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Procrastination and the priority of short-term mood regulation:

Consequences for future self

Fuschia M. Sirois
Department of Psychology
Bishop's University

Timothy A. Pychyl
Department of Psychology
Carleton University

Author's Note

Fuschia M. Sirois, PhD, Department of Psychology, University of Windsor; Timothy A. Pychyl Department of Psychology, Carleton University

Correspondence concerning this article should be addressed to Fuschia M. Sirois, PhD, Department of Psychology, University of Sheffield, 309 Western Bank, Sheffield, S10 2TP, United Kingdom

Email: f.sirois@sheffield.ac.uk

Abstract

Procrastination is a common and pervasive problem associated with a range of negative outcomes across a variety of life domains that often occurs when people are faced with tasks that are seen as aversive. In this paper, we argue that as a form of self-regulation failure, procrastination has a great deal to do with short-term mood repair and emotion regulation. Moreover, we contend that a temporal understanding of self and the mood-regulating processes involved in goal pursuit is particularly important in understanding procrastination, because the consequences of procrastination are typically borne by the future self. After summarizing the research on the priority of short-term mood regulation in procrastination, we then draw the connection between the focus on short-term mood repair and the temporal disjunction between present and future selves. We present research that exemplifies these intra-personal processes in understanding temporal notions of self characterized by procrastination, and then link these processes to the negative consequences of procrastination for health and well-being. We conclude with a discussion of possible avenues for future research to provide further insights into how temporal views of the self are linked to the dynamics of mood regulation over time in the context of procrastination.

Consider the following common scenarios:

> After days of saying to yourself "I'll do it tomorrow," it is now the day before your report is due despite your intention to get it done a few weeks ago. However, instead of sitting down to finish it, you decide to get busy catching up answering email with the hope that you will soon feel more in the mood to work on the report.
>
> It's the middle of March, and your intentions to exercise regularly as part of your New Year's resolution to become a "a new, healthier you" have resulted in more time spent worrying about why you haven't used your new gym membership than actually engaging in any form of exercise. Each day is the same, as you think, "I don't want to do this now. I'll feel more like working out tomorrow." The thing is, this delay has meant additional weight gain and lethargy.

The voluntary delay of an intended action despite knowing that one will probably be worse off for the delay illustrated in the above scenarios is how research psychologists have defined procrastination (e.g., Steel, 2007). Choosing to voluntarily delay in spite of our intention reflects a basic breakdown in our self-regulation. This breakdown occurs most often when we are faced with a task that is viewed as aversive (i.e., boring, frustrating, lacking meaning and/or structure), and therefore leads to unpleasant feelings or negative mood. We think it is quite clear that this self-regulation failure has a great deal to do with short-term mood repair and emotion regulation. As Tice and Bratlavsky (2000) have written, "we give in to feel good," and this may be accomplished by avoiding the task.

However, the examples also include an important and often overlooked temporal aspect of procrastination. In both scenarios, an intended task from the past was unnecessarily delayed with the burden for completing the task shifted to some future self that will have to pay the price for the inaction. We believe that tomorrow will be different. We believe that *we* will be different tomorrow; but in doing so, we prioritize our current mood over the consequences of our inaction for our future self.

In this paper, we argue that a fruitful area of investigation to further our understanding of procrastination is in our temporal understanding of self and the intra-personal temporal processes involved in goal pursuit. Moreover, we contend that this perspective is particularly important in understanding procrastination, because the consequences of procrastination are typically borne by the future self. After summarizing the research on the primacy of short-term mood repair in the self-regulation failure we know as procrastination, we then draw the connection between the focus on short-term mood repair and the temporal disjunction between present and future selves. We present research that exemplifies these intra-personal processes in understanding temporal notions of self characterized by procrastination, and then link these processes to the negative consequences of procrastination for health and well-being.

