

THE STUDENT, THE CONTEXT, AND ACADEMIC CHEATING:  
A VALENCE-BASED, INTERACTIONISTIC APPROACH

by

Valerie Ann Sotardi

---

Copyright © Valerie A. Sotardi 2008

A Thesis Submitted to the Faculty of the  
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

In Partial Fulfillment of the Requirements  
For the Degree of

MASTER OF ARTS

In the Graduate College

THE UNIVERSITY OF ARIZONA

2008

## STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgement of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: \_\_\_\_\_

## TABLE OF CONTENTS

|  |    |
|--|----|
| LIST OF FIGURES.....   | 5  |
| LIST OF TABLES.....  | 6  |
| ABSTRACT.....  | 7  |
| CHAPTER 1: INTRODUCTION.....                                     | 8  |
| CHAPTER 2: LITERATURE REVIEW.....                                | 12 |
| Evolution of Cheating Behavior.....                              | 12 |
| History of Academic Cheating.....                                | 14 |
| Cheating in Contemporary Higher Education.....                   | 18 |
| <i>Types of Academic Cheating</i> .....                          | 18 |
| <i>Prevalence of Academic Cheating</i> .....                     | 21 |
| The Problem of Cheating.....                                     | 23 |
| <i>Peer Influences</i> .....                                     | 24 |
| <i>Faculty Influences</i> .....                                  | 26 |
| <i>University Influences</i> .....                               | 27 |
| The Cheater Profile.....   | 28 |
| <i>Student Variables</i> .....                                   | 28 |
| Elements of Motivation and Academic Cheating.....                | 33 |
| <i>Drive and Arousal</i> .....                                   | 35 |
| <i>Self-Theories</i> .....                                       | 36 |
| <i>Achievement Goal Orientation</i> .....                        | 36 |
| <i>Social Cognition</i> .....                                    | 37 |
| <i>Academic Interest</i> .....                                   | 38 |
| Theoretical Framework of the Present Study.....                  | 38 |
| <i>Approach-Avoidance Motives</i> .....                          | 39 |
| <i>Individual Differences</i> .....                              | 41 |
| Dispositional Traits.....  | 41 |
| Affect and Temperament.....                                      | 42 |
| Motivational Systems.....  | 45 |
| <i>Linking Individual Differences and Regulatory Focus</i> ..... | 46 |
| <i>Linking Regulatory Focus and Achievement Goals</i> .....      | 49 |
| <i>Linking Achievement Goals and Academic Cheating</i> .....     | 51 |
| CHAPTER 3: METHODOLOGY.....                                      | 53 |
| Recruitment Process.....   | 55 |
| Participants.....  | 57 |
| Procedure.....   | 61 |
| Measures.....  | 61 |
| <i>Academic Cheating</i> .....                                   | 61 |

**TABLE OF CONTENTS – Continued**

|   |     |
|---|-----|
| <i>Personality</i> .....                                    | 63  |
| <i>Affect &amp; Temperament</i> .....                       | 64  |
| <i>Behavioral Activation &amp; Inhibition Systems</i> ..... | 65  |
| <i>Regulatory Focus</i> .....                               | 65  |
| <i>Achievement Goal Orientation</i> .....                   | 66  |
| Analyses.....   | 67  |
| <br>  |     |
| CHAPTER 4: RESULTS.....                                     | 74  |
| Cheating and Demography.....                                | 76  |
| <i>Gender</i> .....   | 76  |
| <i>Ethnicity</i> .....                                      | 76  |
| <i>Student Classification</i> .....                         | 77  |
| <i>Student Status</i> .....                                 | 77  |
| <i>Academic Year</i> .....                                  | 78  |
| <i>Academic College</i> .....                               | 78  |
| <i>Organization/Club Membership</i> .....                   | 79  |
| Study Hypotheses.....                                       | 80  |
| <br>  |     |
| CHAPTER 5: DISCUSSION.....                                  | 97  |
| Primary Objective of the Study.....                         | 97  |
| Secondary Objective of the Study.....                       | 99  |
| Implications.....   | 105 |
| <br>  |     |
| REFERENCES.....   | 107 |

## LIST OF FIGURES

|            |   |     |
|------------|---|-----|
| Figure 1.  | Structural Equation Model of Approach-Avoidance Temperament.....    | 40  |
| Figure 2.  | Hypothesized Academic Cheating Path Model.....                      | 54  |
| Figure 3.  | Study Participants' Reported Ethnicity.....                         | 58  |
| Figure 4.  | Undergraduate Student Status.....                                   | 59  |
| Figure 5.  | Participants' College Enrollment.....                               | 60  |
| Figure 6.  | Mean Scores of College Cheating for Academic Colleges.....          | 79  |
| Figure 7.  | Mean Scores for Achievement Goals & Types of Cheating Prevention... | 87  |
| Figure 8.  | Standardized Path Model.....  | 93  |
| Figure 9.  | Reduced Standardized Model for College Cheating.....                | 94  |
| Figure 10. | Revised Path Model from Positive Affect to College Cheating.....    | 95  |
| Figure 11. | Revised Path Model from Negative Affect to College Cheating.....    | 96  |
| Figure 12. | Affective Valence and Students' Achievement Goals.....              | 104 |

