I was interested in observing how the factors of EI and academic procrastination related to the total scored on a CAEL proficiency test.

Measures

Procrastination Assessment Scale for Students (PASS). A modified version of the PASS (Solomon & Rothblum, 1984) was once again used to measure the extent of academic procrastination (see Appendix C). This modified version consisted of eighteen items to measure the participants' reported emotions on their procrastination on specific academic tasks. Each item is scored on a 5-point Likert-type scale, with each point representing a level of prevalence of procrastination on a given academic task ("a" = "not a problem" to "e" = "always a problem"). The structure of the eighteen items is split up into six distinct sections, each focusing on a task that is common to the college or university experience: Writing a term paper, studying for exams, keeping up with weekly reading assignments, academic administrative tasks (applying for funding, registering for courses), attendance tasks, and school activities in general (purchasing books/supplies for class). Each section is comprised of three questions dealing with the frequency of procrastination on the specific task ("a" = "never procrastinate" to "e" = "always procrastinate"), the level to which the procrastination is a problem ("a" = "not a problem" to "e" = "always a problem"), and the level of intention to change the

behaviour to resolve the procrastination problems (“*a*” = “*do not want to change*” to “*e*” = “*definitely want to change*”). Total scores for the PASS were calculated by summing the totals of the frequency and anxiety (how often the procrastination is considered a problem) sections. High scores in the PASS indicate that the student participant views procrastination as a frequent, problematic behaviour. In terms of reliability, Ferrari (1989) reports test-retest reliability of .74 for Part 1 of the PASS (i.e., the prevalence of procrastination). In terms of validity, Solomon and Rothblum (1984), found a positive correlation between delaying in completing taking self-paced (take-at-home) quizzes in an introductory psychology course and self-reported procrastination frequencies in writing a term paper ($r = .24, p < .001$), studying for an exam ($r = .19, p < .05$), and keeping up with assigned readings ($r = .28, p < .001$). In this study, the PASS had a Cronbach’s alpha of 0.86 ($N = 22$).

For this study, the PASS was the preferred choice of self-report test as it is the most closely related to the tasks performed by participants. A test of academic procrastination seemed the most appropriate to use in conjunction with an experiment in which participants are asked to write an academic essay.

Trait Emotional Intelligence Questionnaire (TEIQue). The Trait Emotional Intelligence Questionnaire (Petrides & Furnham, 2003) is a self-report questionnaire that consists of 153 items, which measures the level of the participants’ Trait EI (see Appendix F). All questions are rated on a 7-point Likert scale ranging from 1 (“*completely disagree*”) to 7 (“*completely agree*”); a score of 4 indicates a neutral response. The TEIQue is comprised of fifteen different characteristics. However, the

characteristics can also be categorized into the following four sub-factors: Well-being (e.g.: “*I generally believe things will work out fine in my life*”), self-control (“*I usually find it difficult to regulate my emotions*”), emotionality (“*Expressing my emotions with words is not a problem for me*”), and sociability (“*I can deal effectively with people*”). There are also two characteristics, self-motivation and adaptability, that are not aligned to any particular sub-factor. However, these characteristics do contribute to the global TEIQue score. High scores in the TEIQue indicate a high level of emotional intelligence and confidence to effectively acknowledge and utilize emotions. In one study, the subscales of the TEIQue were shown to be globally normally distributed and reliable (Mikolajczak, Luminet, Leroy, & Roy, 2007; $N = 740$). As for the individual components, recent studies have shown alpha coefficients of 0.83 for well-being, 0.79 for self-control, 0.78 for emotionality, and 0.81 for sociability ($N = 1624$, Petrides, 2006). The TEIQue also shows good construct validity as it does have a significant negative correlation to scores from the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994), a test of alexithymia; a disorder related to emotional intelligence that is defined as the difficulty in identifying and describing emotions (Mikolajczak, Luminet, Leroy, & Roy, 2007). Another important point about the TEIQue, is that it does show good psychometric properties and internal consistencies even with small samples ($N = 34$, Petrides, Niven, & Mouskounti, 2006).

Canadian Academic English Language Test (CAEL). The CAEL is a standardized test of English language proficiency for use in academic settings (see Appendices K-O). Normally, the test is used to measure non-native speakers of English

(English as a second language) students' ability to use English in a university setting, but it can also be used to measure reading and writing comprehension. The test is comprised of reading comprehension, lecture comprehension, oral presentation proficiency, and essay writing tasks. For this study, I tested the participants' reading comprehension and writing skills by having them read an item from the test, complete a questionnaire, and compose a one-page essay based on the reading.

The testing process begins with the reading of an educational article selected by CAEL. Each reading consists of two short articles, one supporting a topic, the other refuting the same topic. This is followed by a short questionnaire comprised of questions pertaining to specific points of the news article. The questionnaire is split into two sections with each section dealing with the "pro" or "con" article. Reading comprehension is scored by the use of the questionnaire, which has questions pertaining to specific points of the material. As such, there are only a limited number of correct answers to signify that the participants understand what they have previously read. Students could answer the questions provided only the information needed to fully answer the question. As a result, some questions had full sentences whereas others only consisted of a few words. In the interest of time, the CAEL questionnaires were structured to have 16-18 points-worth of questions as opposed to the 21-25 as originally provided for each section. The total score participants can receive in the questionnaire section of the CAEL is thirty-four points. An answer key was provided by the CAEL department to allow non-faculty members of the psychology department to evaluate this section of the test.

The CAEL test also consists of an essay prompt, which provides the guidelines and topic to write the essay. The essay component of the test was scored by a faculty member of the University's psychology department who has been trained in scoring the CAEL. For this study, the essay was assessed for its quality of writing in the same manner as a normal essay-writing assignment expected from first-year university students, the required level for international students coming into Canadian universities.

Rescuetime. *Rescuetime* (<http://www.rescuetime.com>) is an online service that monitors the amount of time spent on Internet websites and computer applications. The time-monitoring function records the time spent on the *active* website/application that is currently on-screen. This allows users to have many applications running, but only the website or application that is actively being used is recorded at any one moment in time. This service is primarily used by businesses that seek to monitor the productivity of employees or subordinates in occupations that require heavy computer use under conditions of little to no supervision. This study is the first to use the service in academic research. For the purposes of this study, I subscribed to the "Pro" version of the program to record time-spent on specific documents/websites. This allows the subscriber to see separate applications/websites accessed during the ninety-minute periods instead of a general summary. For example, if two separate *Microsoft Word* files were accessed during testing, the summary would provide two separate accounts of how the program was used instead of providing one total time.

Obtaining a score from this tool was a straightforward process. Following any instance of computer use, *Rescuetime* records the amount of time spent on each

program/website during the ninety-minute period. Once the data are recorded, *Rescuetime* sends a weekly summary of the computer activities. However, the user can opt to examine the daily or even hourly activities as well. By accessing the daily and hourly summaries, researchers have the ability to note the time spent on each computer activity for the study session. The actual score is the amount of time as presented in these daily summaries. Hourly summaries are more accurate if multiple participants are recorded within the same day. These summaries present a to-the-second recording (e.g., 1 minute 35 seconds), which is used as a score if the participant was engaged in an off-task activity on the computer. The time-off task recorded by *Rescuetime* can also be combined with observed time off-task in the event the participant takes a break that does not involve the computer.

Results

The purpose of this study was to examine the relations between the components of Trait EI and the amount of time spent on an academic task conducted in a quasi-experimental design. A correlation analysis was conducted to examine the relations between the components of Trait EI and the duration spent on the CAEL, the amount of breaks taken, the total time off-task, and the total scores for each section (questionnaire and essay), as well as the total score for the CAEL.

First, Table 8 presents the descriptive data about the task duration, number of breaks taken, total time off-task, and the total CAEL scores. As noted from this table, there is a wide range in the time taken to complete the CAEL as well as in the

participants' CAEL scores. It is important to note that the highest possible scores for the CAEL were 34, 100, and 134 for the questionnaire, essay, and total scores, respectively.

Table 8: Descriptive data for Study 2

	<i>M</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Task duration (in minutes)	68.27	24.92	34.00	136.00
Breaks taken	1.00	1.38	0.00	4.00
Time off-task (in minutes)	2.14	2.64	0.00	7.28
CAEL questionnaire	29.61	4.54	17.00	34.00
CAEL essay	70.91	13.33	40.00	90.00
Total CAEL score	100.52	16.33	67.00	123.00

Second, correlational analyses revealed a significant positive relation between the CAEL reading questionnaire and the essay component of the CAEL ($r = .60, p < .05$). These results demonstrated internal consistency with respect to the academic skills of reading comprehension and writing with the questionnaire and essay tasks developed by CAEL.

As for the relations between EI and how participants spent their time in the experiment, the results proved disappointing in terms of the four main EI components. The analysis revealed no significant correlations between the components of Trait EI and the time taken to complete the task, the time spent off-task, and the amount of breaks

taken during the study. Not surprisingly given the results of Study 1, self-control showed the highest correlation with task duration ($r = -.41, p = .055$). The correlation matrix, which consists of the dependent and independent variables including task duration are included in Table 9.

Table 9: Relations between Trait EI components and key variables of the experimental task

	TD	B	TO	CQ	CE	TCA	WB	SC	E	S
Task duration (TD)		.36	.41	.14	.38	.35	.12	-.41	-.27	-.38
Breaks (B)			.86**	.11	.01	.04	-.09	-.19	-.11	-.01
Time off-task (TO)				-.07	-.07	-.07	.12	-.10	-.15	.01
CAEL questionnaire (CQ)					.57**	.74**	.09	.01	.28	.21
CAEL essay (CE)						.97**	.24	-.09	.33	.28
Total CAEL scores (TCA)							.22	-.07	.35	.29
Well-being (WB)								.39	.65**	.46*
Self-control (SC)									.45*	.55**
Emotionality (E)										.80**
Sociability (S)										

Notes. $n = 22$ * $p < .05$ ** $p < .01$

As with the first study, an additional correlational analysis was conducted to test the relations between all fifteen characteristics of the Trait EI model and the duration of the task, time off-task, amount of breaks, and the total scores of the CAEL. The results showed a number of significant relations. First, the duration participants took to complete the CAEL had significant negative relations with emotion regulation ($r = -.45, p < .05$) and emotion management ($r = -.51, p < .05$). It would seem that the less able participants are to regulate their emotions, the longer it took them to complete the task. In addition, empathy had a negative relation with CAEL test-taking duration ($r = -.53, p < .05$). Finally, total marks from the CAEL test also had significant positive relations with self-motivation ($r = .57, p < .01$) and strong relationships ($r = .50, p < .05$). In other words, high scorers of the CAEL report that they are highly self-motivated and have lasting pleasant relationships with others.

Discussion

The main finding from this study is that the components of Trait EI were not related with either the number of breaks taken or the quality of the CAEL. I think there are two explanations for these results, both of which are grounded in previous literature on self-regulation and taking breaks. The first explanation focuses on the idea that the participants knew that their reward for their participation in the study was close in proximity; they were willing to interrupt habitual behaviour in order to receive their reward. In other words, even participants who typically might procrastinate were willing to work for at least 90 minutes, as they knew that their reward (an entry to a draw for a cash prize or course credit) would immediately follow their participation, regardless of

the quality of the actual work completed. This idea is supported by the research of Hall and Fong (2007) and their Temporal Self-regulation Theory, in which short-term rewards are habitually chosen over long-term rewards. In this case, the goal for participation was close in proximity; participants knew they had to work for ninety minutes to attain their compensation. Because the reward was so close in proximity, participants might feel that the task was not as aversive as an assignment for their regular courses. Habitual behaviour, such as procrastinating or taking excessive breaks would be interrupted in favour of finishing early and receiving full compensation for participation in the study.

The second explanation is that it is possible that participants can take small breaks from work that would not adversely affect the quality of the work, nor would it reflect poorly on their level of Trait EI. As previously mentioned, research from Coker (2009) suggested that taking small “e-breaks” during work could actually refresh workers, thus improving productivity. It is probable that even people high in EI would want to take small breaks during the course of their work. As such, the results would likely support the idea that taking breaks in this experiment is not necessarily procrastinating, but it is the act of refreshing concentration, allowing the worker to finish the task in a productive manner and avoid exhaustion.

Further investigation into Trait EI and the experimental task did yield some significant relations between the variables related to procrastination (duration, amount of breaks, and time off-task), the CAEL test, and the fifteen characteristics that make up the TEIQue model. Task duration was negatively related with emotion management, emotion regulation, and empathy. In other words, people that can regulate their

emotions, manage their emotions, and that are empathetic spent less time on the task than those who are cannot control their emotions and are not empathetic. The role of these characteristics in the duration of the experimental task is interesting, in that there seems to be some form of emotion regulation and social competency taking effect in this study. In regard to emotion regulation, it is the process of maximizing positive emotions and minimizing negative emotions (Gross, 1998; Petrides, 2009). As such, it is possible that despite the negative emotions participants have about their participation in the study, they know that it would end as soon as the work was finished. Perhaps the participants appraised the situation in a positive light in that they would be comforted that the study is over once the experimental task is completed and they would be rewarded shortly after the study (cognitive re-appraisal; Gross, 1998). As for the relations between task duration, the emotional management of others, and empathy, it may be that some type of internal understanding of emotions or social competence is at play. Emotion management is listed as a characteristic of the sociability sub-factor, while empathy is a characteristic of the emotionality sub-factor. Furthermore, emotion management describes the ability to influence the emotions of other people and empathy describes the ability to understand the needs of others (Petrides, 2009). Taken together, there is the possibility that these participants understood the relations between the participant and researcher, and attempted to end the task within the instructed time-limit for favourable results or to attend to other social responsibilities (i.e., attend classes).

Another interesting finding was that the total CAEL test scores were positively related with self-motivation (a component that is not associated with any TEIQue sub-

factors) and building strong relationships (from the sociability sub-factor). People high in self-motivation is defined constantly strive for top quality work and do not require external rewards for their hard work; the achievement of completing the task is its own reward (Petrides, 2009). It would be no surprise that participants high in this factor would strive to produce high quality essays, even if they did not win the draw. These people, when presented with a task, would attempt to complete it to the best of their ability. As for the relationships characteristic, I think the reason for the significant relation with the CAEL scores is not due to the strengths of the relationships, but the actions it takes to develop them. One key aspect of this characteristic is that high scorers are labeled as good listeners (Petrides, 2009). As such, it is possible that these participants paid attention to the instructions and were able to produce high-quality work for being attentive to the wants of the researcher and scorers.

Limitations and Conclusions from Study 2

There were some limitations with the current study. The first being the difficulties in recording the amount of time spent off-task. On three separate occasions, *Rescuetime* did not record the time spent on the computer, despite the fact that it was turned on and the participants were working on the computer. This occurred due to a blind spot that is caused by long periods of computer activity, exceeding forty-five minutes. In each of the cases noted, the participants took a long time to complete the CAEL questionnaire on paper, causing the screensaver to activate on the computer. However, once the screensaver is turned off, *Rescuetime* still functions under the impression that there is no activity. In all these instances, the participant completed the

essay component of the CAEL on Microsoft word, but *Rescuetime* would not record the activity. Recording would only resume if the participants used another program or website, as it would be an indication of computer activity for *Rescuetime* to record. However, the author was manually observing all three cases and can confirm that no breaks were taken that involved computer use. Despite the observations made, the fact that the blind spots did occur should not be taken lightly and is worthy of reporting.

Additionally, the author also experienced some difficulty in recording the time off-task for activities that did not involve computer use. Since the participants were observed at five minute intervals, participants were not observed for the total duration of the experiment. As such, all time recorded for breaks that did not use computers were approximations, as it would not be feasible for the author to know when the break had begun. To counter this, the amount of breaks taken was given primary focus as the behavioural measure of procrastination for this study. The amount of breaks observed was accurate for this study. In addition, *Rescuetime* was accurate in recording when the participant was off-task, allowing for each instance a different program was used for over thirty seconds as a break. For future studies, it is advised that a method of constant supervision, such as video recording, be utilized to account for breaks that do not involve computer use. Another approach may be to include self-reports on time spent off task, as breaks can take many forms, including mental day dreaming that simply cannot be observed or recorded by a machine.

Another interesting observation was the use of the cell phone for taking breaks. Although the participants were given full permission to use the computer and the Internet

at their leisure, most opted to use their cell phones. Only *Facebook* and the participants' e-mail were accessed on the computer, but these cases occurred rarely. It is possible that the participants felt more comfortable taking breaks using their own equipment instead of the equipment provided to them. This could be problematic as this would likely discourage participants from taking breaks on the computer, regardless of whether they enjoy going on the Internet often or not.

Finally, the number of participants was too low to reach statistical significance with the current data. Considering that there were some relations that were close to significance (such as the relation between self-control and task duration), it is probable that the study could reach some significant results had there been more participants. If such as case was true, the author speculates that self-control would likely play a key factor in how long participants take in completing the experimental task. However, such a speculation requires further research.

Although the hypotheses were not supported, there is still much to learn from the current study. It is very likely that students can maintain their focus and concentration for ninety minutes, especially if the reward for doing so is close in proximity as it was for this study. Knowing that the draw entry or course credit is the immediate reward would likely help the participants complete the task with little breaks taken for the duration of the activity. Even in cases where breaks were taken, the quality of work did not change to the degree where it could be statistically significant. This finding supports the research from Coker (2009) that suggests that taking small breaks can refresh concentration. In

this case, breaks serve a purpose for the completion of work, and would not be considered procrastination.

General Discussion

For this thesis project, two studies were conducted to examine the relations between the components of Trait EI and procrastination. From the first study, self-control was the key individual difference variable predicting overall procrastination. As hypothesized, higher levels of self-control predicted reduced overall procrastination in general activities, academics, and on the Internet. In the second study, the sub-factors of Trait EI were not statistically significant with the behavioural measures of procrastination, and they were not significantly related with the quality of work in an English proficiency test. Self-control did not predict the frequency of breaks or the overall quality of the participants' work in a quasi-experimental setting. However, self-control was very close to reaching a significant negative relation with the amount of time spent on the experimental task, and the overall CAEL scores had significant positive relations with emotion regulation, a characteristic within the self-control component of Trait EI. Based on these results, I believe that self-control is a vital component in directing behaviour toward reducing procrastination and completing academic tasks in a timely and efficient manner. In order to understand the primary role of self-control as a component of EI in predicting procrastination, it is important to re-visit what is known about procrastination and how it is primarily a problem of self-regulation failure (Ferrari, 2001; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2004).

Self-Control

As previously stated, procrastination is considered a problem in self-regulating behaviour. Chronic procrastinators often give into habitual avoidance tendencies and delay their responsibilities until the last minute despite knowing they will be worse off for their delay (Steel, 2007; Ferrari, 2001; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2004). This thesis project supports the previous research on self-regulation in that self-control is a vital component to assist people in resisting short-term rewards over long-term goals and aspirations (Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000; Oaten & Cheng, 2006). So long as the energy needed to exert self-control is not exhausted, people high in this personality trait will be able to resist the specious benefits of procrastination and stay on-task for more long-term gains. As a component of Trait EI, self-control emphasizes the ability to control urges and desires (Petrides, 2009). This is an interesting concept, as procrastination, commonly described as self-regulation failure, can be seen as an impulsive behaviour in which people give in to the urge to delay a task for other, less aversive activities. Previous research on self-regulation failure has noted the role of emotions, and how they can influence self-regulatory abilities. One way self-regulation can fail is when it is undermined by the prioritization of repairing negative moods other known as “giving in to feel good.”

A common theme often reviewed in this thesis is the concept of prioritizing mood repair over long-term goals, otherwise known as “giving in to feel good” (Tice & Bratslavsky, 2000). The reason for this emphasis was to underscore the importance of

emotions in self-regulatory behaviour and understand how negative moods can influence people to procrastinate when faced with an aversive task. Given the option and the opportunity, chronic procrastinators will often decide to choose the habitual, short-term reward gained from procrastination over long-term goals, despite knowledge of the consequences of their inaction (Tice & Bratslavsky, 2000; Tice, Baumeister, & Bratslavsky, 2001). This thesis study, specifically the results of Study 1 showed that self-control, as a predictor of reduced procrastination, is an ability to regulate these impulses, regulate negative emotions, and halt habitual behaviour in order to complete assigned tasks and to maintain progress on long-term goals. The self-control sub-factors consists of characteristics that encourages emotional competency: 1) Low impulsiveness to avoid urges and desires; 2) stress management to continue working under duress and pressures; and 3) emotion regulation in order to regulate negative mood efficiently as to still maintain progress on long-term goals. Indeed, as the sole component that predicted overall procrastination as reflected in the composite score of general, academic and Internet procrastination, self-control is an important sub-factor of Trait EI needed to regulate emotions and our behaviour that is a result of our moods. However, the relations between procrastination and the other Trait EI factors are worthy of further exploration as well.

Trait EI and procrastination

The fact that there are multiple relations between the EI components of well-being, emotionality, sociability, and other types of procrastination (i.e., academic and Internet), suggest that these EI components may play a role (one that requires further

examination in future studies) in curbing procrastination behaviors. For example, emotionality is described as being proficient in multiple emotion-related abilities, such as the ability to accurately perceive emotions (Petrides, 2009). People high in the emotionality sub-factor reported that they can perceive their internal emotional states; they are aware of their emotions and are confident in appraising them accurately. Such an ability may prove useful in recognizing when we are “giving in to feel good,” allowing people to exert self-control and prevent them from procrastinating on important tasks. The well-being component that is described as feelings of happiness and fulfillment (Petrides, 2009) is also related with academic procrastination, underlining the need to feel confident in one’s ability to complete academic tasks. Finally, the sociability component, which deals with social relationships with others (Petrides, 2009) and is related with Internet procrastination, could suggest that people high in this sub-factor are aware that the consequences of procrastination are not always directed towards the self. Employers, friends, and family could also be affected by the procrastination of others. For example, employees high in sociability may understand that procrastinating in their work, may lead to poor results that not only affect the individual, but the employer or fellow employees as well. In order to build good relationships with employers and co-workers, it would be necessary to work in an efficient and timely manner to avoid any negative consequences to the company as a whole.

Research Implications and Future Directions

The results of my thesis research call attention to some interesting new ideas regarding the role of emotions in self-regulation behaviour and procrastination. As the

first study to explore the relations between the components of Trait EI and various forms of procrastination, the current research did demonstrate that EI is related to procrastination. Most importantly, and as expected, self-control was a significant predictor of procrastination. However, there are direct relations between other emotion-related traits like emotion perception and optimism, which opens new venues to explore how these characteristics may help to reduce dilatory behaviour. A greater understanding of how each characteristic of Trait EI contribute to reducing procrastination may be helpful in developing strategies to help procrastinators in understanding the emotions they feel when they are faced with aversive tasks and to understand why they prioritize mood repair over long-term task engagement.

One of the implications of the second study is that it underscored the need to refine a behavioural measure of procrastination. Future studies in procrastination should attempt to develop methods to provide continuous supervision over participants in an experimental task. Along with a self-report to account for behaviours that are difficult to monitor (i.e., daydreaming), researchers would have new avenues to examine different types of procrastination behaviours.

As the results from Study 2 showed, the amount of breaks taken during the experiment did not significantly change the quality of the experimental task. Previous literature has been mixed on the effects of taking small breaks while working. Some studies have found that small breaks can refresh concentration (Coker, 2009), while other studies have noted the loss of concentration and productivity (Ophir, Nass & Wagner, 2009; Nucleus Research, 2009). The current study suggests that small breaks did not

adversely affect the quality of the academic performance. However, further research with a larger sample is required to confirm that EI, particularly low self-control, would cause no adverse effects to quality and productivity. Such research would be beneficial not only to students, but to professionals who wish to achieve their long-term career goals.

For future directions in the research, I think research in Trait EI could benefit from exploring the sub-factors of the construct as opposed to a global score. The explanatory power of the sub-factors can help researchers in developing comprehensive rationales for the relations between Trait EI and personality constructs. As a constellation of emotion-related abilities, it would be difficult to suggest that Trait EI predicts certain outcomes when it could be only one component of the construct that is the key individual difference variable. By focusing on the individual characteristics or sub-factors of Trait EI, researchers can clearly see which factors are the most influential in predicting outcome behaviours and would be able to focus on certain aspects of the construct and how they affect behaviour.

Another suggested direction for future research is to further explore the effects of breaks on productivity and work quality by examining students or employees as they work on their regular assigned tasks. It would be interesting to examine how students/professionals would act in their normal setting instead of a quasi-experimental setting, in which they may feel uncomfortable with the task or the provided equipment.

Summary and Conclusion

This thesis research revealed that self-control is a key component of Emotional Intelligence related to procrastination. This finding underscores the centrality of self-regulation failure as a model for understanding procrastination. Similar to other self-regulatory failures such as drug and alcohol addiction, compulsive shopping, gambling or overeating, procrastination needs to be understood in terms of a problem with emotion regulation, particularly the favouring of short-term mood repair over long-term goal pursuit. It should be understood that most people must complete tasks that are considered aversive, boring, or stressful and may cause negative emotions. However, efficient appraisal and utilization of these emotions would help in our understanding that short-term mood repair (i.e., procrastinating) undermines our ability to fulfill target goals. Further research examining the role of Emotional Intelligence and particularly studies aimed at bolstering self-control will be important in addressing the problem of procrastination. There is still much to learn in how the emotionality, sociability, and well-being sub-factors enhance self-control and reduce impulsive behaviours. I think that understanding emotional intelligence is a key component to understanding the specious benefits of procrastinating and use this knowledge to stay on task. Our ability to effectively identify and understand our internal emotional states will go a long way towards developing ways to exert self-control to halt habitual behaviours and strive for our goals and ambitions.

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Appendix A

Informed Consent (Study 1)

Informed Consent: An examination of the relation between emotional intelligence and procrastination

This study was reviewed and received clearance from the Psychology Research Ethics Board.

The purpose of an informed consent is to ensure that you (the participant) understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information to you so that you have the opportunity to determine whether you wish to participate in the study.

Research Personnel: The following people may be contacted if you have any questions about the research: Eric Heward (MA student, eheward@connect.carleton.ca) and Dr. Timothy A. Pychyl (Faculty Advisor, 520-2600, x. 1403). Should you have any ethical concerns about this study please contact Dr. Monique Sénéchal (Ethics Chair, 520-2600, ext. 1155) and Dr. Janet Mantler (Chair, 613-520-2600 ext. 4173).

Purpose: The purpose of this study is to examine the relations between the sub-factors of emotional intelligence and procrastination.

Task requirements and duration: You will be asked to complete a series of five questionnaires on your experience with emotions, self-control and procrastination in various aspects of life. This process will take approximately 30 minutes to complete.

Compensation: You will be awarded with 0.5% course credit for your participation in this study.

Potential risk/discomfort: It is possible that some questions may cause some discomfort as they address your emotional experience, your feelings, self-control, and procrastination, which could potentially cause some minor discomfort, stress, or embarrassment. It is your choice to answer the questions and you may omit any questions without penalty. You may leave the session at anytime by clicking the withdraw button or closing the questionnaire window. The contact information for the counselling and study support services will be made available at the end of the session should you feel distressed and require assistance.

Anonymity/confidentiality: The data collected in this study will be anonymous and confidential. Anonymity will be assured by using a numeric code to record your responses, not names or student numbers.

Right to withdraw: Your participation in this study is completely voluntary and you have the right to stop participating at any time for any reason without penalty. You also

have the right to not respond to any question(s). By clicking the "SUBMIT" button we are assuming that you have read the above information and have granted consent to participate in this study.

Appendix B

General Procrastination Scale (Lay, 1986)

Please answer each statement below by clicking the box above the number that best reflects the degree of agreement or disagreement with that statement.

Extremely	Moderately	Neutral	Moderately	Extremely
<u>U</u> ncharacteristic	<u>U</u> ncharacteristic		Characteristic	Characteristic
1	2	3	4	5

1. I often find myself performing tasks that I had intended to do days before. 1 2 3 4 5
2. I often miss concerts, sporting events, or the like because I don't get around to buying tickets on time.* 1 2 3 4 5
3. When planning a party, I make the necessary arrangements well in advance.* 1 2 3 4 5
4. When it is time to get up in the morning, I most often get right out of bed. 1 2 3 4 5
5. A letter may sit for days after I write it before mailing it. 1 2 3 4 5
6. I generally return phone calls promptly. 1 2 3 4 5
7. Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days. 1 2 3 4 5
8. I usually make decisions as soon as possible. 1 2 3 4 5
9. I generally delay before starting on work I have to do. 1 2 3 4 5

10. When travelling, I usually have to rush in preparing
to arrive at the airport or station at the appropriate time. 1 2 3 4 5
11. When preparing to go out, I am seldom caught
having to do something at the last minute. 1 2 3 4 5
12. In preparing for some deadline, I often waste time
by doing other things. 1 2 3 4 5
13. If a bill for a small amount comes, I pay it right away. 1 2 3 4 5
14. I usually return an RVSP request very
shortly after receiving the invitation. 1 2 3 4 5
15. I often have a task finished sooner than necessary. 1 2 3 4 5
16. I always seem to end up shopping for birthday or
Christmas gifts at the last minute. 1 2 3 4 5
17. I usually buy even an essential item at the last minute. 1 2 3 4 5
18. I usually accomplish all the things I plan to do in a day. 1 2 3 4 5
19. I am continually saying "I'll do it tomorrow." 1 2 3 4 5
20. I usually take care of all the tasks I have to
do before I settle down and relax for the evening. 1 2 3 4 5

*Appendix C**PASS (Solomon & Rothblum, 1984)*

AREAS OF PROCRASTINATION

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on an 'a' to 'e' scale 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 the 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 clicking the box above the appropriate letter.

I. Writing a Term Paper

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

a	b	c	d	e
<i>Never</i>	<i>Almost never</i>	<i>Sometimes</i>	<i>Nearly always</i>	<i>Always</i>

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

a	b	c	d	e
<i>Never a problem</i>	<i>Almost never</i>	<i>Sometimes</i>	<i>Nearly always</i>	<i>Always a problem</i>

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

a	b	c	d	e
<i>Do not want to decrease</i>		<i>Somewhat</i>		<i>Definitely want to decrease</i>

II. Studying for Exams

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

a	b	c	d	e
<i>Never</i>	<i>Almost never</i>	<i>Sometimes</i>	<i>Nearly always</i>	<i>Always</i>

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

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

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

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

III. Keeping Up Weekly Reading Assignments

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

a b c d e

Do not want to decrease

Somewhat

Definitely want to decrease

VI. School Activities in General

16. To what degree do you procrastinate on these activities?

a b c d e

Never

Almost never

Sometimes

Nearly always

Always

17. To what degree is procrastination on these activities a problem for you?

a b c d e

Never a problem

Almost never

Sometimes

Nearly always

Always a problem

18. To what extent do you want to decrease your tendency to procrastinate on these activities?

a b c d e

Do not want to decrease

Somewhat

Definitely want to decrease

When I am online, I don't need to think about offline problems. 1 2 3 4 5 6 7

I sometimes use the Internet to procrastinate. 1 2 3 4 5 6 7

I often use the Internet to avoid doing unpleasant things. 1 2 3 4 5 6 7

Using the Internet is a way to forget about the things I must do but don't really want to do. 1 2 3 4 5 6 7

Appendix E

Internet Procrastination Questionnaire (Heward & Pychyl, 2010)

Please answer each statement below by clicking the box above the number that best reflects the degree of agreement or disagreement with that statement.

	1	2	3	4	5	6	7
	Completely disagree			Neutral			
	Completely agree						
1. I often have instant chat messaging (i.e., <i>MSN</i>) open while I work on the computer.	1	2	3	4	5	6	7
2. I cannot go through my day without checking my favourite Web sites at least once.	1	2	3	4	5	6	7
3. When I'm working, I use the Internet only for assistance on my assigned task.*	1	2	3	4	5	6	7
4. Sometimes, I spend more time on certain Web sites than expected.	1	2	3	4	5	6	7
5. I often give myself a time limit when I'm on the Internet.*	1	2	3	4	5	6	7
6. Once I start surfing the Internet, I find it hard to stop.	1	2	3	4	5	6	7
7. I often take small breaks in my work to check my email.	1	2	3	4	5	6	7
8. If I do not need to use the Internet for work, I will disconnect my Internet until my work is done.*	1	2	3	4	5	6	7
9. I sometimes find myself playing games on the computer when there are better things to do.	1	2	3	4	5	6	7
10. I get distracted by various Web sites.	1	2	3	4	5	6	7
11. I take breaks from work to check <i>Facebook</i> or <i>Twitter</i> .	1	2	3	4	5	6	7

- | | |
|---|---------------|
| 12. I think I spend too much time on the Internet as a way to avoid my work. | 1 2 3 4 5 6 7 |
| 13. I surf on web sites I enjoy when I'm in a bad mood. | 1 2 3 4 5 6 7 |
| 14. My computer is my primary source for entertainment. | 1 2 3 4 5 6 7 |
| 15. When I work on an assignment, only files related to work are open on my computer.* | 1 2 3 4 5 6 7 |
| 16. I catch myself spending a lot of time streaming videos or watching movies on my computer. | 1 2 3 4 5 6 7 |
| 17. When I work on the computer, I turn off all instant messaging and/or <i>Facebook</i> so my friends know that I'm busy.* | 1 2 3 4 5 6 7 |
| 18. I normally download movies/music when I'm working on the computer. | 1 2 3 4 5 6 7 |
| 19. I spend too much time on the computer. | 1 2 3 4 5 6 7 |
| 20. My time on the computer distracts me from things that need to be done at school or around the house. | 1 2 3 4 5 6 7 |

Scoring

After reversing * items, sum all the items. Higher scores indicate that the participant procrastinates using the computer/Internet.

*Appendix F**Trait Emotional Intelligence Questionnaire (TEIQue; Petrides & Furnham, 2003)***Instructions**

- Please answer each statement below by clicking on the box above the number that best reflects your degree of agreement or disagreement with that statement. There are no right or wrong answers.
- Work quickly, and don't think too long about the exact meaning of the statements.
- Try to answer as accurately as possible.
- You have seven possible responses, ranging from 1=Completely Disagree to 7=Completely Agree

1.	I'm usually able to control other people	1	2	3	4	5	6	7
2.	Generally, I don't take notice of other people's emotions	1	2	3	4	5	6	7
3.	When I receive wonderful news, I find it difficult to calm down quickly	1	2	3	4	5	6	7
4.	I tend to see difficulties in every opportunity rather than opportunities in every difficulty	1	2	3	4	5	6	7
5.	On the whole, I have a gloomy perspective on most things	1	2	3	4	5	6	7
6.	I don't have a lot of happy memories	1	2	3	4	5	6	7
7.	Understanding the needs and desires of others is not a problem for me	1	2	3	4	5	6	7
8.	generally believe that things will work out fine in my life	1	2	3	4	5	6	7
9.	I often find it difficult to recognise what emotion I'm feeling	1	2	3	4	5	6	7
10.	I'm not socially skilled	1	2	3	4	5	6	7
11.	I find it difficult to tell others that I love them even when I want to	1	2	3	4	5	6	7
12.	Others admire me for being relaxed	1	2	3	4	5	6	7
13.	I rarely think about old friends from the past	1	2	3	4	5	6	7

14.	Generally, I find it easy to tell others how much they really mean to me	1	2	3	4	5	6	7
15.	Generally, I must be under pressure to really work hard	1	2	3	4	5	6	7
16.	I tend to get involved in things I later wish I could get out of	1	2	3	4	5	6	7
17.	I'm able to "read" most people's feelings like an open book	1	2	3	4	5	6	7
18.	I'm usually able to influence the way other people feel	1	2	3	4	5	6	7
19.	I normally find it difficult to calm angry people down	1	2	3	4	5	6	7
20.	I find it difficult to take control of situations at home	1	2	3	4	5	6	7
21.	I generally hope for the best	1	2	3	4	5	6	7
22.	Others tell me that they admire me for my integrity	1	2	3	4	5	6	7
23.	I really don't like listening to my friends' problems	1	2	3	4	5	6	7
24.	I'm normally able to "get into someone's shoes" and experience their emotions	1	2	3	4	5	6	7
25.	I believe I'm full of personal weaknesses	1	2	3	4	5	6	7
26.	I find it difficult to give up things I know and like	1	2	3	4	5	6	7
27.	I always find ways to express my affection to others when I want to	1	2	3	4	5	6	7
28.	I feel that I have a number of good qualities	1	2	3	4	5	6	7
29.	I tend to rush into things without much planning	1	2	3	4	5	6	7
30.	I find it difficult to speak about my intimate feelings even to my closest friends	1	2	3	4	5	6	7
31.	I'm not able to do things as well as most people	1	2	3	4	5	6	7
32.	I'm never really sure what I'm feeling	1	2	3	4	5	6	7
33.	I'm usually able to express my emotions when I want to	1	2	3	4	5	6	7
34.	When I disagree with someone, I usually find it easy to say so	1	2	3	4	5	6	7

35.	I normally find it difficult to keep myself motivated	1	2	3	4	5	6	7
36.	I know how to snap out of my negative moods	1	2	3	4	5	6	7
37.	On the whole, I find it difficult to describe my feelings	1	2	3	4	5	6	7
38.	I find it difficult not to feel sad when someone tells me about something bad that happened to them	1	2	3	4	5	6	7
39.	When something surprises me, I find it difficult to get it out of my mind	1	2	3	4	5	6	7
40.	I often pause and think about my feelings	1	2	3	4	5	6	7
41.	I tend to see the glass as half-empty rather than as half-full	1	2	3	4	5	6	7
42.	I often find it difficult to see things from another person's viewpoint	1	2	3	4	5	6	7
43.	I'm a follower, not a leader	1	2	3	4	5	6	7
44.	Those close to me often complain that I don't treat them right	1	2	3	4	5	6	7
45.	Many times, I can't figure out what emotion I'm feeling	1	2	3	4	5	6	7
46.	I couldn't affect other people's feelings even if I wanted to	1	2	3	4	5	6	7
47.	If I'm jealous of someone, I find it difficult not to behave badly towards them	1	2	3	4	5	6	7
48.	I get stressed by situations that others find comfortable	1	2	3	4	5	6	7
49.	I find it difficult to sympathize with other people's plights	1	2	3	4	5	6	7
50.	In the past, I have taken credit for someone else's input	1	2	3	4	5	6	7
51.	On the whole, I can cope with change effectively	1	2	3	4	5	6	7
52.	I don't seem to have any power at all over other people's feelings	1	2	3	4	5	6	7
53.	I have many reasons for not giving up easily	1	2	3	4	5	6	7
54.	I like putting effort even into things that are not really important	1	2	3	4	5	6	7

55.	I always take responsibility when I do something wrong	1	2	3	4	5	6	7
56.	I tend to change my mind frequently	1	2	3	4	5	6	7
57.	When I argue with someone, I can only see my point of view	1	2	3	4	5	6	7
58.	Things tend to turn out right in the end	1	2	3	4	5	6	7
59.	When I disagree with someone, I generally prefer to remain silent rather than make a scene	1	2	3	4	5	6	7
60.	If I wanted to, it would be easy for me to make someone feel bad	1	2	3	4	5	6	7
61.	I would describe myself as a calm person	1	2	3	4	5	6	7
62.	I often find it difficult to show my affection to those close to me	1	2	3	4	5	6	7
63.	There are many reasons to expect the worst in life	1	2	3	4	5	6	7
64.	I usually find it difficult to express myself clearly	1	2	3	4	5	6	7
65.	I don't mind frequently changing my daily routine	1	2	3	4	5	6	7
66.	Most people are better liked than I am	1	2	3	4	5	6	7
67.	Those close to me rarely complain about how I behave toward them	1	2	3	4	5	6	7
68.	I usually find it difficult to express my emotions the way I would like to	1	2	3	4	5	6	7
69.	Generally, I'm able to adapt to new environments	1	2	3	4	5	6	7
70.	I often find it difficult to adjust my life according to the circumstances	1	2	3	4	5	6	7
71.	I would describe myself as a good negotiator	1	2	3	4	5	6	7
72.	I can deal effectively with people	1	2	3	4	5	6	7
73.	On the whole, I'm a highly motivated person	1	2	3	4	5	6	7
74.	I have stolen things as a child	1	2	3	4	5	6	7
75.	On the whole, I'm pleased with my life	1	2	3	4	5	6	7
76.	I find it difficult to control myself when I'm extremely happy	1	2	3	4	5	6	7