Procrastination: Quintessential Self-Regulatory Failure

Beginning in the 1990's, researchers began publishing studies relating procrastination to both stable personality traits (Schouwenburg & Lay, 1995) and task characteristics (e.g., Pychyl, Lee, Thibodeau, & Blunt, 2000; Scher & Ferrari, 2000). As reviewed in meta-analyses conducted by VanEerde (2003) and Steel (2007), measures of procrastination share variance with some core personality traits, particularly Conscientiousness of the Big Five (e.g., Schouwenburg & Lay, 1995; Watson, 2001), as well as task characteristics such as the timing of associated task rewards

(e.g., O'Donoghue & Rabin, 1999) or the perceived aversiveness of a task (e.g., Blunt & Pychyl, 2000; Lay, 1992). Taken together, this body of research has demonstrated that we are more likely to needlessly delay tasks when we lack self-discipline and/or we are very impulsive, and we are more likely to delay on tasks which we find unpleasant in some regard and/or for which reward for task engagement is temporally delayed. While certainly an oversimplification, this summary statement highlights the correlational nature of this research. What is lacking is an explanation of the processes underlying these relations.

One conception of the intra-psychic process behind this self-regulatory failure is that of the primacy of short-term mood repair over long-term goal pursuit. To the extent that the associated rewards with a task are distal or the task has characteristics that we find objectionable such as a being boring, tedious or difficult, we may experience negative emotions or a negative mood in relation to the task and lack motivation for task engagement. Of course, if we have a great deal of self-discipline and dutifulness, commonly associated with the Big Five trait of Conscientiousness (e.g., Costa, McCrae, & Dye, 1991), we may exert the self-control necessary to engage in the task in a timely manner despite the lack of immediate reward or the negative mood that the task elicits. Procrastination, however, is the lack of this self-control, whether as a state or trait. Procrastination is the self-regulatory failure of not exerting the self-control necessary for task engagement. And, as Tice and Bratslavsky (Tice & Bratslavsky, 2000) have explained, this failure at self-control may be the direct result of a focus on regulating moods and feeling states in the short term.

Tice and Bratslavsky (2000) make the clearest connection in the literature between the self-regulation failure of procrastination and the critical role that emotion regulation plays in self-control. They argue that focusing on regulating mood and feeling states in the short term can lead

to failure of self-control in other areas of our lives. When we are in a bad mood, we want to feel better, but many ways of feeling better involve indulging our appetites that we usually use self-control to resist (e.g., eating sweet foods, shopping for items beyond our financial resources). In terms of procrastination, the argument is that aversive tasks lead to anxiety and worry, and that task avoidance is a strategy to avoid this negative mood. When our focus is on feeling better now, we fail to override our impulse to avoid the task, and "give in to feel good," as Tice and Bratslavsky put it. Experimental work conducted by Tice, Bratslavsky & Baumeister (2001) demonstrated this effect clearly as those participants who underwent a negative mood induction spent more time procrastinating, not preparing for the next task in the study. As the Tice and Bratslavsky conclude, "Even a seemingly artificially induced negative mood proved to be enough to make people postpone an important self-control goal" (2000, p. 153).

It is clear from these studies and related research (e.g., Baumeister, Zell, & Tice, 2007) that unpleasant emotional states tend to cause self-regulation to break down, and that emotion regulation, particularly short-term mood repair, is central to understanding the self-regulatory failure of procrastination. Interestingly, this and related research on ego-depletion has also shown that with rest or particular types of intervention, such as positive mood induction (Tice, Baumeister, Shmueli, & Muraven, 2007) or self-affirmation (Schmeichel & Vohs, 2009), self-regulatory capacity and thus the ability to regulate mood in an adaptive manner is restored. Moreover, other studies indicate that individuals are aware that they are less capable of self-regulation when tired or otherwise depleted (Ferrari & Pychyl, 2007), as is reflected by a conservation of resources when required (Muraven, Shmueli, & Burkley, 2006). Taken together, this research reveals that the present self can face obvious limits to self-regulatory capacity, and when a limit is reached, hope may be focused on the future self who will not be depleted and will

be able to successfully manage the negative moods associated with a challenging or boring task that the present self cannot currently handle.

Ironically, giving priority to short-term mood repair often results in us feeling worse even though immediate affect or mood regulation was a priority. Not only does the procrastination potentially undermine performance with a hasty effort at the last minute, but as Tice and Baumeister (1997) have demonstrated, the overall level of negative affect is likely to be even greater than if we had worked on the task all along. Of course, at the moment, our present self is not anticipating these costs, as these costs are yet a future consequence of "giving in to feel good" now. This, we argue, is a crucial temporal element of procrastination related to the self that we need to understand.

A key to understanding procrastination as a form of self-regulation failure is therefore to place it in a temporal context. Present self benefits from the immediate mood repair, which in the case of procrastination involves needless task delay. In addition, present self does not necessarily anticipate the consequences to the future self (Tappolet, 2010), who then must later still have to deal with the mood repair issues that contributed to procrastinating in the first place. Thus, there are self-relevant temporal aspects of mood repair involved in the processes that underlie procrastination.

Procrastination and the Future Self

From a temporal perspective, the focus on short-term mood repair that characterizes procrastination reflects not just the primacy of immediate mood over longer-term goals and rewards, but a primacy of present self over the needs of the future self. Indeed, research on procrastination and time perspective supports this apparent disjunction between the present and future self. Procrastination has been found to be negatively associated with a future time

perspective and positively associated with a present-hedonistic and present-fatalistic time orientation (Ferrari & Díaz-Morales, 2007; Jackson, Fritch, Nagasaka, & Pope, 2003). Further evidence points to the idea that the present time orientation associated with procrastination is not necessarily a healthy one with respect to mood. For example, one study found that procrastination was negatively associated with mindfulness, a form of adaptive present-focused time orientation (Sirois & Tosti, 2012), and that low mindfulness explained the negative mood state (e.g., feeling stressed) associated with procrastination. Mindfulness has been identified as an important quality for self-regulation, because it reduces stress (Brown & Ryan, 2003) and permits non-judgmental awareness of discrepancies between current and desired future states that can increase persistence on challenging tasks (Evans, Baer, & Segerstrom, 2009). These studies support the notion that procrastination involves attempts to regulate the immediate mood that are not successful despite the primacy of present self's mood over the goals and rewards that future self is expected to achieve.

Difficulty in bridging the gap between the present and future self is one factor that may contribute to the mood and behavior regulation failure that are the precursors and products of procrastination. William James (1890/1981) in his foundational volumes, *The Principles of Psychology,* noted that despite our awareness of having different selves over time, we also have a "consciousness of personal sameness" (p. 331) that helps bridge the gaps among our different temporally extended selves to unite the past, present and future self as one. Yet the perception of the gap between present and future self can also generate negative mood states which can have motivational value if such dissonance is used to fuel behavior change. For example, self-discrepancy-based motivational theories such as possible selves (Markus & Nurius, 1986), and

Higgins' (1987) Self Discrepancy theory posit that the perception of the discrepancy between current and future or not yet achieved desired selves can spur efforts towards closing this gap.

However, with procrastination, the negative mood arising from the awareness of this discrepancy which could generate corrective behavior change becomes untethered from its potential behavior-regulating functions. Instead, negative mood motivates avoidance and disengagement from necessary and intended tasks. The negative mood states may also trigger defensive reactions to protect the current self at the expense of a consideration of the consequences for the future self (e.g., Sirois, 2004a). It is this type of defensive and avoidant reaction to experienced or anticipated negative mood states that is a critical consideration for understanding the misregulation of mood over time that underlies procrastination.

Procrastination and the Processes of Temporal Mood Regulation

Several lines of research support the view that the processes underlying procrastination are driven by a need to regulate the mood of the present self at the expense of the future self. Tasks that are perceived as difficult or challenging can activate negative self-talk that interferes with task persistence (Evans et al., 2009) and, therefore, lead to procrastination. This view is consistent with the theory of metacognitive awareness (Teasdale, Segal, & Williams, 1995), which suggests that the judgmental and reactive thoughts associated with such tasks promote negative states such as frustration and self-criticism that can fuel impulsive decisions to abandon the tasks. Disengagement from the task then becomes an immediate and somewhat expedient way to regulate present self's mood.

The negative mood that is the focus of this misregulation of present mood arises not just from encountering or anticipating a difficult or unpleasant task. There is evidence that this negative mood is also associated with recognizing the consequences of not acting in a timely

manner in the past and the self-judgmental thoughts linked to this awareness. Procrastination is linked to feelings of shame (Fee & Tangney, 2000) and guilt (Blunt & Pychyl, 2005). Recalling past procrastinating behavior increases feelings of anxiety (Lay, 1994), and trying to follow through with previously delayed tasks can contribute to worry and anxiety (Ferrari, 1991; Solomon & Rothblum, 1984) and negative self-evaluations (Flett, Blankstein, & Martin, 1995; Flett, Stainton, Hewitt, Sherry, & Lay, 2012; Stainton, Lay, & Flett, 2000). Acknowledging that one has not followed through with tasks that should be completed has also been directly linked to feelings of self-blame (Wohl, Pychyl, & Bennett, 2010) which in turn predicts stress and anxiety (Sirois & Stout, 2011). Similarly, a meta-analysis of four studies found that procrastination was associated with low self-compassion (average r = -.31) suggesting that self-kindness and self-acceptance may be difficult for those who needlessly delay (Sirois, under review).