## LIST OF TABLES

|           |  |    |
|-----------|--|----|
| Table 1.  | General Motives for a Deceptive Act.....   | 16 |
| Table 2.  | Non-specific Strategies for a Deceptive Act.....   | 17 |
| Table 3.  | Cronbach’s Alpha Coefficients for Instruments.....   | 74 |
| Table 4.  | Correlations and Descriptive Statistics.....   | 75 |
| Table 5.  | Independent-samples t-tests (two-tailed) for Gender and Cheating across School Levels.....                   | 76 |
| Table 6.  | Independent-samples t-tests (two-tailed) for Student Classification and Cheating across School Levels.....   | 77 |
| Table 7.  | Independent-samples t-tests (two-tailed) for Student Status and Cheating across School Levels.....           | 78 |
| Table 8.  | Independent-samples t-tests (two-tailed) for College Organization Membership and College Cheating.....       | 80 |
| Table 9.  | Summary of Regression Analyses for “Approach” Personal Characteristics and Promotion Regulatory Focus.....   | 81 |
| Table 10. | Summary of Regression Analyses for “Avoidance” Personal Characteristics and Prevention Regulatory Focus..... | 82 |
| Table 11. | Summary of Regression Analyses for Types of College Cheating and Achievement Goals.....                      | 85 |
| Table 12. | Summary of Regression Analyses for Achievement Goals and Current Beliefs on Cheating (CBC).....              | 86 |
| Table 13. | Summary of Regression Analyses for Achievement Goals and Vignette Responses.....                             | 90 |
| Table 14. | Standardized Path Estimates for Hypothesized Model.....  | 92 |

## ABSTRACT

Student cheating has grown into a serious dilemma within classrooms across the world, especially among those in higher education. The objective of this study was to more closely examine the interaction between individual student differences and contextual orientations with respect to academic cheating among college students. Following a comprehensive, theory-driven path model ( $N = 311$ ), key outcomes of this study revealed that positive and negative affect were the best predictors of cheating through variables of regulatory focus and achievement goal orientation. Practical implications of this study speak to the role of temperament as a stable predictor of school-related behaviors. Increased attention to affective (non-cognitive) behavior and motivation may help to better understand the multifaceted underpinnings of the cheating phenomenon.

## CHAPTER 1: INTRODUCTION

Cheating is a topic that has remained a presence throughout academic literature for decades. Since the early twentieth century (e.g., Hartshorne & May, 1928), research from different areas of psychology has converged to reflect the layered complexities of this phenomenon as well as its related motivation. An assortment of causal hypotheses for cheating has been examined. This has ranged from individual student differences (e.g., demography and personality) to contextual settings and orientations (e.g., classroom goal structure and achievement goals). Numerous variables appear to influence the likelihood of cheating, as more than one-hundred studies have been conducted in order to gain an understanding of this behavior (Cizek, 2003). In the present, cheaters have become rather commonplace among students in higher education. Prevalence rates have been estimated to be as high as 95 percent of the college population (Whitley, 1998). Although we are aware of many characteristics that are associated with the motives of academic cheating today, a model that would effectively describe and predict this behavior is lacking.

The present study was conducted to examine two empirical gaps that exist within the current literature of academic cheating motivation. The first topic pertains to *the way in which cheating is assessed*. A conventional approach to studying student cheaters has included a veritable quest for “profile” variables that might be predictive of cheating behavior. This approach, which involves the majority of research studies on this subject, has been tested predominantly by simple correlational methods and, therefore, cannot contribute to causal information about academic cheating (Cizek, 2003). Even though it is

necessary to evaluate demographic trends, many researchers agree that the profile approach to academic cheating is critically flawed (Miller, Murdock, Anderman, & Poindexter, 2006; Nathanson, Paulhus, & Williams, 2006). For instance, the outcome of profiling cheaters is accompanied by a major problem: data findings are often conflicting and inconsistent (Jordan, 2001). Thus, it is important that future research concentrate on more predictive methods of academic cheating.

Anderman (2006) recently theorized that academic cheating involves the study of three components: personal variables, situational variables, and the interactions that exist between these two components. There has not, however, been sufficient attention to this person x situation association. According to current literature in personality psychology (Kammrath, Mendoza-Denton, & Mischel, 2005; Plaks, Shafer, & Shoda, 2003), an interactionistic approach may provide insightful information about person's motivation as it is activated by the situational context. With an increasing body of research related to the person x situation interaction, there is emerging support that this approach may be relevant to the study of academic-related behaviors, such as cheating. For the present study, I examined academic cheating by considering the effects of both individual student differences and contextual orientations among college students.

The second topic of this study addresses *the role of approach-avoidant patterns which are exhibited by traits and behavior*. The study of valence systems has persisted for thousands of years, as approach-avoidance behaviors are an innate form of motivation (e.g., Tooby & Cosmides, 1990). These tendencies include the activation of one system and the inhibition of the other system (thus, valence), either approach behavior, in which

a person is energized toward positive stimuli, or avoidance behavior, in which a person is energized away from negative stimuli (Gray, 1970). In this study, I examined the motives of academic cheating by considering the approach and avoidant tendencies shared by individual student differences and contextual orientations. In particular, valence systems of individual differences included three subsystems: dispositional traits (extraversion and neuroticism), affective traits (positive and negative affect), and motivational systems (behavioral activation and inhibition system). Valence systems of contextual orientations were comprised of two subgroups: regulatory focus (promotion and prevention) and achievement goals (mastery and performance).

The specific hypotheses for this study were:

1. "Approach" personal variables (i.e., extraversion, positive affect, and BAS) will each be a significant predictor of promotion regulatory focus.
2. "Avoidant" personal variables (i.e., neuroticism, negative affect, and BIS) will each be a significant predictor of prevention regulatory focus.
3. Promotion regulatory focus will be a positive predictor of mastery and performance-approach achievement goals.
4. Prevention regulatory focus will be a positive predictor of performance - approach and -avoidance achievement goals.
5. Performance-approach and -avoidance achievement goals will be positive predictors of cheating behavior. Mastery achievement goals will be a negative predictor of cheating behavior.

6. Regulatory focus is expected to act as a mediating variable between student variables and achievement goals.
7. Achievement goals will act as a mediating variable between regulatory focus and cheating behavior.
- 8: Academic cheating will be predicted by student achievement goals, regulatory focus, and personal variables.

This study was designed to contribute to research and practical advancements for the assessment of academic cheating and student motivation. It is necessary that empirical and theoretical changes be made to more closely examine the predictability of behavior in educational settings. As Watson (1913) explained, one of the fundamental objectives of conducting research in psychology is to observe and then *predict* an organism's behavior. If we want to make positive improvements regarding student conduct, then we must observe and anticipate certain behavioral trends. This can only be achieved by considering the predictive relationships between personal and contextual variables. Despite a large body of research concerning student cheating, it is quite clear that we have only scratched the surface.

## **CHAPTER 2:**

### **LITERATURE REVIEW**

#### Evolution of Cheating Behavior

Human behavior is often easy to observe yet difficult to explain. For millennia, man has possessed an inherent need to explain his unique spectrum of characteristics—from affect to cognition, language, and beyond. This impetus exists because of an instinctive fight for survival and, in order to learn more about one's own ontogeny (the development of the individual), he or she must first understand the nature of its phylogeny (the development of the species; Bjorklund & Pellegrini, 2000, 2002; Fishbein, 1976; Geary & Bjorklund, 2000). In simpler terms, people are motivated to avoid the naturally selective forces of the environment, so it is therefore beneficial to explore the tactical strategies that others have used. Based on specific demands, adaptive behavior patterns (known as evolutionarily stable strategies; Wade & Breden, 1980) typically function to mirror successful behaviors for the benefit of the species. It is likely that many of today's strategies—cheating, for example—have adapted because of distinct needs that were necessary to thrive as a species (Smith, 2004).

Forms of deception may be viewed as some of the more sophisticated strategies. In order for a person to successfully employ deceptive strategies, he or she must possess three cognitive competencies: (1) the ability for social recognition, (2) the ability to detect familial networks, and (3) the ability to evaluate how another might react in a specific situation, or theory-of-mind (Cartwright, 2000). Deceptive behavior has existed for thousands of years, and strategies such as cheating (a subclass of deceit) has served to

counteract the naturally selective forces in which situational threat demanded “brains” rather than “brawn.” According to Cartwright (2000), detection of cheaters within the social environment has been so important for society that human beings today are actually receptive to this behavior on an innate level, as it has been found that males and females are more likely to recognize a cheating face, rather than a trustworthy face (e.g., Mealey, Daood, & Krage, 1996). Forms of deception have left biological footprints in the modern-day strategies of human behavior and, thus, the adaptive proliferation of man (Dawkins, 1976). The study of cognitive processes and cheating behavior has held the empirical spotlight in recent decades; however, human cognition is only a segment of the bigger picture.

Even though cheating has been beneficial to the human species, it is also a social taboo. This comes from the idea that deception is dangerous within a discrete population because cheating can only be successful if the rest of the citizens do not cheat (Dawkins, 1976). In essence, if everyone cheated, there would be no incentive to do so, given that there would no distinct advantage over others in a competitive milieu. It may be that, as a response to deception, moral and legal codes were formed in order to reduce perceived threat (e.g., Clotfelter, 1977); moreover, models of criminal behavior have suggested that cheating is a *rational* decision-making process (Becker, 1968).

Cheating can be best understood by an economic, cost-benefit ratio: people will inherently strive to maximize the predicted benefits of a behavioral choice relative to the anticipated expenditures, or costs (Becker, 1968; Bunn, Caudill, & Gropper, 1992; Kerkvliet & Sigmund, 1999). If the overall payoff variance (Daly & Wilson, 2000)

provides an advantage for the cheater, then there is a greater likelihood for self-justified success. In addition, the greater a benefit is, then the predicted frequency of deceptive behavior should increase; however, the costs will grow more precarious (Becker, 1968). An inverse relationship exists, therefore, between the probability of failure and the incidence of cheating. In sum, cognitive, social, and affective processes occur during any act of cheating, those which are ultimately perceived to be acceptable or unacceptable based on the context.

The study of cheating has been applied to social, political, and business arenas; however, there is a natural analogy to education (Bunn et al., 1992). It has been theorized that students may cheat in order to gain short-term or long-term, goal-directed advantage. Today, there have been hundreds of studies to examine this phenomenon. The following section will discuss literature related to cheating using an academic perspective.

### History of Academic Cheating

Cheating has been linked to the field of education for centuries. For example, it has been reported that civil labor workers in ancient China were required to complete a service examination and, in order to obtain an advantage over others, many resorted to cheating by hidden cloth strips of test information sewn within their shirt sleeves, also known as crib notes, to take with them to the testing location (Brickman, 1961). A more modern-day example of cheating has included embezzlement and sale for test answers (as high as \$40,000) associated with a business school's entrance examination in Japan

(Chapman, 1980). Evidence of these cheating efforts (among others) remains an illustration of the inherent motivation to defeat one's competition.

One of the earliest and most recognizable works concerning cheating in the schools is that of Hartshorne and May's *Studies of Deceit* (1928). Although their intentions were to better understand the individual differences of cheating, four years and a pair of studies later, the researchers generated such convincing evidence about student behavior that they would eventually prompt more than one hundred subsequent studies. The Hartshorne and May studies revealed several key assumptions about student cheater: (1) he or she is cognizant of the cheating transgression and knows that it is necessary to conceal this behavior, (2) although it is possible to obtain the benefited item in alternative means, it appears too burdensome or requires abilities that the student does not possess, and (3) this deceitful behavior is likely to be socially rejected by those not affiliated with the student, but condoned by others to which he or she is affiliated. According to the authors, a complete act of student cheating involves a set of specific competencies as well as non-specific strategies to carry out the act of deception (see Tables 1 and 2, for details). Most of all, it was theorized in these studies that there are two underlying motives for student cheating to exist: (1) to escape disapproval or (2) to gain approval.

Table 1.

*General Motives for a Deceptive Act (Hartshorne & May, 1928)*

|     | Description   | Motive(s)               |
|-----|---|-------------------------|
| 1.  | The desire to do positive harm to the deceived and cause suffering and hardships  | Revenge                 |
| 2.  | The desire to cause inconvenience or embarrassment or perhaps dishonor to the deceived  | Jealousy or envy        |
| 3.  | The desire to gain something in the way of money, objects, property, or advantage, prestige, applause, approval, etc.               | Aggressive greed        |
| 4.  | The desire to protect or defend oneself against reproof, embarrassment, physical pain, punishment, dishonor, loss or property, etc. | Defense tendencies      |
| 5.  | The desire to compensate oneself for some loss or some handicap   | Compensatory tendencies |
| 6.  | The desire to promote or defend the interests and welfare of a person or persons to whom the deceiver owns allegiance               | Loyalty to friends      |
| 7.  | The desire to promote or defend the welfare and interests the institutions or organizations to whom the deceiver owns allegiance    | Loyalty to a cause      |
| 8.  | The desire to promote or defend the welfare and happiness of a person or persons to whom the deceiver does not own allegiance       | Social justice          |
| 9.  | The desire to promote or defend the welfare of an institution or organizations to whom the deceiver does not own allegiance         | Community welfare       |
| 10. | The desire to promote or defend the welfare of the enemies of the deceiver  | Cooperative respect     |

Table 2.

*Non-specific Strategies for a Deceptive Act (Hartshorne & May, 1928)*

---

| