

## Self-Regulation and Academic Procrastination

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**ABSTRACT.** The role of autonomous self-regulation as a predictor of academic procrastination was assessed. French-Canadian students from a junior college ( $N = 498$ ) completed the Academic Motivation Scale as well as an academic procrastination scale and other measures (anxiety, self-esteem, and depression) that have been found to be related to fear of failure. Correlation results indicated that students with intrinsic reasons for pursuing academic tasks procrastinated less than those with less autonomous reasons (external regulation and amotivation). Regression results indicated that the measures of depression, self-esteem, and anxiety accounted for 14% of the variance in academic procrastination, whereas the self-regulation variables accounted for 25%. These results support the notion that procrastination is a motivational problem that involves more than poor time management skills or trait laziness.

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IT IS DIFFICULT to think of individuals who never procrastinate. In fact, procrastination is so common that if someone were to answer "True" to an item such as "I never procrastinate," it would elicit a suspicion that the person was either lying or responding in a socially desirable fashion. Because it is such a universal human foible, procrastination represents a particularly interesting problem in self-regulation.

Procrastination involves knowing that one is supposed to perform an activity (such as reading a novel for a literature course), and perhaps even wanting to do so, yet failing to motivate oneself to perform the activity within the desired or expected time frame. Procrastination typically involves delaying the start of a

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task until one experiences distress about not having performed the activity earlier. Solomon and Rothblum (1984) defined procrastination as "the act of needlessly delaying tasks to the point of experiencing subjective discomfort" (p. 503).

Procrastination is especially common in the academic domain. Ellis and Knaus (1977) estimated that 95% of American college students procrastinate. In Solomon and Rothblum's (1984) survey, 50% of students reported that they procrastinated on academic tasks at least half the time, and an additional 38% reported procrastinating occasionally. Faculty estimates of student procrastination were even higher. Procrastination was more common for term papers than for studying for exams or doing weekly assignments.

Rothblum, Solomon, and Murakami (1986, p. 387) defined academic procrastination as the "tendency to (a) always or nearly always put off academic tasks, and (b) always or nearly always experience problematic anxiety associated with this procrastination." They suggested that academic procrastination can be assessed with straightforward self-report questionnaires. Such self-reports appear to be reliable and have been shown in three separate studies to be significantly positively associated with actual behavioral procrastination, as assessed by the tardiness with which students handed in papers or assignments (Beswick, Rothblum, & Mann, 1988; Rothblum et al., 1986; Solomon & Rothblum, 1984). Self-reported procrastination has also been shown to be significantly negatively related to school performance (Beswick et al., 1988). Furthermore, trait procrastinators also exhibit a greater likelihood of being behind schedule on their personal projects (Lay, 1990), studying for an examination for fewer hours than intended (Lay & Burns, 1991), and turning in their completed questionnaires later than others (Ferrari, 1992).

### *Why Do People Procrastinate?*

Most people have some implicit theory about why they procrastinate. Burka and Yuen (1982, p. 32) noted that those who have serious problems with procrastination generally tend to attribute their difficulties to personality flaws, such as being lazy, undisciplined, or not knowing how to organize their time. On the basis of their counseling experiences with procrastinators, Burka and Yuen dismissed such self-blaming explanations and asserted, instead, that "procrastination is not just a bad habit but a way of expressing internal conflict and protecting a vulnerable sense of self-esteem."

Empirical research focusing on academic procrastination supports the notion that procrastination is a motivational problem that involves more than poor time management skills or trait laziness. Solomon and Rothblum (1984) showed that, although students endorsed many different reasons for procrastinating, the majority of reasons were related to fear of failure (e.g., performance anxiety, perfectionism, and lack of self-confidence). In line with this finding, research on academic procrastination has consistently found that students who procrastinate

a great deal score significantly higher than other students on trait anxiety and depression, and significantly lower on self-esteem (Beswick et al., 1988; Rothblum et al., 1986; Schouwenburg, 1992, in press; Solomon & Rothblum, 1984). Anxiety, depression, and low self-esteem can be conceptualized as personality factors reflective of fear of failure.

We suggest that other motivational factors besides fear of failure may contribute to the problem of academic procrastination. Recent research has suggested that the way students regulate their behavior can have powerful effects on academic outcomes such as curiosity, persistence, learning, performance, affect, and self-esteem (Vallerand & Bissonnette, 1992; Vallerand et al., 1992). Self-regulation concerns the way individuals make use of internal and external cues to determine when to initiate, when to maintain, and when to terminate their goal-directed actions. A comprehensive theory of self-regulation has been offered by Deci and Ryan (1985, 1987, 1991).