But whether negative mood arises from the task itself or the awareness of the consequences of the past self's procrastination, protecting present self from the experience of such unpleasant states appears to take precedence. Inertia inaction is one example of how self-protection from negative mood states may contribute to procrastination. According to Tykocinski and Pittman (1998) lost opportunities such as those resulting from taking timely action produce unpleasant feelings of regret which can set the stage for future inaction if a situation similar to the lost opportunity is encountered. Even though there may be an opportunity to still complete a task, albeit not on time, taking action is avoided so as to mitigate the feelings of regret that will surface by engaging in this task and being reminded of the lost opportunity to act in a more timely manner. Not completing a task on time can, therefore, lead to a perpetuation of procrastination and a cycle of "doing nothing" to protect oneself from these unpleasant feelings (Tykocinski & Pittman, 1998).

Research on counterfactual thinking provides another explanation of how the misregulation of present mood may promote procrastination. Counterfactual thoughts are a type of mental simulation that compares unfavourable outcomes that did occur in the past to possible better (upward, "if only" statements) or worse (downward, "at least" statements) outcomes that might have occurred. In doing so, these counterfactuals highlight the discrepancies between the past, present and possible future outcomes that may have been had we acted differently (or at all). As previously noted, awareness of this discrepancy can be a source of negative affect that can trigger either corrective action geared towards improving circumstances for the future self or more defensive self-protective responses to help present self escape the negative mood state.

Upward counterfactuals can makes us feel worse as we ponder what we should have done but did not (Roese, 1997), and can therefore play a role in correcting future behavior by highlighting actions that can improve future outcomes (Boninger, Gleicher, & Strathman, 1994; Gleicher, Boninger, Strathman, Armor, & Ahn, 1995; Roese, 1994). After failing to act in a timely manner to complete an important task, generating an upward counterfactual such as "If only I had started sooner" could help motivate corrective action to improve the timing and planning of similar tasks in the future and help avoid future procrastination. Upward counterfactuals, therefore, highlight personal culpability in the less than desirable past outcomes, but also contribute to feelings of guilt and self-blame which may or may not enhance motivation to change future behaviour (Sirois, Monforton, & Simpson, 2010).

In contrast, downward counterfactuals can help dispel these negative states by highlighting how the current outcome, although negative, could have been much worse. Statements such as "at least I didn't fail the exam" may be an effective way to strategically repair mood and restore a positive sense of self following poor performance (Markman, Gavanski,

Sherman, & McMullen, 1993; Roese, 1994; Sanna, Turley Ames, & Meier, 1999). However, this type of counterfactual often comes with a motivational cost (McMullen & Markman, 2000) that can directly impact the future self.

Relevant for our discussion of procrastination, there is evidence that the counterfactuals generated by procrastinators contribute to the temporal misregulation of mood, that is, mood repair for the present self at the expense of the well-being of the future self. When asked to generate counterfactuals about how things could have been better (upward) or worse (downward) in response to two anxiety-provoking scenarios, procrastinators in one study favored making immediate mood-repairing downward counterfactuals over future behavior-correcting upward counterfactuals (Sirois, 2004a). Although this may appear to be just a case of mood repair in response to a negative event, there was also evidence that the downward counterfactuals served a self-enhancement function. Procrastination was more strongly linked to making mood-repairing downward counterfactuals in response to a scenario involving procrastination than it was for a general anxiety scenario. This suggests that the counterfactuals were used to strategically protect the procrastinators' self-concept by focusing on how the consequences of needless delay could have been worse. Despite the immediate benefit to the present self, this type of counterfactual strategy may perpetuate the temporal self-regulation difficulties associated with procrastination if the worse possible outcome is contrasted to, rather than assimilated with, the actual outcome. As McMullen and Markman (2000) have noted, such counterfactuals can promote complacency and diminish motivation to change behavior rather than provide a wake-up call for change. For the procrastinator this may mean that less consideration is given to changing behaviors that might affect the well-being of the future self.