77.	Sometimes, it feels like I'm producing a lot of good work effortlessly	1	2	3	4	5	6	7
78.	When I take a decision, I'm always sure it is the right one	1	2	3	4	5	6	7
79.	If I went on a blind date, the other person would be disappointed with my looks	1	2	3	4	5	6	7
80.	I normally find it difficult to adjust my behaviour according to the people I'm with	1	2	3	4	5	6	7
81.	On the whole, I'm able to identify myself with others	1	2	3	4	5	6	7
82.	I try to regulate pressures in order to control my stress levels	1	2	3	4	5	6	7
83.	I don't think I'm a useless person	1	2	3	4	5	6	7
84.	I usually find it difficult to regulate my emotions	1	2	3	4	5	6	7
85.	can handle most difficulties in my life in a cool and composed manner	1	2	3	4	5	6	7
86.	If I wanted to, it would be easy for me to make someone angry	1	2	3	4	5	6	7
87.	On the whole, I like myself	1	2	3	4	5	6	7
88.	I believe I'm full of personal strengths	1	2	3	4	5	6	7
89.	I generally don't find life enjoyable	1	2	3	4	5	6	7
90.	I'm usually able to calm down quickly after I've got mad at someone	1	2	3	4	5	6	7
91.	I can remain calm even when I'm extremely happy	1	2	3	4	5	6	7
92.	Generally, I'm not good at consoling others when they feel bad	1	2	3	4	5	6	7
93.	I'm usually able to settle disputes	1	2	3	4	5	6	7
94.	I never put pleasure before business	1	2	3	4	5	6	7
95.	Imagining myself in someone else's position is not a problem for me	1	2	3	4	5	6	7
96.	I need a lot of self-control to keep myself out of trouble	1	2	3	4	5	6	7
97.	It is easy for me to find the right words to describe my feelings	1	2	3	4	5	6	7

98.	I expect that most of my life will be enjoyable	1	2	3	4	5	6	7
99.	I am an ordinary person	1	2	3	4	5	6	7
100	I tend to get "carried away" easily	1	2	3	4	5	6	7
101	I usually try to resist negative thoughts and think of positive alternatives	1	2	3	4	5	6	7
102	I don't like planning ahead	1	2	3	4	5	6	7
103	Just by looking at somebody, I can understand what he or she feels	1	2	3	4	5	6	7
104	Life is beautiful	1	2	3	4	5	6	7
105	I normally find it easy to calm down after I have been scared	1	2	3	4	5	6	7
106	I want to be in command of things	1	2	3	4	5	6	7
107	I usually find it difficult to change other people's opinions	1	2	3	4	5	6	7
108	I'm generally good at social chit-chat	1	2	3	4	5	6	7
109	Controlling my urges is not a big problem for me	1	2	3	4	5	6	7
110	I really don't like my physical appearance	1	2	3	4	5	6	7
111	I tend to speak well and clearly	1	2	3	4	5	6	7
112	On the whole, I'm not satisfied with how I tackle stress	1	2	3	4	5	6	7
113	Most of the time, I know exactly why I feel the way I do	1	2	3	4	5	6	7
114	I find it difficult to calm down after I have been strongly surprised	1	2	3	4	5	6	7
115	On the whole, I would describe myself as assertive	1	2	3	4	5	6	7
116	On the whole, I'm not a happy person	1	2	3	4	5	6	7
117	When someone offends me, I'm usually able to remain calm	1	2	3	4	5	6	7
118	Most of the things I manage to do well seem to require a lot of effort	1	2	3	4	5	6	7
119	I have never lied to spare someone else's feelings	1	2	3	4	5	6	7
120	I find it difficult to bond well even with those close to me	1	2	3	4	5	6	7
121	I consider all the advantages and disadvantages before making up my mind	1	2	3	4	5	6	7

122	I don't know how to make others feel better when they need it	1	2	3	4	5	6	7
123	I usually find it difficult to change my attitudes and views	1	2	3	4	5	6	7
124	Others tell me that I rarely speak about how I feel	1	2	3	4	5	6	7
125	On the whole, I'm satisfied with my close relationships	1	2	3	4	5	6	7
126	I can identify an emotion from the moment it starts to develop in me	1	2	3	4	5	6	7
127	On the whole, I like to put other people's interests above mine	1	2	3	4	5	6	7
128	Most days, I feel great to be alive	1	2	3	4	5	6	7
129	I tend to get a lot of pleasure just from doing something well	1	2	3	4	5	6	7
130	It is very important to me to get along with all my close friends and family	1	2	3	4	5	6	7
131	I frequently have happy thoughts	1	2	3	4	5	6	7
132	I have many fierce arguments with those close to me	1	2	3	4	5	6	7
133	Expressing my emotions with words is not a problem for me	1	2	3	4	5	6	7
134	I find it difficult to take pleasure in life	1	2	3	4	5	6	7
135	I'm usually able to influence other people	1	2	3	4	5	6	7
136	When I'm under pressure, I tend to lose my cool	1	2	3	4	5	6	7
137	I usually find it difficult to change my behaviour	1	2	3	4	5	6	7
138	Others look up to me	1	2	3	4	5	6	7
139	Others tell me that I get stressed very easily	1	2	3	4	5	6	7
140	I'm usually able to find ways to control my emotions when I want to	1	2	3	4	5	6	7
141	I believe that I would make a good salesperson	1	2	3	4	5	6	7
142	I lose interest in what I do quite easily	1	2	3	4	5	6	7
143	On the whole, I'm a creature of habit	1	2	3	4	5	6	7
144	I would normally defend my opinions even if it meant arguing with important people	1	2	3	4	5	6	7
145	I would describe myself as a flexible person	1	2	3	4	5	6	7

146	Generally, I need a lot of incentives in order to do my best	1	2	3	4	5	6	7
147	Even when I'm arguing with someone, I'm usually able to take their perspective	1	2	3	4	5	6	7
148	On the whole, I'm able to deal with stress	1	2	3	4	5	6	7
149	I try to avoid people who may stress me out	1	2	3	4	5	6	7
150	I often indulge without considering all the consequences	1	2	3	4	5	6	7
151	I tend to "back down" even if I know I'm right	1	2	3	4	5	6	7
152	I find it difficult to take control of situations at work	1	2	3	4	5	6	7
153	Some of my responses on this questionnaire are not 100% honest	1	2	3	4	5	6	7

Appendix G

Study 1 Debriefing

Debriefing: An examination of the relation between emotional intelligence and procrastination

The purpose of this study is to examine the factors of emotional intelligence, which describe the ability to accurately appraise and utilize emotions, and their relations with procrastination. Emotional intelligence consists of 4 sub-factors which I measured in this study. These include: Well-being, self-control, emotionality, and sociability. Overall, I believe that the self-control factor of emotional intelligence will act as a resource to control behaviour when faced with the temptation to procrastinate. In addition, I expect to see emotionality, sociability, and well-being predict procrastination scores as well.

For more information about emotional intelligence, you can visit the London Psychometric Laboratory at UCL (www.psychometriclab.com) or the EI skills group at www.emotionaliq.com.

For more information about procrastination, please visit the Procrastination Research Group Web site at www.procrastination.ca.

For research issues please contact: Eric Heward (Graduate student, eheward@connect.carleton.ca) or my research supervisor Dr. Tim Pychyl at tpychyl@connect.carleton.ca

For ethical concerns please contact: Dr. Monique Sénéchal (Ethics Chair, 520-2600, ext. 1155) and Dr. Janet Mantler (Chair, 613-520-2600 ext. 4173).

If after completing these questionnaires you feel stressed or concerned about your life at the university, you may want to speak to someone from Student Life Services (Room 420 Tory Building, phone 520-2874 or email experiencesuccess@carleton.ca) or a counsellor or doctor at Carleton University Health and Counselling Services.

For any health related concerns (i.e., emotional or physical) please contact Carleton University Health and Counselling Services, 520-6674.

For academic concerns, please visit the Student Academic Success Centre Web site and book an appointment.

http://www.carleton.ca/sasc/sasc_home/index.html

THANKS AGAIN FOR YOUR TIME PARTICIPATING IN THIS STUDY!

Appendix H

IPQ Item-total Correlations (Study 1)

	<i>M</i>	<i>SD</i>	<i>Item-total correlation</i>
I often have instant chat messaging (i.e., <i>MSN</i>) open while I work on the computer.	3.86	2.33	.48
I cannot go through my day without checking my favourite websites at least once.	4.79	2.18	.50
When I'm working, I use the Internet only for assistance on my assigned task.*	4.83	1.74	.25
Sometimes, I spend more time on certain websites than expected.	5.22	1.53	.41
I often give myself a time limit when I'm on the Internet.*	5.38	1.76	.05
Once I start surfing the Internet, I find it hard to stop.	3.86	2.00	.64
I often take small breaks in my work to check my e-mail.	5.10	1.70	.39
If I do not need to use the Internet for work, I will disconnect my Internet until my work is done.*	5.50	1.68	.17
I sometimes find myself playing games on the computer when there are better things to do.	3.90	2.06	.51
I get distracted by various websites.	4.74	1.76	.65

I take breaks from work to check <i>Facebook</i> or <i>Twitter</i> .	4.58	2.19	.55
I think I spend too much time on the Internet as a way to avoid work.	4.20	2.11	.72
I surf websites I enjoy when I'm in a bad mood.	4.42	1.91	.44
My computer is my primary source of entertainment.	4.05	2.07	.61
When I work on an assignment, only files related to my work are open on my computer.*	4.74	1.80	.46
I catch myself spending a lot of time streaming videos or watching movies on my computer.	4.22	2.14	.55
When I work on the computer, I turn off all instant messaging and/or <i>Facebook</i> so my friends know I'm busy.*	4.37	2.07	.43
I normally download music/movies when I'm working on the computer.	3.60	2.21	.52
I spend too much time on the computer.	4.40	2.01	.77
My time on the computer distracts me from things that need to be done at school or around the house.	4.23	2.01	.67

Appendix I

Informed Consent: A study of academic reading and writing (Study 2)

The purpose of an informed consent is to ensure that you (the participant) understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information to you so that you have the opportunity to determine whether you wish to participate in the study.

This study was reviewed and received clearance from the Psychology Research Ethics Board.

Research Personnel: The following people may be contacted if you have any questions about the research: Eric Heward (MA student, eheward@connect.carleton.ca) and Dr. Timothy A. Pychyl (Faculty Advisor, 520-2600, x. 1403). Should you have any ethical concerns about this study please contact Dr. Monique Sénéchal (Ethics Chair, 520-2600, ext. 1155) and Dr. Janet Mantler (Chair, 613-520-2600 ext. 4173).

Purpose: The purpose of this study is to test your reading comprehension and writing abilities using a news topic that is not commonly known. I am interested in assessing the quality of the work in a reading and writing task that covers an unfamiliar topic.

Task requirements and duration: You will be asked to read one article, finish a questionnaire, and complete a one-page essay based on the article you've read. This process takes approximately 90 minutes to complete. The questionnaire will have questions about the news article. The essay and the questionnaire will be evaluated as if both were components of a typical academic exam. As such, your essay will be graded for content, style, and grammar and the questionnaire will be graded on the accuracy of the answers provided. After the reading and writing task is completed (i.e., the essay and the questionnaire based on the news article), I will have two follow-up questionnaires for you to complete.

Compensation: All participants' names are entered in a draw to win one of two fifty-dollar (\$50.00) cash prizes. Students in the PSYC 1001(2)/2001 (2) courses are eligible to receive 1.5% credit for their participation.

Potential risk/discomfort: It is possible that you may feel some minor discomfort, stress, or embarrassment in completing the essay and questionnaire related to the news article, as a faculty member in the psychology department will evaluate them. Should you feel distressed, you may take a short break. In addition you can approach the researcher to address your concerns or to withdraw from the research session *without* penalty. You can also refuse to answer any items from the follow-up questionnaires *without* any penalty.

Anonymity/confidentiality: The data collected in this study are kept anonymous and confidential. Anonymity will be assured by using a numeric code to record your responses, not names or student numbers. We will only collect your name and contact information (with your permission) for the fifty-dollar draw at the end of the data

collection. If you are selected in the draw, you will be contacted to collect the prize. After the prizes are sent out to the winners, all names and contact information will be destroyed.

Right to withdraw: Your participation in this study is completely voluntary and you have the right to stop participating at any time for any reason without penalty.

I have read the above description of the study and I am aware that my participation is completely voluntary and that the data gathered are anonymous and confidential. My signature indicates that I agree to participate in the study.

Participant's Name: _____ Date: _____

Participant's Signature: _____ Witness: _____

Appendix J

Informed Consent to the Use of Data

The purpose of an informed consent is to ensure that you now understand the true purpose of the study and that you agree to allow your data to be used for research and teaching purposes. Because you were only told of the procedures, not the purpose of this study and that you were being monitored at the outset, we are now asking for your consent to allow your data to be used for research and teaching purposes.

Purpose: The purpose of the study was to assess how the sub-factors of emotional intelligence influence the likelihood of procrastination on an academic writing task. To study these relations, I had you complete an English proficiency test (reading the news article followed by a questionnaire and essay based on the article). During this part of the study, you were monitored to examine if you remained on-task for the duration of the assigned task. If you were off-task, it would be recorded by *Rescuetime* if you were on the computer, or I would take note of it if you were not on the computer. The English proficiency test was followed by two questionnaires that measure your level of trait emotional intelligence and academic procrastination.

Anonymity/Confidentiality: The data collected in this study are kept anonymous and confidential. Anonymity will be assured by using a numeric code to record your responses, not names or student numbers.

Right to Withdraw Data: You have the right to indicate that you do not wish your data to be used in this study. If you indicate this is your choice, then all data have provided will be destroyed.

I have read the above description of the study investigating the relations between the sub-factors of emotional intelligence and procrastination. The data in the study will be used in research publications or for teaching purposes. My signature indicates that I agree to allow the data I have provided to be used for these purposes.

Full Name (Print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

Appendix K

First Reading: Genetically Modified Foods (Study 2)

Reading 1: “Real Life Science Fiction”

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CHAPTER 3

**REAL LIFE SCIENCE FICTION: HOW GENETICALLY MODIFIED FOODS
CAN SAVE OUR PLANET**

When we hear the words “genetic modification”, we often fear the worst. Usually, those fears involve thoughts of mutant plants and animals – the creations of mad scientists – that have evolved past the point of our control. Frankenstein springs to mind, as we contemplate the many stories of how playing with genetics can go terribly wrong. Secure in the knowledge that there are no hideous, eight foot giants with bolts sticking out of their necks roaming our streets, many of us are content to let nature run its course and to leave issues of genetic modification to the writers of science fiction.

In the real world, however, scientists are more optimistic about the outcome of genetic modifications and, since the early 1980s, have been working hard to calm the public fears that have so often been associated with their work. In fact, despite anxiety about the potential creation of poisonous or allergenic substances and the concern that altered foods may disrupt the natural state of the ecosystem, scientists have made great strides in the genetic modification of foods – strides that may help to solve food-related problems that date back to the very beginnings of human civilization.

A recipe for life

Also known as *recombinant DNA technology*, the genetic modification of foods involves changing or modifying the genes of plants or animals to alter the characteristics of these organisms. Much like a recipe for baking a cake, every living thing on our earth contains *Deoxyribo Nucleic Acid*, or DNA, which is essentially like a recipe for building life as we know it. DNA is a fundamental molecule that can be found in the cells of all organisms and acts as the carrier of genetic information. When we bake a cake, we use a recipe that tells us what ingredients we should use. These ingredients mix together to make a batter and, after letting the batter cook in the oven for a period of time, a cake comes out. Imagine, if you will, that DNA acts like a recipe for a cake, giving an organism instructions for what genes it should use. The genes mix together in a blueprint for life and after giving the genes enough time to develop, a unique organism is produced.

Genetic modification, then, is a process where the recipe is changed slightly to make a similar but different organism. Like a cook who substitutes strawberries for chocolate in a recipe to make a strawberry, rather than chocolate, cake, scientists have been working on taking specific genes from certain plants and animals and placing them in the genetic make-up of others, thereby creating new and improved forms of life.

Making something old new again

The idea behind the genetic modification of foods isn't new. In fact, it's thousands of years old! Since the inception of agricultural practices in the early ages of human civilization, farmers have been crossbreeding plants to create new types of food. Bread wheat is one of the oldest forms of plant to have resulted from crossbreeding.

Crossbreeding is very similar to genetic modification, in that the genes from one type of plant or animal are passed on to another type through reproduction. This practice, though, is by no means an exact science. Crossbreeding by farmers has a lot to do with knowledge of plants and animals and even more to do with luck. Often, in the creation of a new species through crossbreeding, farmers don't have any idea of which specific genes are responsible for the organism's changes. Even worse, in many instances a useful trait will be transferred from one organism to another, but it will also be accompanied by an unwanted secondary trait that needs to be eliminated. Finally, crossbreeding is a time consuming process, one that takes several generations of breeding for either positive or negative results to occur.

For these reasons, and with subsequent advances in scientific technology, the genetic modification of foods has quickly become the preferred alternative to crossbreeding in our quest to find new sources and types of food. According to the BBC, genetic modification "allows scientists to select a single gene for a single characteristic and transfer that stretch of DNA from one organism to another – even between different species". Because single genes can be transferred, scientists know that any changes in the new organism are a result of the individual gene that has been transferred and this ensures that only wanted traits will result from the modification. Plus, rather than waiting for several generations of breeding for a change to occur, results of genetic modification are almost immediate, saving scientists and food producers time and money.

Is it me or is it getting crowded in here?

Increased accuracy and rapid development in the modification process have a number of positive consequences for the food industry, but none are greater than the possibility of increasing the world's overall food supply. Currently, there are a little over 6 ½ billion people living in the world and a full one-third of the population is on the brink of starvation. According to the latest estimates from the U.S. Census Bureau, the world population is projected to increase by 2 billion by the year 2028. In other words, in less than a quarter of a century, there will be over 8 billion people living on earth and, seeing

as how there isn't enough food to go around now, it's extremely unlikely that in under 25 years we'll be able to feed the entire planet.

Here's the problem with resources, so what's the answer?

As a global society not only do we have poor food distribution practices – where a small segment of the world's population is overfed and a much larger percentage is underfed – but we also have to contend with the fact that food production resources are limited. Urbanization is wiping out our farmlands as the areas that were once reserved for growing different foods are now being made into towns, cities and industrial parks. Our oceans are being over-fished and as a result fishing industries are suffering from forced closures. The world's fresh water supply (which is used to water crops) is dwindling and harvests are being lost to drought. Environmental changes in temperature and air quality are also affecting farmers and are pushing many species of plants and animals to extinction.

As an answer to the world's growing food crisis, many scientists believe that genetically modified foods will provide us with the means to feed everyone in the near future. For example, by taking the genes from certain plants that are resistant to extreme temperatures and transferring them to, say wheat for instance, scientists can create crops that will survive intense heat and drought. Another example of the enormous potential of genetically modified foods comes from research reported by the *Council for Agricultural Science and Technology* (CAST). A number of global farmlands are becoming infertile due to increasing saline levels – that is, farmers are having trouble growing potatoes, wheat and rice because of the high salt content of the soil. CAST believes that by transferring the salt-resistant genes of certain bacteria to these types of crops, genetically modified potatoes, wheat and rice will be able to flourish, even in highly salty lands.

The possibilities of developing new kinds of food through genetic modification are almost limitless, from augmenting the reproductive behaviour of certain animals to increasing the nutritional value of particular foods. Although the production of genetically modified foods is still in its infancy, there's no doubt that if we want to eliminate starvation and meet the demands of our growing world we need to turn to research and technology that once belonged only in the fictional laboratories of mad scientists.

Reading 2: “Genetically Modified Foods: For Better Or For Worse?”

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Chapter 4

**Genetically Modified Foods: For better or for worse?
How committing to the genetic modification of foods
might endanger life on earth as we know it.**

Overview

In the earlier chapters of this volume, we defined genetically modified foods, looked at some examples of how specific foods can be modified, and explored the ways in which such foods can positively impact the world from the perspectives of both farmers and food distributors. In this chapter, our focus will shift to the negative, and potentially disastrous, effects that may occur through the genetic modification of foods.

To briefly summarize, genetically modified foods can:

- Minimize crop losses and farming costs through the creation of crops that are resistant to insects, herbicides, disease, cold and drought,
- help reduce or eliminate increasing world starvation through the production of crops with higher yields, and
- prevent malnutrition by fortifying foods with more vitamins and minerals than what are naturally found in them.
- While it appears that the modification of our food sources has the potential to improve all of our lives, a number of environmental activists, political groups and government officials have lobbied against it. They feel that long term research on the full extent of such drastic changes to the world’s food supply is lacking. Latent risks of genetic modifications generally fall into one of three categories: 1) environmental hazards, 2) human health risks, and 3) economic concerns.¹ The rest of this chapter will be devoted to examining these issues in more detail.

Environmental Hazards

¹ Whitman, D. 2000. Genetically Modified Foods: Harmful or Helpful?

When it comes to fears about the impact that genetically modified foods will have on our environment, most opposition groups aren't afraid of the short-term effects (where large portions of government research and policies have been aimed). It's the long-term consequences of altering the earth's fragile and naturally balanced ecosystem that have lobbyists begging both governments and citizens to exercise caution in the production and consumption of genetically modified organisms.

Insect Repelling Crops

For instance, several short-term studies investigating the transfer of insect repelling bacteria genes to a variety of commonly grown agricultural plants have convinced many farmers (particularly those in the United States) that soybean, corn and cotton crops engineered to be naturally resistant to insects are safe to grow. These genetically modified crops now produce their own insect repellent and farmers are now saving money because they no longer need to purchase a lot of pesticides. In addition, crops that are capable of repelling insects on their own do less damage to the farmlands because there is less of a need to spray toxic substances on the land. Thus, the short-term benefits of genetically modifying foods, at least in this scenario, are extremely positive.

Now that a number of years have elapsed since the first genetically modified crops were grown, more recent studies are suggesting potentially devastating long-term implications of engineering foods that are resistant to insects. For example, through a controlled study², scientists showed that the pollen from corn containing the bacteria that is lethal to insects causes a significantly higher death rate among monarch butterfly caterpillars. While there is currently disagreement about the validity of this study, there now exists a legitimate concern that the pollen from plants designed to kill crop-harming insects will destroy all insects, harmful or not. Also, wind can spread pollen to neighboring environments and some scientists fear that genetically modified agricultural crops will significantly reduce the insect population in areas not just where crops are grown. Insects are one of the primary links in the ecological food chain. With fewer insects, there is less food for birds and other wildlife that rely on them as a food source. This will increase the death rate among these reliant species, thereby affecting the next level in the food chain, and so on.

The highly adaptable nature of insects has caused other researchers to speculate that crop-destroying insects currently killed by the new pesticide defenses bred into soybean, corn and cotton will develop an immunity to the deadly bacteria over time. Consequently,

² *Nature*, Vol. 399, No. 6733, May 1999

even though farmers are using less pesticides on their genetically modified crops now, stronger and more toxic pesticides will have to be created and employed in the future in order to get rid of insects that have adapted. Needless to say, a small change in the balance of the environment can have enormous long-term impacts on the ecosystem that, in the end, could be irreversible.

Herbicide Resistant Crops

A similar case of how genetically modified foods can pose a serious threat to the long-term stability of the environment is in the development of herbicide resistant crops. Since the invention of herbicides that are used to destroy weeds and other unwanted plants, farmers have been discouraged by the way these herbicides have been killing their harvests too. In countries where genetically modified foods are produced, successful efforts have been made to develop agricultural plants that are unaffected by the use of herbicides. A detailed study conducted by the German Ministry for Ecology, however, has shown that herbicide resistance bred into certain oilseed rape can be transferred to normal, or traditionally grown, rapeseed crops over 200 metres away. German scientists believe that if the genetically altered characteristics of one plant can be naturally transferred to another (in the same way that the pollen from modified corn crops can be spread by wind to neighboring areas), then it must be concluded that the herbicide resistant genes can be transferred to normal weeds as well. These weeds will become, in essence, 'superweeds' – a kind of plant life that would seem to come directly out of a farmer's worst nightmare. Current herbicides will be ineffective against superweeds and newer, stronger herbicides will be required to get rid of them. Again, we are shown that short-term solutions in the form of genetically modified foods can have horrendous long-term costs for farmers and, more significantly, for the environment.

Genetic scientist, Dr. Michael Antoniou, explaining the consequences of herbicide resistant gene transfer between genetically modified oilseed rape and naturally occurring weeds:

"This means that herbicide resistant weeds - so-called superweeds - will rapidly appear and spread. Once weeds have multiple resistance genes, which may occur within just a few growing seasons, they will be particularly difficult to control. This will result in greater dependence and use of agrochemicals, rather than less, as is claimed by the biotechnology companies."

Human Health Risks

As insect resistance to pesticides and the natural spreading of plant genes are showing, life on earth is highly adaptable, which is one of the reasons it's able to flourish in unlikely areas and extreme conditions. Human life is no exception. Thousands of years of evolution and adaptation have molded us into what we are – creatures capable of surviving for long periods of time in almost any environment. One of the keys to human adaptability has been, and continues to be, our ability to adjust to the foods that are around us.

Having been exposed to a large variety of foods since birth, our bodies have become accustomed to the nutrients we typically ingest. Occasionally, you might discover that after eating a particular type of food your stomach becomes upset, or your skin gets irritated. You may feel tired, lack energy or even have a headache. While in some cases these symptoms may be the result of an illness or a mild case of food poisoning, more likely what you are experiencing is an allergic reaction to the food you have eaten. Allergic reactions can range from being relatively mild to critical, or even fatal. As there is no known medical cure for allergies, most people simply have to avoid the foods that they are allergic to. Although individuals can be allergic to virtually any kind of food, the majority of allergic reactions people experience are to shellfish (such as crab, lobster or shrimp), seeds, nuts, yeast and dairy products.

There has been a rise in allergic reactions since genetically modified foods appeared on the market and opponents of the modification process are blaming, at least partly, genetically modified food. Controlled experiments aimed at investigating the link between allergies and genetically modified foods are showing that the cause for alarm is not entirely unwarranted. For example, preliminary research studies into transferring genes from the Brazilian nut to the soybean³ were abandoned when it was discovered that individuals who were allergic to nuts instantly became allergic to the modified soybean.

In terms of the human health risks associated with genetically modified foods, both consumers and producers are paying close attention to the modification of soybeans. In the United States and the United Kingdom alone, over 60% of all processed foods – from bread and baby food to milk and pasta – include soybean and soybean products. Modifying the characteristics of a product that is used in so many kinds of food is a practice that has many worried about its implications on human health and well being.

³ *New England Journal of Medicine*, Vol. 334, No. 11, 1996

At the York Nutritional Laboratory, one of Europe's largest and most respected food sensitivity organizations, emerging evidence from ongoing research shows that in a single year public food allergies caused by soybean have increased by over 50%. Whereas 10 out of every 100 patients initially experienced adverse effects from having ingested soybean products, over a short period of time that number has risen to 15 out of every 100.

Although the rise in the number of allergies related to soybean products has not been proven to be wholly a result of genetic modifications, the knowledge that allergies to other types of food can be transferred to soybeans, coupled with problems in the distribution of them, are convincing many to support the claim that genetically modified foods have the capacity to negatively affect human health. The United States is currently the world's largest distributor of soybeans and, as of this moment, US companies are combining soybeans with pure soybeans in their shipments to other countries. Thus, even in regions of the world that do not produce genetically modified products, consumers are likely to purchase foods containing modified soybeans that have been imported from other countries.

John Graham, spokesman for the York laboratory, said: "We believe this raises serious new questions about the safety of genetically modified (GM) foods because it is impossible to guarantee that the soya used in the tests was GM-free." It is the first time in 17 years of testing that soya has crept into the laboratory's top 10 foods to cause an allergic reaction in consumers. The vegetable has moved up four places to ninth and now sits alongside foodstuffs with a long history of causing allergies, such as yeast, sunflower seeds and nuts.⁴

Economic Concerns

There are widespread economic concerns associated with the genetic modification of foods and the remainder of this chapter will be devoted to discussing them.

The production of genetically modified foods is a lengthy and costly process. Companies that choose to pursue this type of research are profit driven. Organizations that decide to invest large amounts of time and money in genetic modification technology and research expect a return on their investment – that is, at the end of the process, companies anticipate making more money than they spend. One proposed method for companies to make money is to patent any of the genetically modified products that they produce. A

⁴ Townsend, M. *The Daily Express*, March 12th, 1999

patent is a government guarantee ensuring that a specific person, or company, has invented a product.

Returning to our earlier example of insect resistant corn, follow the example below to discover how patents increase the cost of farming for local growers:

Imagine that Company A develops genetically modified corn that is pest resistant and patents the invention. With the patent, Company A has guaranteed that no other company can produce this precise type of corn. However, because Company A is required to make money, it will now sell its invention to Company B who, in turn, will sell the seeds from this corn to local farmers. Company B is also required to make more money on the corn than it spends. In order to meet their costs, Company B has to raise the price of their seeds and, consequently, farmers who wish to grow the produce will have to pay more to purchase them.

Recall from the beginning of this chapter that two of the major advantages of genetically modified foods were a reduction in farming costs and reduction or elimination of world starvation. Genetically modified foods offer farmers in poor and starving countries the means to produce larger crops that are more resistant to bad weather, disease and pest damage. Bigger and healthier crops would mean that more people could be fed in countries with starving populations. However, the enormous cost of developing genetically modifying food creates a chain reaction that ultimately ends up costing farmers more money not less. The economic concern, therefore, is that the cost of producing genetically modified food, which has the potential to feed many more, will be too great for those who need to purchase it most.

Appendix L

Second Reading: Professional Ethics (Study 2)

Reading 1: “**Ethics and the Professions**”

Chapter 4
Ethics and the Professions

Chapter Goals/Learning Objectives

In this chapter we will explore several **definitions of ethics** in a professional setting and examine some **examples of ethical behavior** presented through case studies.

4.1 Definitions of Ethics

What ethics is

While we all might have a sense of what the right thing or the wrong thing to do is in a particular situation, defining a complex concept such as ethics is not an easy task. Nevertheless, the goal of this chapter is to define ethics and relate it to an increasing interest in what is termed *professional ethics* or the promotion of ethical values in professions such as business, medicine, teaching and engineering.

What ethics is not

In order to define ethics, we must first begin with an examination of things that have been customarily associated with our common understandings of ethics in day to day life. In an attempt to distinguish these common associations from a scholarly definition of ethics, ethicists Clare Andre and Manuel Velasquez⁵ discuss four main concepts that are often used to define ethics: personal feeling, religion, law and societal beliefs. They maintain that while all of these may in fact relate to ethics, each concept alone does not sufficiently define ethics. Personal feelings, they argue, can often conflict with what other people may believe is the ‘right thing to do’, and although religions promote ethical behaviour, a person does not have to be religious to behave ethically. They also point out that laws and the beliefs of mainstream society can on occasion conflict with ethical behaviour, for example historical events such as slavery.

How can we then define ethics? Andre and Velasquez give the following definition:

⁵ Andre and Velasquez 1987

Ethics refers to a well-based set of standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness, or specific virtues.⁶

There are two key components to this definition. First while these standards may vary from culture to culture, they are based on ‘well founded reasons’, that is, what is believed to be the right thing to do has been carefully thought out by weighing the factors mentioned by Andre and Velasquez above. Their definition also includes another important concept which is that there is a constant evolution and examination of what we as a society believe to be ethical. This means that as a society or individual, we need to continuously question what ethics is and how our behaviour can best uphold this concept.

4.2 Professional Ethics

What professional ethics is

If ethics is defined as a set of standards, then professional ethics simply extends this concept to sets of standards, which apply to particular professions. An example of ethical standards in the medical profession is the Hippocratic Oath, which binds doctors to certain practices and behaviours. While the role of ethics in various professions will be looked at in depth in the proceeding chapters, two cases are presented to provide a more concrete idea of the importance of professional ethics.

4.2.1 Case Studies

Case Study 1: Professional Ethics and the Engineer

While we do not immediately equate the field of engineering with ethics, the fact is that engineers in their roles as designers of buildings, bridges and other objects that surround us have an enormous impact on our lives. As Michael Yeo⁷ points out, it is engineers who guide project developers with their knowledge and expertise of what can safely be constructed. If engineers do not act responsibly, the effects can be disastrous. Consider the case below:

⁶ Andre and Velasquez 1987, 124

⁷ Yeo 1993

The Absentee Engineer

The head engineer, of a building project, decided to play golf during the afternoons and left the construction inspection to a more junior engineer on his team. Unfortunately, one of the constructions collapsed. The building inspectors determined that, while no one was injured, the potential for endangering lives was present. In spite of the fact that the head engineer had not done the inspections himself, the responsibility lay with him, not the junior engineer. The building inspectors stated that the head engineer, and not the junior engineer, was responsible for the safety of the building project. They revoked the head engineer's license for failing to uphold the ethical standards of the profession.

The Absentee Company

A large company realizes that it is able to reduce its costs substantially by moving its production facilities to a developing country. The company sets up factories to manufacture its products in the developing country and monitors the quality of the product. While the quality of the product remains high, they fail to monitor labour conditions within their new production facility, which are characterized by an inhumane number of work hours for a similarly inhumane hourly wage. Consumers learn through the media of the company's unethical procedures and begin to boycott the product. For failing to act responsibly, the company suffers enormous economic losses.

As this case illustrates, the relationship businesses maintain with their consumers helps to guide their ethical practices, and ensures companies are held ethically responsible for their actions. While consumer pressure does not ensure ethical practices occur, professional ethics in business is becoming increasingly important to maintain a healthy, thriving company.

4.3 The Role of Professional Ethics**The Increasing Importance of Professional Ethics**

While professional ethics has been an area of interest for most professions since the 1970s⁸, it has only been developing increasing prominence among the general public in recent years. Ethicist Michael Yeo has isolated four factors to explain this occurrence. First, he argues that ethics has become a growing concern due to what he terms 'a decline in trust'. The public, according to Yeo, has been bombarded with media reports of scandal within the professions, so much so that they are much less trustful of

⁸ Yeo 1993

professionals. Thus, professions have been forced to acknowledge ethical issues much more openly in an attempt to regain the public's trust⁹.

Second, Yeo argues that with increased consumerism, the public has become a more rights-oriented society. In other words, individuals and communities who are more educated and aware of their rights have become more involved in decision-making processes. Yeo points out that in the medical field, for instance, patients are much more involved in their healthcare decisions and large community projects often are reviewed by the public before they can be undertaken.

The third factor that Yeo discusses is the growing variation of society's ethical values. Not only have the traditional values that once guided professional behaviour been changed by, for example, new concerns for the environment, but the multicultural nature of communities has also created new and diverse ethical viewpoints. According to Yeo, these changes in our traditional understanding of ethics have created more debates around ethics and a greater need to ensure that all viewpoints are acknowledged and respected.

Lastly, he points out that technological advances have forced ethical issues to the forefront all over the world. Issues surrounding the medical profession, such as the cloning of cells or the extension of life through technological devices, provide clear examples.

Thus, these four changes in society have created a greater concern for ethical issues and forced the questioning of ethical practices in many professions.

⁹ Yeo 1993

**Reading 2: The Question of Business Ethics in Graduate Business Programs:
Schools Talk Back**

**The Question of Business Ethics in Graduate Business
Programs: Schools Talk Back**

Despite the expectations of the public for an increase in ethics education, business schools are reluctant to respond by offering the courses.

William Durham

A stir of business scandals in the North American media, such as the fall of Worldcom and Enron, has awakened questions from the public about the ethical character of business executives. In fact, according to a recent Reader's Digest Poll that asked Canadians to rank professionals in terms of their trustworthiness from 1 to 25, Head Executives placed almost at the bottom of the list, coming in at 22nd. The unethical business practices and shady deals which first came to broad public attention in 2002, and have since seemed to characterise the business world, have caused a public outcry for ethics to become a larger part of business education. Surely the bankruptcies and financial woes of these companies facing scandals indicate that unethical behaviour is not good for business. While incorporating ethics education may seem to be the obvious solution, many business schools have resisted the move to a more ethics driven program.

The question is why, in light of such highly publicised corporate scandals, would business schools not make ethics education a priority? According to *Business Week* writer Brian Hindo, the answer to this question lies within the nature of academic communities and their cautious attitude toward change when it comes to curriculum.

The Corporate Scandals of 2002

Worldcom

This U.S. telecommunications company filed for what has been called the largest bankruptcy in history after falsifying its profits by over \$3.6 billion.

Enron

Executives from this energy company, once the 7th largest company in the U.S., faced legal charges and bankruptcy in 2002. Stockholders lost millions after the company was found to have hid its financial debts and lied about its earnings.

Tyco

Maker of plastic and electronic products, Tyco executives are under investigation for reportedly using \$170 billion to buy art. While the fate of the executives has not yet been decided, Tyco has already suffered a large drop in the value of their stock as a result.

Adelphia

Founders of this cable and telecommunications company are accused of taking money out of the company to finance their personal interests, in addition to faking financial records. The company was to file for bankruptcy in June.

Xerox

Charged with claiming \$2 billion more in profits than they actually made, this printing and photocopy company during the investigation alone lost 1500 jobs and faced a large drop in their stock price.

Hindo claims that to sway educators' attitudes towards including ethics courses in business programs is not an easy job. To the average citizen the fall of giant companies due to ethical errors is sufficient evidence for the need of ethics courses in universities. However, business professors are resistant to adding ethics courses to their programs in universities. Because new programming is costly, business professors want to see some research supporting the link between ethical training and company profits before making changes. And so far, studies have failed to produce strong data to support this link. Although some studies show that companies with established codes of ethical practice have increased profits in comparison to companies without established ethical codes, researchers have yet to prove that ethics education for business students is connected to these higher profits.

Professors and faculty of business schools have also voiced other reasons for their resistance to teaching ethics. Many feel that while the business scandals this year clearly demonstrate the need for more attention to ethical practices, students are just too old to begin learning ethics by the time they reach business school. Although research exists both ways, some faculty members believe that once a person reaches a certain age, their ethical character is already fully developed and no amount of teaching will affect their beliefs. For instance, ethics professor David Messick, was quoted in a recent Ford Foundation Report by Judith Samuelson as saying "the average age [of a business student in a Graduate Program] is 28 to 30. Their character is largely formed by the time they get here. If they don't have a sound moral compass, nothing I teach in a 10-week course is going to embed one there".

The average age [of a business student in a Graduate Program] is 28 to 30. Their character is largely formed by the time they get here. If they don't have a sound moral compass, nothing I teach in a 10-week course is going to embed one there. *David Messick, Ethics Professor, Northwestern University's Kellogg Business School.*

And as Hindo points out, all those fraudulent business executives in the newspaper headlines have training in ethics anyway. Business programs since the 1970s have had some element of ethics instruction. Therefore, the individuals who are currently facing charges for unethical business practices, many graduates of prestigious business schools such as Harvard, would have received some education on ethical practices. Many feel that this provides sufficient evidence that ethics education simply does not work.

The 'preaching' aspect of ethics instruction has also made many business professors steer clear of the subject. "I just don't want to stand up there and bombard them with my version of morality and what constitutes ethical practices" says Professor Warrick, director of the Graduate Business Program at Seaton University. This is a particular issue that has been raised by many professors in the field given the growing international nature of business and business education. What is seen as ethical to one particular culture may not be understood in the same way in another culture and that has a lot of

Business ethics as a discipline has developed outside the mainstream conversation of business. For the most part, you can teach business ethics and not really know very much about business. You can't expect to have much of an impact if that's true. Edward Freedman, Business Professor, Santa Clara University.

professors simply uncomfortable with the idea of imposing their own set of cultural values. "I don't think we can honestly say that we have arrived at a universal idea of what is ethical. We're just not there yet and until we are, I would rather let the students in my classes, who are adults, decide for themselves right from wrong" says Warrick.

Business professors at a round table discussion held at Santa Clara University in February 2004 echoed sentiments like Warrick's.

Professors were asked to respond to the question "Has business ethics had a discernible impact on business practice in the U.S.?" In the transcripts published from the discussion, business professor, Edward Freedman pointed out what he felt was a disconnection between the academic subject of business ethics and the business world itself. "Business ethics as a discipline has developed outside the mainstream conversation of business. For the most part, you can teach business ethics and not really know very much about business. You can't expect to have much of an impact if that's true", says Freedman. This viewpoint was echoed by law professor, David Friedman also present at the debate, stating that "the moral history of philosophy has nothing to do with business".

He also argues that business ethics instruction can be divided into two separate goals; one he sees as valid and the other as questionable. The first goal he distinguishes in business ethics education is the goal of helping students learn the specific accepted behaviours of the business world in whatever country or society they might choose to work in. This type of ethics education has been described by ethics professor Manuel Velaquez as *descriptive ethics* and is useful, Friedman argues, to help prepare graduate business students to avoid problems that could be costly in business. For instance, we have all heard stories about the North American businessman mistakenly rolling up his sleeves at a business meeting in Japan under the assumption that his behaviour is giving off an aura of 'getting down to business' only to discover that his Japanese counterparts take his behaviour to mean lack of interest or seriousness. Stereotypes aside, learning the manner in which a particular culture does business could mean the difference between success

and failure and it is this type of information that Friedman feels is relevant to students training to enter the field of business.

The second and more questionable goal of ethics education as Friedman sees it, however, is *normative ethics*, which he argues comes too close to telling people ‘what they ought to do’. In other words, business ethics becomes moral education essentially teaching students ‘right from wrong’. The problem with this, according to Friedman, is that “the people who are teaching, in fact, know no more about the subject than the people they’re teaching it to”. Like Warrick, Friedman argues that without a unified sense of what is ethical, teaching ethics becomes truly problematic. And in reality, Friedman concludes, that in fact, since profit is the determining factor in the business world, choosing so-called ethical practices, amounts to choosing what people, society or a particular culture thinks is ethical, not what the business professional him or herself considers to be ‘right’.

Another hurdle to introducing ethics education is the attitudes of students themselves. Because business programs are typically only two-year programs and so much important information needs to be acquired, students often put core courses, such as accounting and economics ahead of ethics training. Programs that do offer ethics courses find that business students often choose other elective business courses over ethics training, believing that these skills are more marketable once they finish their degrees and begin job searches.

I struggle to take my graduate students through the accounting curriculum as it exists now. How could I possibly focus on ethical issues too? Dr. Hammond, Business Professor, Jefferson School of Business

Some faculties have suggested an alternative approach to the traditional elective ethics courses offered in programs. In an accounting class, for instance, a Professor could bring in examples of unethical bookkeeping for class discussion. Thus, rather than dealing with ethics courses independently which are in competition with other business courses, this integrating of ethical issues into core courses may prove to be more effective. This would also be more cost-efficient for the university. While this may seem like a viable solution, the majority of business professors do not seem very keen. “I struggle to take my graduate students through the accounting curriculum as it exists now. How could I possibly focus on ethical issues too?” says Dr. Hammond, a long-standing professor at the Jefferson School of Business.

Faculty members also feel that in addition to the issues of time, introducing an ethics component into an existing course requires them to have expert knowledge in a field that is normally taught by business ethics specialists. While Dr. Hammond does not balk at the challenge of learning other aspects in her discipline, she does feel that it is

unreasonable to expect already busy professors to have the time to develop the level of skills they would require to add ethics to their courses.

In order to alleviate this problem, some schools have opted for team-taught courses, in which full-time ethics professors work side-by-side with core teachers. This is a seemingly perfect solution; however, many schools can simply not afford to pay two professors to teach one course without further driving up the cost of an already expensive program.

So if the addition of ethics education is not the answer to the growing problem of unethical behaviour in the business world, what is to be done? Some business schools feel that revamping the curriculum is not the only way to let burgeoning business hopefuls know that ethical behaviour is important.

Berkeley is one school that has instituted a policy focusing on the moral integrity of students applying to their business program. As of May 2003, Berkeley Admissions Officers have begun checking students' applications for false information. Those students whose information does not check out have been refused admission to the program. According to Associated Press reporter, Michelle Locke, this year Berkeley caught and denied admission to five out of one hundred applicants for lying on their applications.

"What I hope to do through all of this is show that integrity is the most important thing", director of Graduate Admissions, Rosemaria Martinelli was quoted by Locke as saying.

Other schools have pointed out that focusing on academic integrity is another way to ensure that only those students who care about ethics will be successful. All students, including those in the business program at Duke University, for instance, must sign the 'Duke Honor Code' when beginning their university study. The pledge has been instituted to enforce ethical conduct and professionalism. According to the Independent Daily at Duke University, "400 students were charged with violating university policies". The paper also quotes Diane Warwold from Duke's Center for Academic Integrity, who argues for the advantage of such a policy: "When you look at a place that teaches ethics in its programs, enforcing academic integrity is a great example of connecting classroom theory to actual practice."

Whether checking up on student's applications or requiring students to pledge to honorable behaviours when entering university will have any real effect, however, remains to be seen. Perhaps, the bottom line is that in reality the frenzy of media images of handcuffed corporate executives and reports of record setting bankruptcies should have

a lasting impression on future corporate players. Will the corporate world learn from its mistakes? While the answer is unknown, it seems the role of business schools in teaching these lessons will be limited.

Appendix M

CAEL Questionnaire (Genetically Modified Foods)

Reading 1: “Real Life Science Fiction”

(16 points)

Read the question first and then look for the information in the article. You do not need to answer the questions in complete sentences.

Note: All answers are in italics.

1. Look at the title of the article. Which position does this article express? Put a check (✓) beside the best answer *(1 point)*

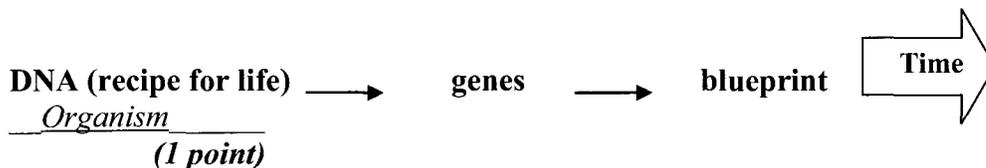
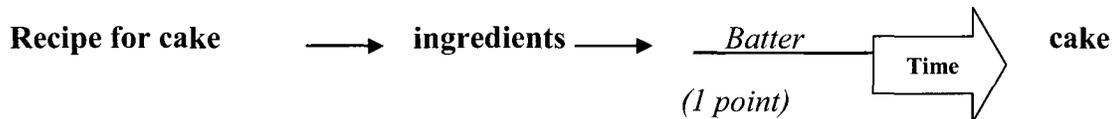
 X *the benefits of genetically modified food*

 the hazards of genetically modified food

 impossible to predict from the title

2. What is the purpose of the first two paragraphs of the reading? *(1 point)*
-

3. Complete the flow chart with information from the section “A Recipe for Life”. *(2 points)*



4. How does the reading define genetic modification? *(1 point)*

CHANGING OR MODIFYING THE GENES OF PLANTS OR ANIMALS TO ALTER THE CHARACTERISTICS OF THESE ORGANISMS.

OR

THE PROCESS WHERE THE RECIPE (OR GENE) IS CHANGED SLIGHTLY TO MAKE A SIMILAR BUT DIFFERENT ORGANISM

5. Why are scientists working to genetically modify plants and animals? (1 point)

TO CREATE NEW AND IMPROVED FORMS OF LIFE

6. What is an example of one of the oldest plants to be crossbred? (1 point)

Bread Wheat

7. According to the text, what are the two main reasons for the belief that genetic modification is better than crossbreeding? One has been given. (2 points)

- Scientists can select a single gene for a single characteristic
- *A USEFUL TRAIT WILL BE TRANSFERRED WITH AN UNWANTED SECONDARY TRAIT*
- *TIME CONSUMING or TAKES SEVERAL GENERATIONS FOR POSITIVE OR NEGATIVE RESULTS TO OCCUR.*

8. How many people are expected to be living on earth in the year 2028? (1 point)

8^{1/2} billion

9. Complete the chart with information from the section on resource problems. (6 points)

The Problems and Consequences of Limited Global Resources

Problem	Consequences
<p>Poor food distribution practices</p>	<p>Small part of the world is overfed and large part of the world is underfed</p>
<p>• <i>URBANIZATION</i> (1 point)</p>	<p>Farmlands are being made into towns, cities and industrial parks</p>
<p>• <i>OVERFISHING OR OCEANS OVERFISHED</i> (1 point)</p>	<p>• <i>FISHING INDUSTRIES FORCED TO CLOSE</i> (2 points)</p>
<p>Environmental changes in temperature and air quality</p>	<p>• <i>AFFECTING FARMERS</i> • <i>PUSHING MANY SPECIES OF PLANTS AND ANIMALS TO EXTINCT</i> (2 points)</p>

Reading 2: “Genetically Modified Foods: For better or worse?”

(18 points)

Read the question first and then look for the information in the article. You do not need to answer the questions in complete sentences.

Note: All answers are in italics.

1. Where would you find this type of reading? (Put a check ✓ beside the best answer) *(1 point)*

___ an advertisement

X *a text book*

___ a novel

___ a science magazine

2. Look at the title of this text. Which point of view is this reading articulating? (Put a check ✓ beside the best answer) *(1 point)*

___ the positive aspects of genetically modified food

X *the negative aspects of genetically modified foods*

___ a balanced view of the pros and cons of genetically modified foods

___ it's hard to predict from the title

3. Complete the following chart with information from the article’s **Overview** section.

(3 points)

<p>The Potential Benefits of Genetically Modified Foods</p>	<p>The Potential Negative Effects of Genetically Modified Foods</p>
<p>• Minimize crop losses and farming costs</p>	<p>• Environmental hazards</p>
<p>• <i>REDUCE OR ELIMINATE STARVATION</i> (1 point)</p>	<p>• <i>HUMAN HEALTH RISKS</i> (1 point)</p>
<p>• <i>PREVENT MALNUTRITION</i> (1 point)</p>	<p>• Economic concerns</p>

4. According to this reading, most government research has focused on the _____ effects of genetically modified foods. (Put a check ✓ beside the

word that best fills the blank)

(1 point)

_____ long-term

___X___ short-term

_____ negative

_____ drastic

5. List two potentially harmful long-term effects of insect repelling crops. (2 points)

Any two:

POLLEN CAUSES HIGHER DEATH RATE IN MONARCH BUTTERFLY CATERPILLARS OR POLLEN MIGHT DESTROY ALL INSECTS, HARMFUL OR NOT

WIND BLOWS POLLEN AND DESTROYS INSECTS IN AREAS WHERE CROPS NOT GROWN

IF FEWER INSECTS, LESS FOOD FOR BIRDS AND OTHER WILDLIFE OR INCREASE IN DEATH RATE OF SPECIES RELIANT ON INSECTS FOR FOOD OR DISRUPTION OF FOOD CHAIN

INSECTS MAY ADAPT/DEVELOP IMMUNITY OR STRONGER/MORE TOXIC PESTICIDES WILL HAVE TO BE CREATED AS INSECTS DEVELOP IMMUNITY

6. What may be a detrimental consequence of the transfer of herbicide resistant genes to weeds?

(1 point)

Superweeds

7. According to the article, fatigue, lethargy and headaches are more often a result of:

(1 point)

- a cold or flu
 food poisoning
 an allergic reaction
 any number of illnesses

8. Why were gene studies of the Brazilian nut and the soybean halted? *(1 point)*

BECAUSE INDIVIDUALS WHO WERE ALLERGIC TO NUTS INSTANTLY BECAME ALLERGIC TO THE MODIFIED SOYBEANS

9. Why does the practice of modifying soybeans worry many people? *(1 point)*

BECAUSE IT IS USED WIDELY IN THE WORLD FOR MANY KINDS OF FOOD

10. Are regions of the world that do not produce genetically modified soybeans protected from the potential negative effects of these soybeans? *(1 point)*

Yes No

11. When a company produces a new genetically modified food what legally binding guarantee ensures that other companies can't just copy it? (1 point)

Patent

12. Using the entire reading 2, fill in the boxes below with one argument **for** and one argument **against** genetically modified foods. The first issue (environmental issues) is completed for you. (4 points)

THE ISSUES	ADVOCATES FOR GENETICALLY MODIFIED FOOD	CRITICS AGAINST GENETICALLY MODIFIED FOOD
ENVIRONMENTAL ISSUES	<ul style="list-style-type: none"> • Food crops that can repel insects (reduce the need for toxic pesticides.) 	<ul style="list-style-type: none"> • Higher death rate of Monarch butterflies
HUMAN HEALTH ISSUES	<p>FORTIFICATION OF FOOD WITH VITAMINS AND MINERALS</p> <p>REDUCE OR ELIMINATE STARVATION/HUNGER (1 point)</p>	<p>RISE IN ALLERGIC REACTIONS SINCE GM FOODS APPEARED ON MARKET</p> <p>MAY BE CONNECTION BETWEEN GM FOODS AND ALLERGIES</p> <p>TRANSFERRAL OF UNWANTED GENES</p> <p>(1 point)</p>
ECONOMIC ISSUES	<p>HIGHER YIELDING CROPS</p> <p>COMPANIES MAKE MONEY</p> <p>(1 point)</p>	<p>PRODUCTION OF GM FOODS IS LENGTHY & COSTLY</p> <p>ECONOMIC COSTS OF CREATING A GM FOOD END UP BEING PAID FOR BY FARMER (1 point)</p>

Appendix N

CAEL Questionnaire (Professional Ethics)

Reading One: "Ethics and the Professions"

(17 Points)

Read the questions first and then look for the information in the article. You do not need to write in complete sentences.

Note: Answers are in *italics*.