### *Self-Determination Theory*

In their self-determination theory, Deci and Ryan (1991) distinguished between intrinsic motivation (doing something for the sheer pleasure that it brings or because of interest) and extrinsic motivation (the actions or behaviors a person engages in that are coerced or seduced by external forces). Although the relation of external controls to intrinsic motivation is complex, a number of studies have shown that providing an external reward for performing a particular activity the person already finds interesting will decrease the person's intrinsic motivation for that activity (Koestner & McClelland, 1990). Individuals come to believe that they are performing that activity not because they like to but because they want the external reward.

One of the realities of life, however, is that many activities in which children and adults are required to engage in are not, in and of themselves, intrinsically motivating. For example, although most children enjoy painting and drawing, they typically do not find learning the multiplication tables intrinsically motivating. Yet, for society to function properly, both children and adults must sometimes perform activities that are not intrinsically pleasurable. Initially, external regulation of behavior is required, but it is generally hoped that over time, external regulations concerning rules of conduct will become internalized.

Internalization is defined as the process by which people actively transform external regulations into internal regulations (Deci & Ryan, 1991; Ryan, 1992). It represents a shift from an external control of a person's behavior to an internal control of the behavior. Most people do their homework when they are young because their parents tell them to do so and they do not want to upset them. As children grow older, they no longer study because their parents and teachers compel them to but because they come to view their studies as personally valuable and important. As individuals more fully internalize a behavior, they gain a

greater sense of autonomy, or self-initiation (Deci & Ryan, 1991). Self-determination theory proposes that there are five types of self-regulation that can be arranged along a continuum of autonomy. From least autonomous to most autonomous, these are amotivation, external regulation, introjected regulation, identified regulation, and intrinsic regulation.

Amotivated behaviors are the least autonomous because there is no sense of purpose, no expectation of reward, and no perceived opportunity to change the course of events. An example of an amotivated reason for studying is "I don't know why I study, I don't see what it does for me."

External regulation refers to behavior that is controlled through rewards or constraints imposed by others. "I study so that my parents don't get angry with me."

Introjected regulation refers to behavior that has been internalized but not fully accepted as originating from the self: "Because I would feel guilty if I didn't." The external constraints on the behavior are internalized and now act as internal constraints. If the person does not engage in that behavior, he or she will experience feelings of guilt (Ryan, 1982).

Identified regulation refers to a condition in which the person realizes the behavior is important and that it ties in to his or her values and goals. The person therefore accepts the behavior as originating from the self. "I choose to study because it's important to me."

Intrinsic motivation refers to behaviors that are engaged in for their own sake, for the pleasure and satisfaction derived from performing them (Deci, 1971). Students may do their homework because they find it interesting and satisfying to learn more about certain subjects.

Self-determination theory (Deci & Ryan, 1991; Ryan, 1992) proposes that autonomous forms of self-regulation can be distinguished from nonautonomous ones in three ways. First, when people have autonomous reasons for engaging in an activity, they are likely to show greater initiative and persistence than when they feel controlled or amotivated (Deci & Ryan, 1987). Second, when they engage in an activity for autonomous reasons, they are likely to experience generally positive emotions, such as interest and enjoyment. By contrast, nonautonomous forms of self-regulation are likely to be associated with negative and conflicted emotions (Ryan & Connell, 1989). Finally, it has been shown that autonomous forms of self-regulation are associated with more integrated and consistent behaviors than are other forms of self-regulation (Koestner, Bernieri, & Zuckerman, 1992; Koestner & Zuckerman, 1993; Ryan, Koestner, & Deci, 1991).

Several researchers have attempted to identify the type of self-regulation behind a particular behavior by simply asking people the reasons they have for engaging in that behavior. Two different scales have been developed to assess self-regulation in the academic domain. Ryan and Connell (1989) developed a scale for assessing reasons for pursuing academic activities in school-age children, and Vallerand and his colleagues developed one for college students. The scales have been shown to be reliable, to conform to the expected simplex

pattern of correlations, and to possess good predictive validity across a diverse set of academic activities. Thus, more autonomous forms of self-regulation, such as intrinsic and identified regulation, have been associated with enjoyment of academic activities and increased feelings of competence, better concentration, better grades, and more time spent on academic tasks (Ryan & Connell, 1989; Vallerand, Blais, Brière, & Pelletier, 1989; Vallerand et al., 1992, 1993). In a prospective longitudinal study by Vallerand and Bissonnette (1992), higher levels of autonomy were found to be positively related to long-term persistence in an academic program.

We hypothesized that procrastination is another outcome that may be associated with self-regulation styles in the academic domain. We suggest that needlessly delaying academic tasks involves all three of the motivational difficulties that have been associated with nonautonomous forms of self-regulation. Thus, students who procrastinate are unable to sustain their initiative in pursuing academic goals. Students who are amotivated or who regulate their behavior primarily on the basis of extrinsic contingencies will wait until the last minute to begin their academic tasks because only then will they feel the pressure to act. By contrast, students with identified or intrinsic reasons prefer to feel supported rather than pressured and can be expected to initiate their activities in a more timely fashion, even when the activities are somewhat aversive.

Because students at the college level are attending school voluntarily and have registered for courses, one can assume that this lack of initiative represents a failure to behave consistently with their goals and beliefs. It can be further assumed that a lack of positive feelings or the presence of conflicted feelings about course material is playing a role in the procrastination. Thus, the three hallmarks of nonautonomous forms of self-regulation—lack of task initiative, negative or conflicted task emotions, and inability to behave consistently with attitudes or goals—are each readily implicated in the problem of academic procrastination.

In the present study, we sought to understand procrastination, not by asking students why they procrastinated, as Rothblum et al. (1986) did, but by asking them why they were pursuing their academic activities in the first place. We hypothesized that more autonomous forms of self-regulation, such as intrinsic and identified regulation, would be associated with lower rates of academic procrastination, whereas the less autonomous forms of self-regulation, such as extrinsic regulation and amotivation, would be associated with higher rates of procrastination.

## Method

### *Participants*

The questionnaire was completed by 498 French-Canadian students from a junior college in the Montreal area. Seventy-four percent of the participants were women, with a mean age of 18.6 years.

### *Procedure*

In the second month of the winter term (February 1991), students were asked to complete the questionnaire packets, which were administered by two trained experimenters according to standardized instructions. The purpose of the questionnaire was said to be to gain a better understanding of college students' feelings and behaviors related to school activities. The questionnaire took 20 min to complete. All responses were anonymous and confidential.

### *Measures*

*Academic Motivation Scale (AMS).* We used the French version of this scale, *l'Échelle de Motivation en Éducation*. This scale has been validated in French (Vallerand et al., 1989) and in English (Vallerand et al., 1992). It was developed by Vallerand et al. (1989) to assess students' self-regulation styles as applied to academic activities. The original version consists of seven subscales assessing three types of intrinsic motivation (motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic regulation (external, introjected, and identified), and amotivation. In the present study, only four types of regulation were assessed: intrinsic motivation to know, external regulation, identified motivation, and amotivation. On the AMS, respondents are asked: "Why are you going to school?" Four possible responses are given for each of the four regulation styles, yielding a 16-item scale. All items are answered on 7-point scales that range from *not at all* (1) to *exactly* (7). The internal reliabilities for the four subscales were adequate in the present study: for the intrinsic scale,  $\alpha = .89$ ; for the identified regulation scale,  $\alpha = .61$ ; for the external regulation scale,  $\alpha = .80$ ; and for the amotivation scale,  $\alpha = .84$ .

*Academic procrastination scale.* In line with Solomon and Rothblum's (1984) definition, we assessed academic procrastination with a 10-item self-report questionnaire that taps both the extent to which students delay academic activities and the extent to which such delays result in anxiety or guilt. All items required the participants to indicate their responses on 7-point scales that range from *strongly disagree* (1) to *strongly agree* (7). Examples of items include "The night before an exam I often feel guilty for not having studied enough" and "I can easily manage my time in order to be on schedule in my studies" (reverse scored).

In a preliminary study with 160 participants from the same educational system, the academic procrastination scale was shown to be highly internally reliable (Cronbach's  $\alpha = .88$ ). It also correlated with dispositional variables reflecting fear of failure in the expected manner. As in previous studies, academic procrastination was significantly associated with anxiety, depression, and low self-esteem (see Table 1).