Task disengagement, inaction inertia, and self-esteem repairing counterfactual thoughts are not the only short-term mood repair strategies that can contribute to procrastination. The self-regulation difficulties that underlie procrastination can also lead to problems in resisting the temptation of activities that appear more enjoyable than an impending unpleasant task with no immediate reward. As previously noted, this "giving in to feel good" (Tice & Bratslavsky, 2000) means that the present self maximizes feeling good now at the expense of the future self. For procrastinators, susceptibility to pleasurable temptations that derail following through with important tasks can occur despite previous strong intentions to complete such tasks. For example, Dewitte and Schouwenburg (2002) found that although academic procrastinators did not intend to study less or postpone studying until just before exams, they nonetheless did. The primary reason was a susceptibility to temptations, especially those of a social nature.

The reasons why procrastinators are susceptible to goal-derailing temptations may involve more than just trying to escape the unpleasant feelings associated with a task. In one prospective study of adults attempting to make intended healthy changes over a six month period, those scoring high on a scale of trait procrastination were less likely to be successful in following through with their healthy change (Sirois, Guigere, & Eren, in revision). Interestingly, procrastination was correlated with susceptibility to positive social temptations, but not temptation susceptibility due to negative mood states, suggesting that just feeling bad about a task may not be the only motivation to avoid it through procrastination. The importance of positive mood states for explaining temptation susceptibility was further underscored by the finding that loss of task enjoyment rather than increased task frustration explained why procrastinators were more susceptible to positive social temptations. Thus, loss of immediate

pleasure associated with performing a task especially when a more pleasurable activity is looming may also contribute to procrastination.

Loss of positive mood states may also play a role in reducing procrastination if it is associated with the *act* of procrastinating rather than the task itself. In a study that examined how procrastination was linked to social emotions (Guigere, Sirois, & Lalonde, in preparation), students described a recent situation in which they delayed working on an important task to engage in activities that were easier or more fun. They then rated the extent to which they felt their procrastination transgressed social norms, their social emotions regarding the delay, and the expected positive and negative outcomes associated with their procrastination. Not surprisingly, perceiving that procrastination went against social norms was associated with feelings of guilt and shame which in turn predicted negative expected outcomes from procrastination. However, perceiving procrastination as something socially unacceptable also predicted fewer positive outcome expectancies from procrastinating and this link was best explained by a loss of pride, a positive social emotion. What is perhaps more telling is that expecting fewer positive outcomes rather than more negative outcomes predicted *less* actual procrastination the next day. These findings suggest that loss of positive feelings and expecting fewer positive benefits from procrastination, rather than negative mood and expecting more negative consequences, may reduce procrastination. This notion is consistent with the research on procrastination and counterfactuals which indicates that negative mood states arising from recognizing one's procrastination may actually promote rather than prevent future procrastination (Sirois, 2004a).

Consequences of Procrastination for Health and Well-being

If we envision procrastination as giving priority to regulating the mood of the present self and thus giving less importance to the future self, then it is not surprising that procrastination has

been linked to a variety of poor health and well-being outcomes. With respect to mental well-being, procrastination is associated with poor mental health (Stead, Shanahan, & Neufeld, 2010), anxiety and depression (Ferrari, 1991; Haycock, McCarthy, & Skay, 1998; Lay, Edwards, Parker, & Endler, 1989; Martin, Flett, Hewitt, Krames, & Szanto, 1996; Senecal, Koestner, & Vallerand, 1995), and stress (Flett et al., 1995; Sirois, Melia-Gordon, & Pychyl, 2003; Tice & Baumeister, 1997).

Failure to regulate the self over time may also have a number of consequences for physical health and well-being. The links between procrastination, stress and health were first noted by Tice and Baumeister (1997) in a longitudinal study of student procrastinators, however the hypothesized role of stress was not fully tested. Based on theory linking personality to health in general (Contrada, Leventhal, & O'Leary, 1990; Friedman, 2000; Sergerstrom, 2000), and to behaviors that put one at risk for poor health (Suls & Rittenhouse, 1990), the procrastination-health model (Sirois et al., 2003) proposed that procrastination confers risk for poor health-related outcomes through both direct (stress) and indirect (behavioral) routes. We next consider evidence suggesting how these two routes might explain why failure to regulate the self over time confers risk for poor health and well-being.

