ROLE MODELS, POSSIBLE SELVES, PERCEIVED SELF-EFFICACY, AND PERCEIVED SELF-CONTROL AS PREDICTORS OF GPA IN COLLEGE STUDENTS

By

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To my grandparents

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Self-control predicts many important developmental outcomes including achievement, emotional stability, and successful social relationships. The potential for self-control to predict academic achievement in college students is particularly important because few good predictors of academic achievement in college students exist and college retention and graduation rates are decreasing. The purpose of the present study was to identify factors that predict self-control and GPA in college students. Participants included 163 undergraduate students at the University of Florida who completed take-home self-report questionnaires. A recursive path analysis was used to test a model relating students' role models, possible selves, perceived self-efficacy, perceived self-control skills, and GPA. Partial support for the model was found, as total role models predicted the number of balanced possible selves; the number of balanced possible selves predicted Delay of Gratification; perceived self-efficacy predicted perceived self-control; and Planful Thinking predicted GPA. These results are consistent with social cognitive theory, as role models influenced students' possible selves, which in turn influenced students' self-control skills and academic achievement. However, the lack of relationships among some of the variables indicates that more research is needed to examine the relationships among role models, possible selves, and self-control. In particular, researchers should use domain-specific measures

of academic possible selves and academic self-control to predict students' academic achievement.

CHAPTER 1
INTRODUCTION

> I count him braver who overcomes his desires than him who conquers his enemies, for the hardest victory is the victory over self.
> —Aristotle
>
> He who conquers himself is the mightiest warrior.
> —Confucius
>
> He who reigns within himself, and rules passions, desires, and fears, is more than a king.
> —John Milton

Statement of the Problem

The ability to control one's passions, thoughts, and behaviors is a fundamental element of human agency. Self-control has long been heralded by poets, philosophers, and religious leaders. The failure of individuals to control themselves, to act without reason, or to act contrary to that which rationality prescribes was considered a major problem even during ancient times when great thinkers such as Plato, Socrates, and Aristotle took it upon themselves to study *akrasia,* or weakness of the will. Freud (1923/1989) later suggested that the human psyche is in a state of perpetual conflict as the ego struggles to regulate the unrelenting impulses of the id while balancing the demanding pressures of the superego. Darwin (1871/1981) promoted the role of self-control when he suggested that "the highest possible stage in moral culture is when we recognize that we ought to control our thoughts" (p. 123). Recently, the study of self-control in psychology has garnered increasing attention due to its conjectured role in both internalizing and externalizing disorders. Self-control refers to those processes (both conscious and nonconscious) involving the organization and mobilization of resources that enable individuals to guide their goal-directed behaviors over time and across multiple, dynamic contexts. Aspects of self-control include the monitoring and regulation of one's thoughts, emotions, and impulses through the use of self-instructions, self-motivation, self-evaluation and delay of gratification. Another aspect of

self-control is perceived self-efficacy, which plays a fundamental role because of its influence on thought, affect, motivation, and action (Bandura, 1991, 1997). Recent research suggests that self-control predicts many important outcomes including achievement, adjustment, substance abuse, emotional stability, and quality of interpersonal relationships (Eisenberg & Fabes, 1992; Shoda, Mischel, & Peake, 1990; Tangney, Baumeister, & Boone, 2004; Wills & Stoolmiller, 2002). In light of the importance that self-control plays in psychological functioning, research into the factors that contribute to the development of self-control and the processes that explain its widespread influence is needed. Few studies of these issues have been conducted. The purpose of this study is to examine factors that may predict self-control and grade point average (GPA) in college students. Specifically, this study will examine the extent to which students' role models and possible selves affect their perceptions of self-efficacy for self-control, reported self-control behaviors, and GPA.

Self-Control

Rosenbaum (1980a) offered a promising conception of self-control in his development of the Self-Control Schedule, a measure that assesses individuals' repertoire of self-control behaviors and tendencies to use these behaviors when faced with problems (Akgun & Ciarrochi, 2003). As conceived by Rosenbaum, self-control consists of four components: (a) using cognitions and self-instructions to cope with emotional and physiological distress, (b) applying problem-solving strategies, (c) the ability to delay immediate gratification, and (d) confidence (i.e., perceived efficacy) in one's ability to self-regulate thoughts and feelings (Rosenbaum, 1983). The purpose of the present study is to identify factors that predict self-control in college students.

Research with the Self-Control Schedule has shown consistently that individuals scoring high on Rosenbaum's (1980a) measure engage in healthier coping tendencies, have higher levels

of perceived self-efficacy and performance, are more likely to persist after being confronted with repeated failures, demonstrate greater ability to tolerate pain and seasickness and to cope with seizures, and exhibit fewer symptoms of stress and depression than individuals low in self-control (Rosenbaum, 1980a and b; Rosenbaum & Ben-Ari, 1985; Rosenbaum & Jaffe, 1983; Rosenbaum & Palmon, 1984; Rosenbaum & Rolnick, 1983). In sum, the findings of Rosenbaum and his colleagues have suggested that individuals high in self-control are better able to minimize the negative effects of situational stressors on their performance and overall psychological functioning compared to individuals low in self-control.

Other researchers have found similarly positive results with Rosenbaum's (1983) measure of self-control. Ginter, West, and Zarski (1989) investigated the relationship between self-control and coping strategies and found that those high in self-control used more beneficial, problem-focused coping strategies and reported significantly fewer symptoms of stress than individuals low in self-control. Later research supported these findings, as Akgun (2004) reported that persons high in self-control used more positive reappraisal, were more likely to seek social support, and less likely to use escape-avoidance coping strategies. Akgun also found that those with high self-control had higher levels of perceived self-efficacy regarding their abilities to effectively cope with stress. Other investigations into the link between self-control, stress, and academic performance have suggested that self-control moderates the effect of academic stress on academic performance. As Rosenbaum and Jaffe (1983) noted, considerable evidence shows that individuals high in self-control are better able to tolerate and cope with uncontrollable aversive stimulation.

In addition, several researchers examined the relationship between self-control and depression. Rosenbaum and Palmon (1984) reported that patients high in self-control were

significantly less depressed, coped better with their disability (epilepsy), and maintained a stronger belief in their control over their health and their seizures compared to individuals low in self-control. Simons, Lustman, Wetzel, and Murphy (1985) examined self-control and depressed patients' response to cognitive behavioral therapy and reported that patients entering cognitive therapy with relatively high Self-Control Schedule scores responded more favorably to cognitive therapy than patients with low scores. In contrast, Lewinsohn and Alexander (1990) reported that adolescents low in self-control exhibited an increased probability of becoming depressed.

Finally, some researchers have reported relationships between self-control (as measured by the Self-Control Schedule) and self-reported patterns of alcohol consumption and tobacco use in young adults (Carey, Carey, Carnrike, & Meisler, 1990; Katz & Singh, 1986). Carey et al. compared undergraduates' self-reported patterns of alcohol consumption and found that the heaviest drinkers had the lowest scores and that individuals who drank infrequently or not at all had the highest scores on the Self-Control Schedule. Several studies also suggest that smokers have significantly lower scores on the Self-Control Schedule than non-smokers (Carey et al., 1990; Kennett, Morris, & Bangs, 2006). Similarly, Katz and Singh (1986) reported that ex-smokers scored significantly higher on the Self-Control Schedule than did smokers who had attempted to quit but failed. On the basis of their results, the authors suggested that ability of smokers to quit smoking may have been attributable to the better coping skills associated with high self-control. Kennett et al. replicated these results and reported that individuals who quit smoking exhibited just as much self-control as individuals who never smoked, even after controlling for age differences. Taken together, these studies suggest that self-control skills may protect against substance abuse. Furthermore, these results support the notion that self-control skills may serve as a protective factor against depression, given that substance use (and abuse) is

strongly associated with depression (serving as a risk factor, possible trigger, and concomitant of depressive symptomology).

In sum, it appears that individuals with high self-control believe in their ability to deal with aversive stimuli, use more beneficial coping and problem solving strategies, and are better able to minimize the negative effects of aversive stimuli compared to individuals with low self-control. From the studies reviewed, it is clear that self-control is related to a variety of important self-regulatory processes. Despite the important outcomes associated with this construct, the factors that contribute to the development of self-control are still unclear. Social cognitive theory (Bandura, 1997) suggests several important factors that may contribute to the development of self-control. One of the most important may be the relationships individuals develop with other people, particularly when the people in these relationships become models of behavior for the individuals. The potential impact of these models on self-control is a major focus of this study.

Role Models and Self-Control

Some researchers have reported that individuals' social relationships influence their ability to control their impulses and behaviors (Calkins, 1994; Cassidy, 1994). This notion is consistent with social cognitive theory (Bandura, 1986), which emphasizes the roles of observation and modeling in human learning and development. Many theorists have proposed that the processes by which individuals develop self-understanding are inherently social because individuals continually compare themselves with others to identify their unique characteristics and to evaluate their own abilities. According to Bandura (1986, 1991), most human behavior is learned observationally through modeling the behaviors, attitudes, and emotional reactions of others. In other words, humans have the capacity to learn from observing others' successes and failures.

The others to which we are continually looking to for information and comparing ourselves are often referred to as *role models*. Unfortunately, little consensus exists on a definition of role models, and the term role model is often used synonymously with terms like mentor and exemplar. Hence, as Gibson (2004) suggested, "the construct of role models remains a popularly used but vaguely defined notion" (p. 135). For the purposes of clarification, I have adopted Gibson's definition of role model as "a cognitive construction based on the attributes of people in social roles an individual perceives to be similar to him or herself to some extent" and desires to either increase perceived similarity by emulating those attributes or to decrease perceived similarity by avoiding those attributes (p. 136). Further, Gibson (2003) defined the process of *role modeling* as "a cognitive process in which individuals actively observe, adapt, and reject attributes of multiple role models" (p. 593). These definitions imply that role models may be positive or negative. Positive role models are individuals who have achieved success, who are considered competent in a relevant domain, who exhibit prestige and power, and who inspire others to emulate certain qualities. Negative role models are individuals who have experienced some kind of failure or misfortune, who possess undesirable qualities, and who motivate others to avoid similar adversity (Lockwood, 2002).

An individual's repertoire of role models may range from close relatives and friends, to coworkers, superstars, historical figures, and even fictional characters (Gibson, 2004; Ibarra, 1999; Kemper, 1968; Lockwood & Kunda, 1997). Situational factors (such as proximity) and person factors (such as gender and age) affect the number and types of role models available to an individual (Kulik & Ambrose, 1992). Traditionally, it has been suggested that individuals emulate models who exhibit four primary characteristics: competence, gender appropriateness, prestige and power, and individual relevance (Bandura, 1977; Thomas, 1990). However, the

majority of social cognitive theorists agree that individuals are most likely to model the behaviors and qualities of individuals with whom they identify, which depends on the degree to which they perceive the models to be similar to themselves, and the degree of emotional attachment that is felt toward the models (Thomas, 1990; Woodward, 1982).

Theorists have consistently maintained that identification with role models is critical to professional, academic, and emotional development (Bandura, 1977; Erikson, 1985). Bandura suggested that role models serve both informational and motivational functions. Similarly, Lockwood, Sadler, Fyman, and Tuck (2004) suggested that individuals may use both positive and negative role models simultaneously as a means of effectively channeling their motivation. Thus, individuals observe their role models for information regarding how to act and the consequences of such actions and then use this information as a basis for their decisions about how to act in the future. Individuals are motivated to model behaviors and qualities to the extent that they lead to desirable consequences, and individuals are motivated to avoid behaviors and qualities to the extent that they lead to undesirable consequences. Researchers have repeatedly demonstrated that role models are sources of motivation and inspiration (Lockwood & Kunda, 1999; Lockwood, Jordan, & Kunda, 2002; Lockwood et al., 2004). To date, most of the research on role models focuses on positive role models (also referred to as *mentors* and *exemplars*); but it seems more likely that the combination of positive and negative role models has a more powerful relationship to self-control than positive role models alone. In this study I explored the relationship between the total number of positive and negative role models and self-control by examining several potential mediators that might account for the relationship, specifically possible selves, and perceived self-efficacy for self-control. The rationales for these linkages are explained in the following sections.

Role Models and Possible Selves

Lockwood and colleagues (Lockwood, 2002; Lockwood et al., 2004; Lockwood & Kunda, 1997, 1999) have suggested that role models are motivating to the extent that they point to plausible positive and negative possible selves and the strategies for achieving or avoiding them. Possible selves are defined as cognitive self-representations concerning what one expects to become, what one hopes to become, and what one fears becoming (Markus & Nurius, 1986). Positive possible selves include those self-representations and goals that one hopes to realize (for example, one might desire to be wealthy or to be known as a person of integrity) and negative possible selves refer to those self-representations that one hopes to avoid or fears becoming (for example, one might fear becoming a college dropout or being known as a liar). Positive possible selves may be classified as promotion goals because they reflect the personal goals that students hope to achieve, whereas negative possible selves may be classified as prevention goals because they reflect outcomes that students hope to avoid. Thus, a mixture of positive and negative role models may provide the basis for the development of positive and negative possible selves and the motivation for achieving (or avoiding) them.

Theorists have suggested that possible selves are shaped by social, cultural, and environmental factors and can be facilitated or hindered according to the quality of these factors. Although an individual is free to imagine a vast array and unlimited number of possible selves, the actual collection of possible selves that an individual imagines for himself or herself is "derived from the categories made salient by the individual's particular sociocultural and historical context and from models, images, and symbols provided by the media and by the individual's immediate social experiences" (Markus & Nurius, 1986, p. 954). For example, children who grow up in abusive households may envision themselves in abusive relationships later in life; they may have difficulty forming positive possible selves concerning their

relationships with others. Several researchers (Anthis, Dunkel, & Anderson, 2003; Day, Borkowski, Punzo, & Howsepian, 1994; Kao, 2000; Knox, Funk, Elliott, & Bush, 2000) have demonstrated the influence of sociocultural factors on children's possible selves, reporting that prevalent gender, racial, and ethnic stereotypes were reflected in the types of possible selves children and adolescents envisioned. Thus, given that possible selves are greatly influenced by social and cultural factors, it is likely that individuals' positive and negative role models influence the types of possible selves they construct. However, no studies have specifically examined the relationship between individuals' role models and their possible selves. In this study, I examined the relationship between the total number of students' role models (including positive and negative role models) and their balanced possible selves. Balance means having both a positive and negative aspect of a future goal, or having a hoped-for self and a corresponding feared self in the same domain (Oyserman & Markus, 1990). The balance measure of possible selves incorporates both positive and negative possible selves and should therefore capture the effects of both positive and negative role models. On the basis of previous studies, I hypothesized that individuals with more role models have more balanced possible selves because they are able to envision the positive and negative possibilities associated with their future goals. The next link in the proposed model is from balanced possible selves to perceived self-efficacy for self-control.

Balanced Possible Selves and Perceived Self-Efficacy for Self-Control

Research into the likely roles of possible selves suggests that (similar to role models) they function as incentives for future behavior, and they provide an evaluative and interpretive context for the current self-concept. Markus and Nurius (1986) suggested, "The efficient performance of almost any task, whether relatively mundane, or more complex, requires the construction of the possible self that carries out the action, completes the task, or masters the

difficulty" (p. 962). In addition, Markus and Nurius have proposed that possible selves are important motivators because they provide specific, self-relevant goals to work toward or to avoid, thereby energizing and organizing individuals' behaviors. Further, Cross and Markus (1991) noted that possible selves help individuals make more direct connections between their goals and their strategies for attaining them by allowing individuals to simulate their futures, which enables them to organize and integrate information and strategies relevant to their goals and to judge the extent to which they are approaching (or avoiding) desired (or undesired) outcomes.

Markus and Nurius (1986) also proposed that possible selves serve as standards for comparison and evaluation of the current self. That is, individuals can monitor the status and development of their current self by envisioning their desired and undesired future selves. Markus and Nurius further suggested that positive possible selves may be encouraging because they foster hope and optimism, whereas negative possible selves may be discouraging because "their associated affect and expectations may stifle attempts to change or develop" (p. 963). However, negative possible selves may also be motivating to the extent that they highlight the strategies necessary to avoid undesired outcomes. Research suggests that individuals who have balanced possible selves appear to have more motivation and control over their behavior than individuals without such balance. In one study, public school youth had significantly more balanced possible selves than delinquent youth (Oyserman & Markus, 1990), and balance in possible selves has been found to have a positive relationship to school persistence (Oyserman & Markus, 1990; Oyserman, Gant, & Ager, 1995). On the basis of these results, Oyserman and Markus suggested that individuals with more balance among their possible selves have more motivational resources because they can envision a greater array of potential outcomes and can

better monitor their progress toward positive or negative outcomes. Oyserman, Bybee, and Terry (2006) later found that youth with balanced academic possible selves spent more time engaging in self-control behaviors related to academic achievement (i.e., spent more time doing homework, were less behaviorally disruptive, and more behaviorally engaged in classroom activities).

Of special relevant to this study, Cross and Markus (1994) proposed that possible selves may link effective steps and strategies for solving problems with beliefs about one's ability and competence in the domain. Similarly, Ruvolo and Markus (1992) suggested that the "underpinnings of a sense of efficacy, control, and competence are specific, self-relevant thoughts and feelings, particularly images and conceptions of the self in the future, desired states" (p. 97). Thus, they proposed that possible selves provide the foundation for perceived self-efficacy, control, and competence. Bandura (1997) defined perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3), and studies have revealed that perceived self-efficacy has a positive impact on individuals' confidence, motivation, perseverance, and success (Bandura, 1997; Schunk, 1984). As Schunk (2003) observed, when compared with their less efficacious counterparts, "those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level" (p. 161). Thus, the extent to which individuals believe that they are capable of regulating their behavioral responses may predict their ability to do so. Bandura further suggested that most human behavior is learned observationally through modeling the behaviors, attitudes, and emotional reactions of others and that perceived self-efficacy could be increased by vicariously experiencing the successes of role models. Hence, the extent to which parents, peers, and other

significant social influences model appropriate self-control skills may affect the development of individual individuals' possible selves that in turn affect their perceived self-efficacy for self-control, which in turn affects their ability to regulate their behavioral responses. Some evidence supports this notion, as researchers have linked positive role models to increased perceived self-efficacy, psychological well-being, career success, and overall positive self-concepts (Bahniuk, Dobos, & Hill, 1990; Bryant & Zimmerman, 2003; Turner, 1996; Weinberg, Grove, & Jackson, 1992). In addition, indirect evidence supports the relationship between possible selves and perceived self-efficacy for self-control. Some researchers have found that positive possible selves were significantly related to improved grade point average (Anderman, Anderman, & Griesinger, 1999) and Leonardi, Syngollitou, and Kiosseoglou (1998) reported that the overall quality of students' possible selves was related to school achievement and task persistence. As perceptions of self-efficacy are typically found to predict achievement, it is plausible to extrapolate from these findings that possible selves may predict perceived self-efficacy for self-control. Consequently, in this study, I extended this line of research by examining whether the relationship between the number of role models and self-control was mediated by number of balanced possible selves and perceived self-efficacy for self-control.

Perceived Self-Efficacy for Self-Control and Academic Achievement

One context in which perceived self-efficacy and self-control skills are especially important is in colleges and universities, and this study will provide information about factors that might predict academic achievement (as measured by GPA) in college students. The identification of significant predictors of GPA is important because universities across the nation are struggling to increase retention rates. Although recent data on dropout rates in colleges are not available, several studies have revealed that between one third and one half of students who enter college do not complete their programs. ACT (2007a and b) administered surveys showing

that, from 1983 to 2007, approximately one third of the students who attended college dropped out before their second year. In addition, the report revealed that non-return rates were increasing and that little has changed in the last two decades regarding 5-year graduation rates, still hovering around 50%. The National Center for Education Statistics (2005) reported similar results for the years between 1989 and 1995 and noted that 5-year graduation rates have not changed despite increased access to colleges. In a more recent study, the U.S. Census Bureau (2000) reported that one in three Americans drops out of college, and that this number appears to be steadily increasing. Clearly, the numbers of students who drop out of college demonstrate the need to identify factors that contribute to this problem. Perceived self-efficacy has been shown to have a strong link to academic achievement (Bandura, 1997), hence, it is important for researchers to identify potential predictors of perceived self-efficacy and academic achievement at the college level.

It is likely that individuals who have confidence in their ability to engage in self-control have higher levels of self-control than individuals with lower perceptions of self-efficacy for self-control. Furthermore, it is likely that individuals with higher self-control achieve at higher rates because they are better able to organize their resources, plan ahead, engage in more effective problem solving strategies, and control factors that potentially interfere with successful performance (such as unwanted thoughts and emotional distractions). These skills may be particularly important and useful in academic settings, where students are regularly required to complete assignments and tasks within time constraints, and some evidence suggests self-control is a significant predictor of academic achievement and school performance. For example, Mischel and colleagues (Mischel, Shoda, & Peake, 1988; Shoda, Mischel, & Peake, 1990) conducted a series of studies and reported that children's delay of gratification at age 4

significantly predicted SAT scores years later. More recent studies found that individuals with high self-control had significantly better grades than individuals with low self-control (Feldman, Martinez-Pons, & Shaham, 1995; Tangney et al., 2004) and that self-control significantly predicted grade point average among college students (Wolfe & Johnson, 1995). In this study, I further examined the relationships among three perceived self-control skills (delay of gratification, emotion regulation, and planful thinking) and college students' GPA. Furthermore, I sought to determine whether total number of role models, balanced possible selves, perceived self-efficacy, and perceived self-control predicted GPA.

Measurement of Self-Control

The most promising of the few measures of self-control available is Rosenbaum's (1980a) Self-Control Schedule, which was designed to measure learned resourcefulness. Rosenbaum (1985) defined *learned resourcefulness* as "an acquired repertoire of cognitive-behavioral skills by which a person self-regulates internal responses (such as emotions, pain, and cognitions) that would otherwise interfere with the smooth execution of a target behavior" (p. 200). The Self-Control Schedule is a self-report measure that assesses individuals' general repertoire of self-control behaviors and their tendencies to use these behaviors when faced with everyday problems (Akgun & Ciarrochi, 2003). As conceived by Rosenbaum, learned resourcefulness is multi-faceted and incorporates four aspects: (a) the use of cognitions and self-instructions to cope with emotional and physiological responses, (b) the application of problem-solving strategies, (c) the ability to delay immediate gratification, and (d) a general belief in one's ability to self-regulate internal events (i.e., perceived self-efficacy) (Rosenbaum, 1983).

In sum, the research using Rosenbaum's Self-Control Schedule suggests that individuals with high resourcefulness believe in their ability to deal with aversive stimuli, use more beneficial coping and problem solving strategies, and are better able to minimize the negative

effects of aversive stimuli compared to individuals with low resourcefulness. From these studies, it is clear that learned resourcefulness involves a variety of important self-regulatory processes. Yet despite the promising results associated with this construct, research provides inconsistent conclusions regarding the factorial structure of the Self-Control Schedule. For example, Gruber and Wildman (1987) conducted an exploratory factor analysis and subsequently reported that only three significant factors emerged: problem-focused coping, mood and pain control, and externality (which the authors concluded is the reverse of self-efficacy). Other researchers conducted factor analyses across groups. Edwards and Riordan (1994) performed separate varimax rotations for Black and White students and reported 14 and 12 factors, respectively, that were difficult to interpret. Redden, Tucker, and Young (1983) also used varimax rotation and obtained six factors. The authors, however, cautioned that interpretation of the factors should "proceed tentatively" because of "a lack of a clear, strong factor structure" (pp. 84-85).

Thus, the factor structure of the Self-Control Schedule is still unclear, though research suggests that the items on the Self-Control Schedule load on more than the four factors that Rosenbaum proposed as composing the construct of learned resourcefulness (albeit the factors that emerged in previous studies do reflect similar themes). From the information available, it appears that all previously published factor analyses were conducted using varimax rotation. Constraining the factors of the Self-Control Schedule to an orthogonal solution when theory and the nature of the items suggest they should be correlated likely led to erroneous conclusions. To address these concerns, I conducted an exploratory factor analysis of the Self-Control Schedule using promax rotation, which allowed the factors to correlate (Marshik, 2007). Prior to data collection, two items were eliminated due to their sensitive content. These items ("If I would smoke two packages of cigarettes a day, I probably would need outside help to stop smoking,"

and “If I had the pills with me, I would take a tranquilizer whenever I felt tense and nervous”) were replaced with two new items written by the researchers (“I have a hard time waiting for something that I really want,” and “If I have a choice between a smaller reward *now* or a bigger reward *later*, I would choose the smaller reward so that I could have it now”). These two items were added to increase the number of items referring to delay of gratification, because only a few items seemed to reflect this construct. The analysis of 176 undergraduate students’ responses to the items on the Self-Control Schedule yielded seven self-control factors: Emotion Regulation, Perceived Self-Efficacy, Ability to Control Physiological Responses, Planful Thinking, Problem-Solving Ability, Ability to Control Unwanted Thoughts, and Delay of Gratification. Three of these factors were used to measure self-control skills in this study because they were well-represented by the items: Emotion Regulation ($\alpha = .72$), Planful Thinking ($\alpha = .62$), and Delay of Gratification ($\alpha = .59$).

The Proposed Model and Purpose of the Study

In summary, theoretical accounts and the research literature provide support for the following predictions represented in the conceptual model in Figure 1-1: (a) the total number of role models will have a direct relationship to the number of balanced possible selves, (b) the number of balanced possible selves will have a direct relationship to the perceived self-efficacy variables (Perceived Self-Efficacy for Delay of Gratification, Perceived Self-Efficacy for Emotion Regulation, and Perceived Self-Efficacy for Planful Thinking), (b) the perceived self-efficacy variables will have direct relationships with the corresponding perceived self-control variables (Perceived Delay of Gratification, Perceived Emotion Regulation, and Perceived Planful Thinking), (c) the perceived self-control variables will have direct relationships to GPA. It is also hypothesized that the total number of role models will predict GPA through the mediating variables of balanced possible selves, perceived self-efficacy, and perceived self-

control. Specifically, the model depicts the following predictions regarding mediation effects: (a) the number of balanced possible selves will mediate the relationship between the total number of role models and the perceived self-efficacy variables, (b) the self-efficacy variables will mediate the relationship between the number of balanced possible selves and the perceived self-control variables, and (c) the perceived self-control variables will mediate the relationship between the perceived self-efficacy variables and GPA. In the conceptual model depicted in Figure 1-1, ellipses indicate latent variables and rectangles indicate observed variables.

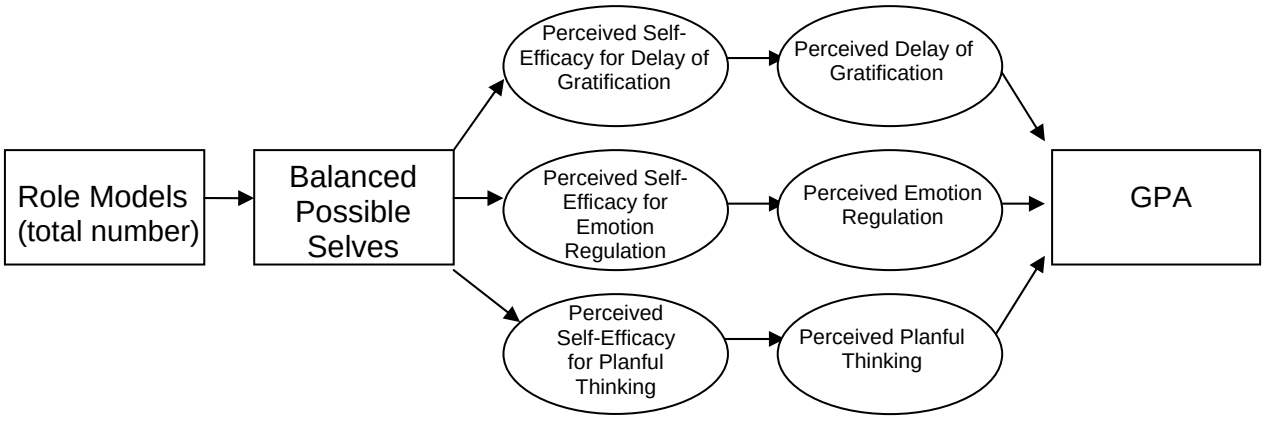

Figure 1-1. Theoretical model of the relationships among role models, possible selves, perceived self-efficacy, perceived self-control, and GPA.

Theoretical Significance

The results of this study will serve to integrate several research areas and will help psychologists better understand the links between individuals' role models, possible selves, self-control skills, and academic achievement. Markus and Nurius (1986) have suggested that possible selves are shaped by and greatly influenced by social, cultural, and environmental factors and can thus be facilitated or hindered according to the quality of these factors. However, few studies have examined the connections between individuals' social relationships and their possible selves, and none have examined the associations between role models and possible

selves. This study will provide information elucidating the connection between total number of role models and the number of balanced possible selves.

Theory and research also suggest that individuals' social relationships influence their perceptions of self-efficacy and self-control abilities. Social cognitive theory emphasizes the roles of observation and modeling in human learning and development, and Bandura (1997) suggested that most human behavior is learned observationally through modeling the behaviors, attitudes, and emotional reactions of others. In this study, I extended this line of research by examining the relationships between total number of role models, the number of balanced possible selves, perceived self-efficacy for self-control skills, and perceived self-control skills (including delay of gratification, emotion regulation, and planful thinking). This research may elucidate the mechanisms through which role models ultimately influence students' self-control and academic achievement, which may provide insight into ways that role models can help students develop academic and social competence. Specifically, I hypothesized that the number of balanced possible selves and perceptions of self-efficacy would mediate the relationships between individuals' role models and their perceptions of self-control and GPA.

Finally, some theorists have already suggested that possible selves serve as the underpinning of perceptions of self-efficacy, self-control, and competence (Markus & Ruvolo, 1989; Ruvolo & Markus, 1992), but none have directly examined these relationships. I extended this line of research by explicitly examining the relationships among college students' possible selves, perceived self-efficacy, perceived self-control, and GPA.

In sum, the proposed model integrates critical concepts from social cognitive theory, motivation theory, self-concept theory, and achievement theory. Results from this study offer insights into the relationships among role models, possible selves, perceived self-efficacy for

self-control, perceptions of self-control, and GPA that may be useful in the development of further research and theory on these important social, emotional, and cognitive concepts.

Practical Significance

This study elucidates important relationships, which has several practical implications for future experimental research to determine approaches for increasing college students' ability to engage in self-control and to improve their academic performance. First, it will provide information about the possible predictors of self-control. The construct of self-control has received increasing attention over the years due to its associations with psychopathology. The concept of self-control is especially popular among researchers and clinicians seeking to elucidate individual differences in the development of psychopathology. Several studies provide evidence that poor self-control skills are related to lower levels of social competence (Eisenberg & Fabes, 1992; Eisenberg et al., 1997) and to internalizing and externalizing disorders (Hart, Atkins, & Ford, 1998; Rubin, Coplan, Fox, & Calkins, 1995). In addition, research suggests that self-control predicts many important outcomes including achievement, adjustment, substance abuse, emotional stability, and quality of interpersonal relationships (Eisenberg & Fabes, 1992; Shoda et al., 1990; Tangney et al., 2004; Wills & Stoolmiller, 2002). Social-cognitive theory offers a number of potentially important constructs that may contribute to academic achievement including role models, possible selves, perceived efficacy for self control, and self-control behaviors. If researchers can identify mechanisms that underlie perceived self-efficacy and self-control, they will be better able to help individuals develop appropriate and beneficial self-control skills, which will increase the likelihood of their success. In addition, this study provides information about factors that predict academic achievement (as measured by GPA) in college students. If these factors are shown to increase academic achievement in experimental studies, important new interventions can be developed to improve academic achievement and educators

may be able to identify students who are more likely to struggle academically or to drop out of college.

CHAPTER 2
METHOD

Participants

The sample consisted of 163 college students (124 women, 39 men). Age ranged from 18 to 26 with a mean of 19.89 and a standard deviation of 1.66. The ethnic backgrounds represented were as follows: 65% White, 13% Black, 12% Hispanic, 5% Asian, and 5% other. The majority of students were sophomores (37%), followed by juniors (24%), seniors (22%), and freshman (17%). Participants were recruited from two sources: (a) the Educational Psychology subject pool (specifically, students in three educational psychology classes, EDF 3110 Human Growth and Development, EDF 3210 Educational Psychology, or EDF 3135 The Adolescent), and (b) other undergraduate courses offered by the Educational Psychology Department at the University of Florida. For students recruited from the Educational Psychology subject pool, participation in this study fulfilled a research requirement for the course (students who elected not to participate were given an alternate assignment by their instructor to fulfill the research requirement). Participants who were recruited from other educational psychology courses received either extra credit (not to exceed 1% of their grade) or class participation credit, depending on the preference of the course instructors.

Measures

Role Models

An open-ended question was created to collect information regarding students' role models (see Appendix A). The measure consists of a brief definition of role models (including definitions of positive versus negative role models), and students are asked to list and describe in detail their positive and negative role models. The total number of role models generated by each participant was tallied and used in the analyses.

Possible Selves

An open-ended questionnaire modeled after Oyserman and Markus (1990) was used to obtain information about students' possible selves (see Appendix B). On the measure, individuals are asked to generate their hoped-for and feared possible selves and list their strategies for obtaining or avoiding them The measure consists of a description of possible selves and instructs students to think about their own possible selves and then to list all of their negative and positive possible selves. Cross and Markus (1991) found that college students' responses to open-ended measures of possible selves ranged from simple one-word descriptions to elaborate and vivid descriptions of both hoped-for and feared possible selves. The results of additional studies have shown that open-ended measures of possible selves elicit unique and diverse sets of individual responses (Knox, Funk, Elliott, & Bush, 1998; Knox et al., 2000; Leonardi et al., 1998**;** Oyserman & Markus, 1990). Following the procedures used by Oyserman and Markus (1990), Oyserman, Terry, and Bybee (2002), and Dunkel and Anthis (2001), participants' positive and negative possible selves were coded into six categories (*achievement*, *interpersonal relationships*, *personality traits*, *material and lifestyles*, *physical and health-related*, and *negative*) and balance was assessed by tallying the number of connections between students' positive and negative possible selves in the same domain. Possible selves were double coded and interrater agreement was 94% (all disagreements were discussed to agreement).

Perceived Self-Control

The Self-Control Schedule (Rosenbaum, 1980a) was used to assess participants' self-control. The Self-Control Schedule is composed of 36 items, and each item is scored on a 6-point Likert-type scale, with responses that range from *very uncharacteristic of me* to *very characteristic of me*. The Self-Control Schedule score is the sum of the individual items after reversing the scores of some items. A high score indicates a high level of self-control. Originally,

the score for each item could range from -3 to +3, with no neutral response at 0, and total scores ranging from -108 to +108. However, the scaling method was modified in this study so that items were scored from 0 to 5, and the total score potentially ranged from 0 to 180. A preliminary exploratory factor analysis of 176 undergraduate students' responses to the items on the Self-Control Schedule yielded seven factors, three of which were examined in the present study because they had the highest reliability estimates and were well represented by the items: Emotion Regulation, Planful Thinking, and Delay of Gratification. In the sample obtained for this study, coefficient alpha for these variables were .72, .62, and .59, respectively.

Perceived Self-Efficacy

A nine-item measure of perceived self-efficacy created for this study was used to assess participants' confidence in their ability to control their thinking, emotions, and behavior (see Appendix C). These questions have Likert-type response options ranging from 0 (*cannot do*) to 6 (*certain can do*). A high score indicates high perceived self-efficacy for self-control. An exploratory factor analysis of 176 undergraduate students' responses to the items on the measure yielded three factors: Perceived Self-Efficacy for Delay of Gratification, Perceived Self-Efficacy for Emotion Regulation, and Perceived Self-Efficacy for Planful Thinking. In this study, internal consistency estimates using coefficient alpha were .77, .68, and .79, respectively

GPA

As part of a demographic questionnaire, students were asked to report their current overall GPA (see Appendix D). Students' GPAs ranged from 2.3 to 4.0, with a mean of 3.32 and a standard deviation of .42.

Procedures

With the permission of course instructors, participants were recruited from courses in educational psychology. Volunteers were asked to complete the questionnaires either during

class or outside of class depending on the instructor's preference. Volunteers were asked to sign letters of informed consent prior to completing the questionnaire. Participants completed the measures in the same order. The entire procedure took approximately 30-45 minutes. The final sample consisted of 163 participants, after 22 questionnaires were eliminated because of incomplete data.

CHAPTER 3
RESULTS

Preliminary Analyses and Descriptive Statistics

A recursive (unidirectional) path analysis was conducted to test the relationships posited in the model presented in Figure 1-1 using the statistical software package LISREL 8.0. Observed scores for the latent variables were used in the analysis, and error variances were fixed using coefficient α for each measure. Error variances for the perceived self-efficacy variables were permitted to correlate, as were the error variances for the perceived self-control variables. Preliminary analyses were conducted to examine to examine the relationships among the variables. The correlation matrix, as well as means and standard deviations for each of the variables used in the path analysis are presented in Table 3-1.

As hypothesized, the total number of students' role models were significantly positively correlated with the number of balanced possible selves ($r = .39$, $p < .05$). In addition, all of the perceived self-efficacy measures were significantly positively correlated. Also as hypothesized, the perceived self-efficacy measures were significantly positively correlated to the respective self-control measures. Specifically, Perceived Self-Efficacy for Delay of Gratification was significantly positively correlated with Perceived Delay of Gratification ($r = .38$, $p < .05$), Perceived Self-Efficacy for Planful Thinking was significantly positively correlated with Perceived Planful Thinking ($r = .37$, $p < .05$), and Perceived Self-Efficacy for Emotion Regulation was significantly positively correlated with Perceived Emotion Regulation ($r = .42$, $p < .05$). However, each of the perceived self-efficacy measures was also significantly positively correlated with other perceived self-control skills, although to lesser extents. Perceived Self-Efficacy for Delay of Gratification was significantly positively correlated with Perceived Planful Thinking ($r = .18$, $p < .05$) and Perceived Emotion Regulation ($r = .16$, $p < .05$); Perceived Self-

Efficacy for Planful Thinking was significantly positively correlated with Perceived Delay of Gratification ($r = .22$ $p < .05$) and Perceived Emotion Regulation ($r = .17$, $p < .05$), and Perceived Self-Efficacy for Emotion Regulation was significantly positively correlated with Perceived Delay of Gratification ($r = .22$, $p < .05$). Finally, both Perceived Delay of Gratification and Perceived Planful Thinking were significantly positively related to GPA ($r = .20$, $p < .05$ and $r = .19$, $p < .05$, respectively).

Analysis of the Proposed Model

According to the path analysis of the proposed model, the goodness of fit test indicates that χ^2 (20) = 28.17, $p = .11$. Thus, the chi-square statistic is not significant, indicating that the model fits the data. The goodness of fit indices are consistent with this conclusion: the comparative fit index (CFI) = .96, the root mean square error of approximation (RMSEA) = .05, the non-normed fit index (NNFI) = .92, and the root mean squared residual (RMR) = .06. Table 3-2 presents the total, direct, and indirect effects specified in the model. All effects were expected to be positive, and directional hypothesis tests were conducted. Significance was determined using a .05 Type I error rate.

The total number of role models significantly predicted the number of balanced possible selves ($\gamma = .39$, $p < .05$), and this effect was entirely direct. There were no significant direct or indirect effects of total role models or the number of balanced possible selves on the perceived self-efficacy variables. In predicting the perceived self-control factors (Delay of Gratification, Emotion Regulation, and Planful Thinking), the direct effects of the corresponding perceived self-efficacy variables were significant. Specifically, Perceived Self-Efficacy for Delay of Gratification predicted Perceived Delay of Gratification ($\beta = .55$, $p < .05$), Perceived Self-Efficacy for Emotion Regulation predicted Perceived of Emotion Regulation ($\beta = .60$, $p < .05$), and Perceived Self-Efficacy for Planful Thinking predicted Perceived Planful Thinking ($\beta = .35$,

$p < .05$). There were no significant indirect effects on Perceived Emotion Regulation or Perceived Delay of Gratification. However, there was a significant indirect effect of the number of balanced possible selves on Perceived Delay of Gratification ($\beta = .08$ $p < .05$), which was mediated by Perceived Self-Efficacy for Delay of Gratification. Finally, the only significant direct effect on GPA was Perceived Planful Thinking ($\beta = .22$, $p < .05$). Support was also found for a significant indirect effect of Perceived Self-Efficacy for Planful Thinking on GPA ($\beta = .10$, $p < .05$), which was mediated by Perceived Planful Thinking.

CHAPTER 4
DISCUSSION

The results of this study indicate that the total number of role models significantly predicts balanced possible selves. This finding lends support to theorists' claim that possible selves are shaped and influenced by social factors. Specifically, this result suggests that individuals with more role models, including both positive role models (people they admire and try to emulate) and negative role models (people they try to avoid being like), are better able to envision the positive and negative possibilities associated with their future goals. Researchers should further investigate this relationship and should examine whether positive and negative role models are differentially related to possible selves. For example, it is unclear whether both positive and negative role models are necessary to predict balanced possible selves. Positive role models may contribute to the formation of positive possible selves, whereas negative role models may contribute to the formation of negative possible selves. Alternatively, positive role models may also contribute to the formation of negative possible selves and negative role models may also contribute to the formation of positive possible selves. Researchers need to examine whether having more positive (or negative role) models affects balanced possible selves. Finally, researchers should also examine the qualities of the relationships between students and their role models to determine what aspects contribute to the production of possible selves.

Oyserman and Markus (1990) suggested that individuals who have balanced possible selves may have more motivation and control over their behavior than individuals without such balance. This study lends partial support to this claim, as balance significantly predicted students' perceptions of their ability to delay of gratification (through an indirect effect mediated by perceived self-efficacy for delay of gratification). Hence, students who reported more balanced possible selves reported more self-control (in terms of delaying their gratification) than

students with less balance. However, the number of balanced possible selves did not significantly predict perceived self-efficacy for self-control or GPA. In other words, students with more balance in their possible selves did not feel more efficacious for engaging in self-control, nor did they have a higher GPA. These findings do not lend support to the claims that possible selves provide the foundation for perceptions of self-efficacy (Cross & Markus, 1994; Ruvolo & Markus, 1992), and these results seem to contrast with reports that possible selves are significantly related to improved GPA (Anderman et al., 1999) and achievement test scores (Leonardi et al., 1998). There are several possible interpretations of these findings (or the lack thereof). First, the number of balanced possible selves may predict GPA through other mechanisms, such as motivation (i.e., the extent to which individuals' possible selves motivate them to engage in self-regulatory behaviors may predict academic achievement), future time perspective (i.e., the extent to which individuals see the contingency between their current actions and their future goals may predict academic achievement), and plausibility (i.e., the extent to which possible selves are likely to be achieved or avoided given the strategies that are being used to attain them may predict academic achievement). Second, it is possible that the balance measure used in this study was too general. In this study, balance was measured by tallying the number of positive possible selves that had matching negative possible selves in the same domain, but the final balance score was a sum of balance across all domains. Hence, the balance measure was not specific to the domains of self-control or achievement (more specifically, academic achievement). It is also possible that the self-efficacy and self-control measures were too general. Although balance was indirectly related to delay of gratification, it may have been more prudent to use specific measures of academic perceived self-efficacy and academic self-control. Oyserman et al. (2006) used measures of academic possible selves and

academic self-control and found a significant relationship between them (such that higher balance predicted higher levels of perceived self-control). Furthermore, Oyserman et al. reported that balance in academic possible selves significantly predicted GPA in high school students. Future studies should use measures of these variables that refer specifically to academic achievement.

As hypothesized, the perceived self-efficacy measures predicted their corresponding perceived self-control factors. Specifically, students' perceived self-efficacy for delay of gratification predicted their perceptions of their ability to delay gratification; students' perceived self-efficacy for emotion regulation predicted their perceptions of their ability to regulate their emotions, and students' perceived self-efficacy for planful thinking predicted their perceptions of their ability to engage in planful thinking. Thus, the extent to which students believed that they were capable of regulating their behavioral responses predicted their self-reports of their ability to do so. These results are consistent with social cognitive theory (Bandura, 1997), which posits that human behavior is learned observationally through modeling the behaviors, attitudes, and emotional reactions of others, and that perceived self-efficacy can be affected by social influences. These results also support Bandura's conception of perceived self-efficacy as being domain-specific, although all of the self-efficacy factors were significantly, positively correlated (presumably because they all dealt with self-control in general). Furthermore, perceived self-efficacy for planful thinking significantly predicted GPA (through an indirect effect mediated by planful thinking). This result is consistent with an extensive amount of literature indicating that perceived self-efficacy has a positive impact on individuals' success and achievement (Bandura, 1997; Schunk, 1984, 2003).

Finally, the only perceived self-control factor that predicted GPA was planful thinking. This finding suggests that students who report that they are better able to plan ahead and envision how they will approach and solve problems achieve at higher levels than individuals who report that they lack this self-control skill. It is not clear why the other factors (delay of gratification and emotion regulation) were not significantly related to GPA, but upon closer inspection of the perceived self-efficacy items, the items for planful thinking all deal with problem-solving ability (a skill that is especially relevant to the academic setting). The items for emotion regulation and delay of gratification are more general and context-free. Future studies should utilize a more specific, multidimensional measure of academic self-control in order to better predict GPA.

In sum, this study identified some predictors of self-control skills and academic achievement. These findings are relevant to researchers attempting to identify college students who are likely to succeed and those who are likely to struggle academically. In particular, this study identified potential targets of intervention for individuals who are struggling academically or who lack certain self-control skills. The results of this study suggest that an intervention aimed at improving the balance of students' possible selves may improve some self-control skills (i.e., planful thinking), which may improve GPA. Oyserman et al. (2006) conducted an intervention aimed at improving the quality of students' possible selves. The intervention was successful in that students' academic initiative, grades, and standardized test scores improved, while absences and school misconduct declined. These results suggest that parents, teachers, and other role models may influence students' academic achievement. Specifically, parents, teachers, and other significant social influences may influence students' possible selves, which in turn may affect their ability to regulate their behaviors and responses, which may ultimately affect achievement.

Future research should more closely examine the characteristics of the social relationships that are most likely to have positive effects.

In conclusion, this study provided some support for the path model relating role models, possible selves, perceived self-efficacy, self-control, and GPA. Researchers may be able to use this model as a starting point or reference for their own studies, making modifications as necessary. Future studies should test the model using measures that are academically-focused, as it is likely that the predictive power of these variables would be improved if they are context specific.

Table 3-1. Intercorrelations, means, and standard deviations of variables in path analysis ($N = 163$)

Variable	1	2	3	4	5	6	7	8	9
1. Total role models	--								
2. Balanced possible selves	.39*	--							
3. Self-Efficacy for Delay of Gratification	.00	-.04	--						
4. Self-Efficacy for Emotion Regulation	-.01	-.01	.41*	--					
5. Self-Efficacy for Planful Thinking	.06	.11	.58*	.36*	--				
6. Perceived Delay of Gratification	.00	.09	.38*	.22*	.22*	--			
7. Perceived Emotion Regulation	.12	.07	.18*	.42*	.17*	.05	--		
8. Perceived Planful Thinking	.08	.15	.16*	.07	.37*	.24*	.26*	--	
9. GPA	.11	.01	.09	.13	.11	.20*	.08	.19*	--
M	4.91	1.13	10.54	10.88	8.21	8.38	13.38	9.94	3.32
SD	3.12	1.15	3.91	3.38	2.69	3.82	4.93	4.09	0.42

* $p < .05$.

Table 3-2. Total, direct, and indirect effects in the proposed model ($N = 163$)

Variable	Effect	1	2	3	4	5	6	7	8	9
1. Total role models	Total	--	--	--	--	--	--	--	--	--
	Direct	--	--	--	--	--	--	--	--	--
	Indirect	--	--	--	--	--	--	--	--	--
2. Balanced possible selves	Total	.39*	--	--	--	--	--	--	--	--
	Direct	.39*	--	--	--	--	--	--	--	--
	Indirect	--	--	--	--	--	--	--	--	--
3. Self-Efficacy for Delay of Gratification	Total	-.06	-.16	--	--	--	--	--	--	--
	Direct	--	-.16	--	--	--	--	--	--	--
	Indirect	-.06	--	--	--	--	--	--	--	--
4. Self-Efficacy for Emotion Regulation	Total	-.02	-.06	--	--	--	--	--	--	--
	Direct	--	--	--	--	--	--	--	--	--
	Indirect	-.02	--	--	--	--	--	--	--	--
5. Self-Efficacy for Planful Thinking	Total	.05	.14	--	--	--	--	--	--	--
	Direct	--	--	--	--	--	--	--	--	--
	Indirect	.05	--	--	--	--	--	--	--	--
6. Perceived Delay of Gratification	Total	.03	.08*	.55*	--	--	--	--	--	--
	Direct	.03	--	.55*	--	--	--	--	--	--
	Indirect	--	.08*	--	--	--	--	--	--	--
7. Perceived Emotion Regulation	Total	.02	.04	--	.60*	--	--	--	--	--
	Direct	--	--	--	.60*	--	--	--	--	--
	Indirect	.02	.04	--	--	--	--	--	--	--
8. Perceived Planful Thinking	Total	-.02	-.06	--	--	.35*	--	--	--	--
	Direct	--	--	--	--	.35*	--	--	--	--
	Indirect	-.02	-.06	--	--	--	--	--	--	--
9. GPA	Total	.00	.00	.09	-.03	.10*	.16	.05	.22*	--
	Direct	--	--	--	--	--	.16	.05	.22*	--
	Indirect	.00	.00	.09	-.03	.10*	--	--	--	--

Note. -- means the effect is not in the model.
* $p < .05$.

APPENDIX A
ROLE MODELS QUESTIONNAIRE

Who influences the way you act and the type of person you try to be? We all probably observe other people who inspire us to behave in certain ways. These people whom we desire to be like, or to avoid being like, can be thought of as our "role models." Role models may range from close relatives and friends, to coworkers, superstars, historical figures, and even fictional characters. Positive role models are individuals who possess desirable qualities and who inspire others to emulate these qualities. Negative role models are individuals who possess undesirable qualities and who motivate others to avoid these qualities. Think about your current role models. Who do you want to be like? Who do you want to avoid being like?

In the spaces below, please list and describe your current positive role models (people you desire to be like). If you need more room, use the back of this paper. You do not have to provide names, but please consider the following questions:

- What do you admire about this individual?
- What positive qualities does he or she possess?
- What is his or her relation to you?
- In what ways does this person motivate you?

My current positive role models (People who I want to be like and the desirable qualities they possess):	What I am doing to become like this person:
(1)	
(2)	
(3)	
(4)	
(5)	
(6)	
(7)	
(8)	
(9)	
(10)	

In the spaces below, please list and describe your current negative role models (people you do not want to be like). If you need more room, use the back of this paper. You do not have to provide names, but please consider the following questions:

- What do you not admire about this individual?
- What undesirable qualities does he or she possess?
- What is his or her relation to you?
- In what ways does this person motivate you?

My current negative role models (People who I do not want to be like and the undesirable qualities they possess):	What I am doing to avoid becoming like this person:
(1)	
(2)	
(3)	
(4)	
(5)	
(6)	
(7)	
(8)	
(9)	
(10)	

APPENDIX B
POSSIBE SELVES QUESTIONNAIRE

What will you be like in the future? Probably everyone thinks about the future, and when doing so, we usually think about the kinds of experiences that are in store for us and the kinds of people we might possibly become. Each of us has some image or picture of what we will be like and what we want to avoid being like in the future. Think about *your* future—imagine what you'll be like, and what you'll be doing.

- In the spaces below, write what you expect you will be like and what you expect to be doing in the future.
- After each expected goal, mark X in the NO column if you are not currently working on that goal or doing something about that expectation and mark X in the YES column if you are currently doing something to get to that expectation or goal.
- For each expected goal that you marked YES, use the space to the right to write what you are doing to attain that goal. Use the first row for the first expected goal, the second row for the second expected goal and so on.

In the future, I expect to be	Am I am doing something to be that way		If yes, What I am doing now to be that way in the future
	NO	YES	
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

In addition to expectations and expected goals, we all have images or pictures of what we don't want to be like, what we don't want to do, or want to avoid being. First, think a minute about ways you would not like to be in the future—*things you are concerned about or want to avoid being like.*

- Write those concerns or selves to-be-avoided in the spaces below.
- In the space next to each concern or to-be-avoided self, mark X in the NO column if you are not currently working on avoiding that concern or to-be-avoided self and mark X in the YES column if you are currently doing something so that this will not happen in the future.
- For each concern or to-be-avoided self that you marked YES, use the space at the end of each line to write what you are doing this year to reduce the chances that this will describe you in the future. Use the first row for the first concern, the second row for the second concern and so on.

In the future, I want to avoid	Am I doing something to avoid this		If yes, What I am doing now to avoid being that way in the future
	NO	YES	
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

APPENDIX C
PERCEIVED SELF-EFFICACY MEASURE

For each of the following items, indicate how certain you are that you could perform the following tasks by choosing the appropriate number (1 – 7) on the following scale and marking it on the Scantron sheet.

ANSWER SCALE: 0-6

0	1	2	3	4	5	6
Cannot do			Moderately certain can do			Certain can do

1. When I am feeling down, I make myself feel better by thinking positive thoughts.
2. When I feel pain, I keep myself from thinking about it by thinking of other things.
3. When I fail, I stop worrying about it by thinking of how I can be successful in the future.
4. When I am faced with a difficult problem, I solve it by taking a step-by-step approach.
5. When I have a lot of work to do, I create a plan to complete it effectively.
6. When I have a bad habit, I overcome it by first identifying everything that supports the habit.
7. When I have to complete an unpleasant task I do it right away.
8. When I can choose a small reward immediately or a larger reward later, I choose to wait for the larger reward.
9. When I have a difficult job to do, I do it right away even though I would rather be doing something else.

APPENDIX D
DEMOGRAPHIC INFORMATION

Please answer the following questions by marking the appropriate number on your Scantron answer sheets.

1. Gender: If female, mark 0; if male, mark the number 1.

2. Your age: For example, if you are 21, mark the number 2 on item #38 on the Scantron sheet and mark the number 1 on item #39.

3. Class: 1 Freshman 2 Sophomore 3 Junior 4 Senior
5 Other (please describe) _____

4. Ethnicity: White = 0, Black = 1, Hispanic = 2, Asian = 3, Other = 4

5. GPA: Please estimate your GPA to two digits. For example, if your GPA is 3.5, mark 3 on line 42 and 5 on line 43.

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BIOGRAPHICAL SKETCH

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