1. Where would you find this type of reading? Check (✓) one. (1 point)

A business journal

A university textbook

An academic journal

A popular novel

2. According to Andre and Velaquez, what concepts are often mistakenly used in isolation to define ethics? Check (✓) all that apply. (4 points)

Reason

Intelligence

Society's opinions

Law

Emotions

History

Religion

3. What are the two fundamental elements Andre and Velaquez's definition of ethics?

(2

points) Any two

Based on well founded reasons

(1 point)

Well based set of standards of right and wrong

(1 point)

Constant evolution of what is ethical

(1 point)

Acceptable variations

Constant examination of what is ethical (behaviour)

(1 point)

We need to constantly question what ethics is

(1 point)

Standards may vary from culture to culture

(1/2 point)

4. What is professional ethics? (1 point)
A set of standards which apply to particular professions (1 point)
Extension of the concept of ethics that apply to a specific profession (1 point)
Hippocratic Oath (0.5 points)
5. Complete the following chart about case studies involving the incidents where professional ethics was not followed. (4 points)

CASE STUDIES IN PROFESSIONAL ETHICS

Profession	The importance of ethics in the field	Example of not following professional ethics	The Outcome
Engineering	<ul style="list-style-type: none"> Engineers ensure safety standards 	<ul style="list-style-type: none"> Head engineer allowed junior engineer to check safety of building 	<ul style="list-style-type: none"> Building collapsed revoked the head engineers license Head engineer responsible Junior engineer not responsible (any one) <p>(1 point)</p>
Business	<ul style="list-style-type: none"> ethical business practices are necessary if businesses are to maintain good relationships with their customers and remain successful <p>(1 point)</p>	<ul style="list-style-type: none"> failing to monitor labour conditions (1 point) inhumane number of <u>work hours</u> or <u>hourly wage</u> (0.5 points) <p>(1 point)</p>	<ul style="list-style-type: none"> the company suffers enormous economic losses Consumer boycotts the product (any one) <p>(1point)</p>

6. When did ethics become a concern in the professions? (1 point)
Since the 1970s

7. Complete the cause and effect chart on the increasing importance of professional ethics.

(4 points)

CHANGES THAT HAVE AFFECTED THE IMPORTANCE OF PROFESSIONAL ETHICS

Cause	Effect	Example
<ul style="list-style-type: none"> <i>A decline in trust</i> <p>(1 point)</p>	<ul style="list-style-type: none"> Professions forced to acknowledge ethical issues more openly to try to regain public's trust 	<ul style="list-style-type: none"> Public has been bombarded with reports of scandal in professions
<ul style="list-style-type: none"> Rise in consumerism 	<ul style="list-style-type: none"> More rights-oriented society 	<ul style="list-style-type: none"> Individuals or communities are more involved in decision-making processes Patients are more involved in healthcare decisions Large community projects are reviewed by the public before being undertaken <p>(any one)</p> <p>(1 point)</p>
<ul style="list-style-type: none"> More multicultural society 	<ul style="list-style-type: none"> Variation of society's ethical values Traditional values have changed New or diverse viewpoints are created <p>(any one)</p> <p>(1 point)</p>	<ul style="list-style-type: none"> Caused debates about ethical standards Created need for greater respect for and representation of viewpoints
<ul style="list-style-type: none"> Technological advances <p>(1 point)</p>	<ul style="list-style-type: none"> Forced ethical issues to the forefront 	<ul style="list-style-type: none"> Cloning and extension of life in the medical profession

Reading Two: "The Question of Business Ethics in Graduate Business Programs: Schools Talk Back"

Read the questions first and then look for the information in the article. You do not need to write in complete sentences.

Note: All answers and in italics

Look over the article quickly and answer the first three questions.

1. What is the topic of this reading? *(1 point)*

Should business schools teach ethics

2. What is the occupation of the people whose specific quotations are used in this article? *(1 point)*

Professors OR University Employees

Return to the beginning of the article and answer the following questions.

3. According to the article, why did Head Executives place 22nd in the Reader's Digest Poll?
(2 points)

- *Because of unethical business practices*
- *Shady business deals OR not considered trustworthy*

4. Why would business schools not make ethics education a priority? *(1 point)*

A cautious attitude toward change (in curriculum)

OR The nature of academic communities = 1/2 point

5. How does the average citizen feel about ethics education? (1 point)

There should be ethics courses in business programs

6. List the three reasons that business professors resist program changes. (3 points)

- *Want to see research linking ethical training and company profits OR (So far) no strong data linking ethical training and company profits*
- *New programming is costly/expensive OR Costly/expensive to change program*
- *Students are too old/age (to begin learning ethics in business school)*

7. What support does Brian Hindo give for why ethics classes for business students do not work? (1 point)

All fraudulent business executives have had training in ethics (1 point)

Business programs since the 1970s have had some element of ethics instruction (1 point)

Studies have failed to produce data to support the teaching of ethics (0.5 points – pg. 6 of rdg)

8. According to Professor Warrick, a universal definition of ethical behaviour exists. (1 point)

True

False

Does not say

9. Complete the chart on alternatives to business ethics classes mentioned by the article.
(6 points)

ALTERNATIVES TO BUSINESS ETHICS CLASSES

Approach	Example	Advantages	Disadvantages
<ul style="list-style-type: none"> Integrate ethical issues into core classes 	<ul style="list-style-type: none"> Accounting course that looks at case studies of unethical bookkeeping 	<ul style="list-style-type: none"> Not in competition with core classes Costs less (1 point) 	<ul style="list-style-type: none"> Not enough time Extra work for professors to learn about ethics (1 point)
<ul style="list-style-type: none"> Team-teach courses 	<ul style="list-style-type: none"> Full-time ethics professors teach with business professors 	<ul style="list-style-type: none"> Alleviates extra work for existing professors 	<ul style="list-style-type: none"> Schools can't afford 2 professors or would drive up cost of program (1 point)
<ul style="list-style-type: none"> Focus on <u>moral integrity</u> (1 point) 	<ul style="list-style-type: none"> Berkley checks applications for false information 	<ul style="list-style-type: none"> Shows students that integrity is the most important thing 	<ul style="list-style-type: none"> Effect remains to be seen
<ul style="list-style-type: none"> Focus on academic integrity 	<ul style="list-style-type: none"> Signing the Duke Honour Code (at Duke University) (1 point) 	<ul style="list-style-type: none"> Connects classroom theory to actual practice (1 point) 	<ul style="list-style-type: none"> Effect remains to be seen

Appendix O

CAEL Essay Prompts

Reading 1 (Genetically modified foods):

Writing

You have 30 minutes to write an essay agreeing or disagreeing with the following statement:

The advantages of genetically modified foods outweigh the disadvantages.

Please write **one** page.

Do not copy directly from the readings. If you wish to use one or two phrases or sentences to support your point, use quotation marks (“ ”).

If you wish to spend a few minutes reviewing the reading and question booklets and planning your essay, you may use the space below to make notes.

Reading 2 (Professional Ethics):

Writing

You have 30 minutes to write an essay agreeing or disagreeing with the following statement:

The advantages of teaching professional ethics outweigh the disadvantages.

Please write **one** page.

Do not copy directly from the readings. If you wish to use one or two phrases or sentences to support your point, use quotation marks (“ ”).

If you wish to spend a few minutes reviewing the reading and question booklets and planning your essay, you may use the space below to make notes.

Appendix P

Scripted Directions (Study 2)

Thank you for your participation. Today we will be testing your reading and writing skills by having you read a news article and complete two writing tasks based on the article. The first task is a questionnaire, which will have questions based on the content of the article. These are short-answer questions that just require a short sentence to provide an answer. The answers you provide will be scored for accuracy, as there are right and wrong answers for this task.

The next task will have you write a one-page essay based on the readings. I will give you the topic for the essay, so you will not have to devise a thesis statement. You need to base your argument on the facts in the readings, not from other sources (or from your existing knowledge). Scoring of your essay will be similar to marking an assignment for your classes, so please pay attention to the communication of your ideas in a coherent way. Use as much relevant content as possible from the readings to make your arguments; facts from your prior knowledge and research not related to the readings will not count in this essay.

Once your essay is completed, simply save your work and notify me that you have finished the essay. At that point, I will have two follow-up questionnaires for you to fill out. Once the questionnaires are finished, I'll give you a quick debriefing on the study that you just completed. Most people find that it will take the whole 90 minutes to do a good job of the reading/research and writing. Please be sure to edit your work carefully. Grammar and spelling are also part of the criteria for the essay prize.

We expect the process will take approximately 90 minutes to complete. Given that this is a lengthy task, here are three things you should know: 1) The washroom is down the hall to your left for males, and down the hall to your left and up one floor for females; 2) In addition to Microsoft Word for preparing your essay, the computer also has some windows open for you to access the Internet if you want/need to take a break during your work (remember, only information from the readings counts in the essay – don't do outside research for the paper); and 3) I am available in the room next to you if you have any questions.

NOTE: Please do not close any of the open computer windows, as I have other students participating, and I would prefer to spend less time with the computer set-up. I will be next door if you have any questions or concerns about your task. Thank you for your participation and good luck with your questionnaire and essay.

*Appendix Q**Observation Sheet (Study 2)***Observation scoring sheet**

Instructions: Observe the participant every five minutes during the sixty-minute session. After each observation, record whether or not the participant appears to be working on-task. Indicate other in cases where the participant is legitimately not working (i.e., in the washroom, asking a question). For each observation (1-18), circle whether or not the student was on-/off task and leave and the appropriate comments.

Comments

1. On-task	Off-task	_____
2. On-task	Off-task	_____
3. On-task	Off-task	_____
4. On-task	Off-task	_____
5. On-task	Off-task	_____
6. On-task	Off-task	_____
7. On-task	Off-task	_____
8. On-task	Off-task	_____
9. On-task	Off-task	_____
10. On-task	Off-task	_____
11. On-task	Off-task	_____
12. On-task	Off-task	_____
13. On-task	Off-task	_____
14. On-task	Off-task	_____
15. On-task	Off-task	_____
16. On-task	Off-task	_____

17. On-task Off-task _____

18. On-task Off-task _____

Task started:

Task ended:

Total task duration:

Appendix R

Debriefing Script (Study 2)

This script is to be read after the participant completes all tasks for the study.

Thank you for completing the study. Your participation is appreciated. Before you leave, I want to debrief you on some important details about this study.

Originally, I described this study as a reading comprehension and writing task. I also said that we're assessing your ability to complete an essay on a relatively unknown topic, and that the quality of the essay is a primary means of data. While it is true that your essay quality is important data, we are also measuring your ability to stay on-task for this study. I did not tell you that I was monitoring your progress while you were reading and writing. This was done by two methods. The first method of monitoring was on your computer. I had installed an online time-tacking application known as *Rescuetime*. This program recorded the amount of time you were on-task and it also tracked the amount of time spent on other activities on the computer, such as surfing the internet or checking your e-mail. I also monitored your progress by observing you every five minutes through a two-way mirror from the room next door. I used this method to check if you were on-task and to account for any off-task activities that are not related to using the computer, such as texting on your cell phone.

I kept this information from you for two reasons. The first is that it is likely you would feel uncomfortable if you knew I was monitoring you. This would likely change how you would behave and the quality of your work on the questionnaire and essay. The second is that I did not want to encourage or discourage you from taking breaks. It is likely that knowing that you were being monitored in a study of academic procrastination would probably keep you from taking any breaks. In both cases, the end result may not be reflective of how you actually work on an academic task.

The two follow up questionnaires you completed measure your level of trait emotional intelligence (your perceived ability to recognize and use information related to emotions) and academic procrastination. I kept the true nature of the questionnaires secret from you to prevent any bias you may have in completing the questionnaires as well. While this is not true of all participants, some will fake answers in the questionnaires to make themselves look better or to hide some undesirable facts about themselves. I want to thank you for your honesty in completing the questionnaires and to let you know that all your responses are kept confidential.

I sincerely apologize for any inconvenience. At this point, you can exclude yourself from the study and I will destroy all data you have provided. If you decide to withdraw, you will still be entered in the draw to win one of two fifty-dollar cash prizes (or receive course credit in the case of PSYC 1001[2]/2001[2] students).

Appendix S

Debriefing: A study of academic reading and writing (Study 2)

The first task you completed, the reading comprehension and writing activity, was an English Proficiency Test Provided by Carleton University. The questionnaire and the essay that follow the readings allow me to test your ability to answer questions and compose an academic essay based on selected readings. Normally used for International students entering the University, the questionnaire from the test will be evaluated for accuracy and the essay for content, style, and grammar. During this task, you were monitored using an online time-tracking computer program and via a two-way mirror. Monitoring was used to record the time you spent off-task on/off the computer.

The questionnaires you filled out after the English Proficiency test were measures of trait emotional intelligence and academic procrastination. For this study, I predicted that sub-factors of emotional intelligence such as self-control and emotionality would be related to less time-spent off-task and less breaks during the completion of the English proficiency test. I also predict the trait emotional intelligence sub-factors will be associated with higher scores in the English proficiency test. The academic procrastination measure will be used to examine the relations between the scores of a self-report and the time spent off-task on an assignment.

For research issues please contact: Eric Heward (Graduate student, eheward@connect.carleton.ca) or speak to my advisor, Dr. Tim Pychyl at tpychyl@connect.carleton.ca

For any ethical concerns you might have about this study, please contact: Dr. Monique Sénéchal (Ethics Chair, 520-2600, ext. 1155) and Dr. Janet Mantler (Chair, 613-520-2600 ext. 4173).

If after completing this study you feel stressed or concerned about your life at the university, you may want to speak to someone from Student Life Services (Room 420 Tory Building, phone 520-2874 or email experiencesuccess@carleton.ca) or a counsellor or doctor at Carleton University Health and Counselling Services.

For any health related concerns (i.e., emotional or physical) please contact Carleton University Health and Counselling Services, 520-6674.

For academic concerns, please visit the Student Academic Success Centre Web site and book an appointment.

http://www.carleton.ca/sasc/sasc_home/index.html

Finally, for more information about procrastination, please visit the Procrastination Research Group Web site at www.procrastination.ca. THANKS AGAIN FOR YOUR TIME PARTICIPATING IN THIS STUDY!

Appendix T

Study Advertisement (Study 2)

Attention Carleton Students!

Students are needed for psychology research. All volunteers will be asked to finish a reading and writing skills task. The study will take about 90 minutes to complete. All volunteers will have a chance to win a \$50.00 prize!!

Only students that are native speakers of English (i.e., English is your first-language) are eligible for this study.

Please contact Eric Heward (MA student) at eheward@connect.carleton.ca, to book an appointment.