*Self-Esteem Scale.* This scale is a five-item French version of Rosenberg's (1965) Self-Esteem Scale developed by Vallières and Vallerand (1990). The scale assesses global self-esteem (e.g., "I think I have a lot of good qualities"), using 5-point scales that range from *strongly disagree* (0) to *strongly agree* (4). The scale is highly internally consistent (Cronbach's  $\alpha = .88$ ).

*Depression scale from the Hopkins Symptoms Checklist.* Six items assessing depressive symptoms were taken from the full scale (Derogatis, Lipman, Rickels, Uhlenhuth, & Cori, 1974) and translated into French. Participants indicated the extent to which they had been bothered by symptoms (such as sadness) in the past 7 days on a 5-point scale that ranges from *not at all* (0) to *extremely* (4). The six-item scale showed an acceptable level of internal consistency ( $\alpha = .78$ ).

*Clinical Anxiety Scale.* Five items from the scale (Weisthuis & Thyer, 1989) were translated into French. All items reflect the frequency and intensity of anxious feelings (e.g., "Generally in my life, I feel anxious"). Responses were made on 5-point scales that range from *not at all* (0) to *extremely* (4). The internal reliability of this scale is high ( $\alpha = .86$ ).

*Demographic questionnaire.* Participants were asked to indicate their age, sex, area of residence, grades, and how many semesters they had completed.

## Results

### Correlation Analyses

To provide a preliminary assessment of the validity of the scales used in this study, we computed the correlations among the four self-regulation scales, the three scales reflecting fear of failure (anxiety, depression, and low self-esteem),

**TABLE 1**  
Correlations Between the Procrastination, Anxiety, Self-Esteem, and Depression Scales in the Preliminary Sample

Scale	1	2	3	4
1. Procrastination	—	.22**	-.21*	.27**
2. Anxiety		—	-.33**	.49**
3. Self-Esteem			—	-.28**
4. Depression				—

Note.  $N = 160$ .  
\* $p < .05$ . \*\* $p < .01$ .

and the measure of academic procrastination. As in previous studies (see Table 2), academic procrastination was significantly associated with anxiety, depression, and low self-esteem. Three of the four self-regulation scales were significantly associated with academic procrastination. As predicted, amotivation and external regulation in the academic domain were significantly positively associated with academic procrastination. Also as predicted, intrinsic motivation was significantly negatively associated with level of academic procrastination. Contrary to our prediction, identified motivation was not associated with procrastination.

Because women have generally been reported as being more intrinsically motivated than men and less externally regulated and amotivated with regard to academic activities (Connell & Ryan, 1986; Senécal, Vallerand, & Pelletier, 1992; Vallerand et al., 1989, 1992; Vallerand & Bissonnette, 1992) than men, we expected that they would procrastinate less. A *t* test revealed a significant difference between men and women on procrastination,  $t(480) = 3.38, p < .001$ . As expected, women ( $M = 43.56$ ) procrastinated less than men ( $M = 47.30$ ).

Beswick et al. (1988) found that procrastination is detrimental to academic performance. In the present study, procrastination was significantly negatively correlated with grade point average ( $r = -.41, p < .01$ ).

#### *Relations Between Predictor Variables and Procrastination*

A hierarchical multiple regression analysis was used to examine the unique effects of self-regulation styles on academic procrastination. Participants' scores on the three personality factors associated with fear of failure (anxiety, depression, and self-esteem) were entered together as Step 1. Scores on the four self-regulation styles were entered together as Step 2. This analysis yielded a highly significant multiple correlation of .50,  $F(7, 461) = 21.73, p < .0001$ . The variables entered at Step 1 (anxiety, depression, and self-esteem) accounted for 14% of the variance ( $p < .0001$ ), and the self-regulation variables entered at Step 2 resulted in a significant change in variance ( $R^2 = .25, p < .0001$ ). Furthermore, each of the specific self-regulation styles was significantly related to procrastination: intrinsic motivation,  $t(461) = -5.53, p < .0001$ ; identified motivation,  $t(461) = 2.93, p < .01$ ; external regulation,  $t(461) = 2.53, p < .01$ ; and amotivation,  $t(461) = 3.26, p < .001$ . The standardized regression coefficients for each of the predictor variables are presented in Table 2. The results were nearly identical when sex and grade point average were included as predictor variables.

#### *Examining Suppression Effects Related to Identification*

The relation between identified motivation and procrastination was quite different in the simple correlation analysis and the regression analysis. Whereas identified motivation was very slightly negatively related to procrastination in the



TABLE 2  
Correlations Between the Self-Esteem, Anxiety, Depression and Self-Regulation Scales, Along With  
Their Multiple Regression Beta Weights

Scale	1	2	3	4	5	6	7	8	$\beta$
1. Procrastination	—	-.21**	.31**	.28**	-.28**	-.03	.17**	.26**	
2. Self-Esteem		—	-.34**	-.34**	.18**	.15**	.04	-.23**	-.022
3. Anxiety			—	.47**	-.11*	-.07	.05	.14**	.179**
4. Depression				—	-.06	-.06	.06	.19**	.188**
5. Intrinsic motivation					—	.44**	-.04	-.35**	-.259**
6. Identified motivation						—	.23**	-.38**	.144**
7. External regulation							—	.05	.108**
8. Amotivation								—	.150**

Note. N = 496. Procrastination was the criterion variable in the regression analysis.  
\*p < .05. \*\*p < .01.

correlation analysis ( $r = -.03$ ), it was significantly positively related in the regression analysis ( $\beta = .14$ ). Zero-order correlations are typically larger than partial correlations. The violation of this rule suggests that statistical suppression may have taken place. To examine which variables were suppressing the negative relation between identified motivation and procrastination, we conducted a series of partial correlation analyses. The results indicated that the positive relation between identified motivation and procrastination emerged only when the effects of amotivation,  $pr(466) = .08$ , and intrinsic motivation,  $pr(466) = .11$ , were partialled out. This finding suggests that it is when identified motivation is stripped of its positive relation with intrinsic motivation and its negative relation with amotivation that a positive relation emerges with procrastination.

### Discussion

The present study showed that the way students regulated their academic behavior was significantly associated with the extent to which they procrastinated. Correlation analyses indicated that, as predicted, students who had intrinsic reasons for pursuing their studies were likely to procrastinate less, whereas those who had extrinsic reasons were likely to procrastinate more. Also, students who were amotivated or helpless in the regulation of their academic behavior were likely to procrastinate more. Thus, less autonomous forms of motivation were associated with higher levels of procrastination. This is consistent with previous findings showing that less autonomous forms of academic self-regulation are associated with less persistence, negative emotions, and inconsistency between attitudes and behaviors. All three of these factors appear to lead to procrastination.

The present study replicated previous research in showing that dispositional factors associated with fear of failure, such as depression, anxiety, and low self-esteem, were all related to higher levels of procrastination. However, the self-regulation variables were associated with academic procrastination even after we controlled for the effects of the fear-of-failure variables. This result attests to the usefulness of looking beyond the fear-of-failure construct when considering motivational explanations of procrastination. Accomplishing tasks on time may depend not only on how afraid of failure one is but also on why one is pursuing the activity in the first place. Students who find school intrinsically interesting are less inclined than students who cite external reasons as the primary cause of their school behavior to put off their homework until later.

It was surprising to find that identified motivation, which is thought to represent an autonomous form of self-regulation, was not associated with lower levels of academic procrastination in the correlation analyses. Moreover, in the regression analyses it was revealed that identified motivation was significantly associated with higher levels of procrastination. This finding runs counter to

other work in the academic domain, which has suggested that identified motivation functions much like intrinsic motivation to foster positive academic outcomes such as enjoyment, better grades, increased feelings of competence, better concentration, more time spent on task, and lower drop-out rates (Ryan & Connell, 1989; Vallerand et al., 1989; Vallerand & Bissonnette, 1992; Vallerand & Senécal, 1992). Perhaps the only way to guarantee low levels of procrastination is with intrinsic motivation. No matter how important students consider their courses to be for achieving their future life goals, they are still likely to procrastinate if they are not genuinely interested in the course material. Thus, procrastination appears to be a motivational problem that requires that a very high threshold of autonomy be reached before it can be overcome. This finding may explain why procrastination continues to be so remarkably widespread in the academic domain.

In the present study, we used a new self-report measure of academic procrastination, which was shown to possess good internal reliability. The measure was negatively related to academic performance and positively associated with measures reflecting fear of failure. Despite the evidence of predictive validity for our measure, the study would have been strengthened if a behavioral index of procrastination had also been included.

In conclusion, the results of the present study (a) indicate that self-regulation styles are associated with procrastination in an important real-life domain (education) and (b) underscore the relevance of self-regulation in motivational problems common to everyday life.

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