Prioritizing the mood of the present self over a consideration of the future self means that there is no reason to engage in behaviors that will improve the well-being of the future self. In short, tasks that are key for the maintenance of good health may be put off if they are viewed as difficult or unpleasant. Several studies illustrate this point quite clearly by demonstrating that procrastination is associated with problems engaging in a variety of preventive and health-protective behaviors. For example, procrastinators are less likely to seek necessary medical (Sirois, 2007a; Sirois et al., 2003), dental (Sirois, 2007a), or mental health care (Stead et al.,

2010), despite the fact that not engaging in these behaviors can negatively impact current and future health and well-being. Procrastinators also tend to not practice important household safety behaviors such as changing smoke detector batteries or taking care of household hazards, even when neglecting these behaviors in the past resulted in household accidents causing personal harm or property damage (Sirois, 2007b). Thus, the knowledge of threats experienced by the past self is not enough to change the procrastinator's current behavior to prevent the re-occurrence of such threats to the future self. This is one of the reasons that we typically see procrastination as a self-defeating temporal choice.

The range of health behaviors that procrastinators fail to regularly engage in also includes those known to maintain health and reduce the risk of disease. Procrastination is associated with the practice of fewer wellness-promoting behaviors such as exercising regularly, healthy eating, reducing caffeine intake, getting sufficient sleep, and managing stress in both correlational (Sirois, 2004b, 2007a; Sirois et al., 2003) and longitudinal studies (Sirois et al., in revision; Sirois, Voth, & Pychyl, 2009). However this failure to self-regulate important health-promoting behaviors is neither simply out of lack of interest or intention, nor lack of knowledge about the consequences of not practicing health-promoting behaviors. Rather, it appears that the problem rests with the quality of intentions that are formed and/or the ability to follow through with intended health behaviors. For example, in one study, students recalled a negative health experience such as an illness or accident. After listing health behaviors that, if performed, would have reduced the unpleasantness of or avoided the incident altogether, they rated their intentions to perform the most important behaviors listed (Sirois, 2004b). Consistent with the notion of inaction inertia, procrastination was associated with *weaker* intentions to perform this behavior in the future, and low health-related self-efficacy explained this link.

As a form of failure to regulate the self over time, procrastination is associated with the generation of unnecessary stress that can directly impact health and well-being by suppressing immune functioning and increasing vulnerability for illness. Procrastination has been linked to increased levels of perceived stress in samples of students (Flett et al., 1995; Rice, Richardson, & Clark, 2012; Sirois et al., 2003; Sirois & Tosti, 2012; Tice & Baumeister, 1997) and adults from the community (Sirois, 2007a; Sirois & Stout, 2011). In support of the procrastination-health model, there is evidence that stress mediates the link between procrastination and poor health in several cross-sectional studies (Sirois, 2007a; Sirois et al., 2003; Sirois & Stout, 2011; Sirois & Tosti, 2012) and at least one longitudinal study (Sirois et al., 2009).

Ostensibly the source of procrastinators' stress can be viewed as emanating from their tendency to delay necessary and important tasks across a variety of life domains. For example, dealing with the personal (Solomon & Rothblum, 1984) and social (Fee & Tangney, 2000; Ferrari, Harriott, & Zimmerman, 1999) consequences of delaying tasks can generate unnecessary stress. Missing work-related deadlines, not paying bills on time, failing to fulfill social obligations in a timely manner, and putting off health-related behaviors all come with a cost to the self, specifically the future self, and potentially to others that can be stressful. Some of this stress may be experienced as one rushes to try and meet approaching deadlines, having left important actions related to task completion until too late. Although some may argue that this type of stress may actually fuel their motivation to perform well on such tasks by enhancing their performance, recent research evidence suggests that this arousal-based perspective on procrastination is unfounded (Simpson & Pychyl, 2009; Steel, 2010), and that this type of reasoning is more often than not an ad hoc excuse to save face after procrastinating.

One way to view this particular type of stress is that it is self-generated, that is, it arises from the act of procrastination and the actual and/or anticipated consequences associated with delaying important tasks. Indeed even anticipating a negative outcome in the future whether or not it occurs can be just as stressful as actually experiencing this negative outcome, and often more so (Wirtz et al., 2006; Wirtz et al., 2007). Further support for the notion that procrastination-related stress is self-generated is demonstrated by research on procrastinatory cognitions, a particular type of negative automatic thoughts that involve ruminating over past procrastination (Stainton et al., 2000). Such thoughts have been found to mediate the link between procrastination and negative affect (Stainton et al., 2000) and have been linked to feelings of stress and distress (Flett et al., 2012). Viewed from a temporal perspective, the present self must face the consequences of the poor inter-temporal choices made by the past self that resulted in task delay and acknowledge that the negative consequences are self-generated, and therefore avoidable. For some individuals this acknowledgement may lead to negative and stressful self-evaluative cognitions. As noted previously, procrastination is linked to stressful negative states such as shame (Fee & Tangney, 2000), guilt (Blunt & Pychyl, 2005), worry and anxiety (Ferrari, 1991; Solomon & Rothblum, 1984), and negative self-perceptions which may increase stress (Flett et al., 2012; Sirois, under review; Sirois & Stout, 2011; Sirois & Tosti, 2012), and even increase procrastination (Guigere et al., in preparation).

Conclusions and Future Directions

In this paper, we have argued that procrastination may be best understood as a form of self-regulation failure that involves the primacy of short-term mood repair and emotion regulation over the longer-term pursuit of intended actions. We have also proposed that a temporal understanding of self and the intra-personal temporal processes involved in goal pursuit

are necessary to gain a more complete understanding of the nature and consequences of procrastination. If we envision procrastination this way, that is, as prioritizing the regulation of the mood of present self over the consequences to the future self, then current research indicates that increases or decreases in different mood states may prevent or promote future procrastination. Negative mood states associated with a task in the present (Blunt & Pychyl, 2000; McCown, Blake, & Keiser, 2012), and perhaps the future (Flett et al., 2012), and with the act of procrastination in the past (Lay, 1994; Tykocinski & Pittman, 1998), appear to promote procrastination (Stainton et al., 2000), whereas reducing negative affect about past procrastinating can reduce procrastination (Wohl et al., 2010). However, loss of positive mood states associated with a present task appear to promote procrastination (Sirois et al., in revision), whereas loss of positive mood states associated with the act of procrastination appear to curb future procrastination (Guigere et al., in preparation).

Although research has found that procrastination is associated with less consideration of the future consequences of current behavior (Sirois, 2012), we know very little about the dynamics of mood regulation over time with respect to how consideration of the future self is linked to procrastination. Research that specifically examines this issue would, therefore, help clarify the nature of the processes suggested by our current and somewhat limited knowledge on procrastination and mood regulation. Ongoing research focused on the extent to which procrastinators consider their future selves in the choices they make aims to provide some insights into this important issue.

Another important area for future investigation is how procrastination is related to changes in mood and its regulation and different time-related self-perceptions over the course of a task. As several studies have demonstrated, a task that is viewed as unpleasant or challenging

now may be avoided and never started to help regulate the negative feelings associated with it (Blunt & Pychyl, 2000; Pychyl et al., 2000). However, procrastination may also result if a task which was not necessarily difficult or unpleasant initially becomes at some point less enjoyable than what it was at the onset. Indeed, there is research demonstrating that task aversiveness, and therefore procrastination varies across the different stages of goal completion (Blunt & Pychyl, 2000). However, whether task enjoyment similarly waxes and wanes across goal stages and how this may be linked to procrastination and future perceptions of the self has yet to be fully investigated**.**

Future research might address these issues by investigating how task management itself may regulate short-term mood. A popular example of this approach is John Perry's notion of "structured procrastination." Perry (2012) argues that in an effort to avoid doing a task, which we might view as important and time urgent but aversive, we do other tasks on our to-do list instead. The interesting thing about the avoidance inherent in "structured procrastination" is that we may salvage both our image of self and our emotions, because getting other tasks done leads to feelings of accomplishment and progress (we are not idle procrastinators, we actually get a lot done) that research has shown fuels well-being (Deci & Ryan, 2000; Sheldon & Houser-Marko, 2001; Wiese, 2007). Exploring how we prioritize action on our tasks or goals based on their potential for mood-regulation as opposed to some notion of task importance may help us understand why it is present self decides to alphabetize a play list on our MP3 player while leaving a manuscript revision to future self.

In the end, we think that the more our research can focus on the intra-personal processes involved in self-regulation failure, the closer we will get to understanding important aspects of the temporally-extended self. Despite James' (1890/1991) commonsense assertion that we have a

"consciousness of personal sameness," we need to understand those moments when we experience discrepancies in this "sameness" between present and future selves, as these discrepancies serve to both motivate and defeat us.

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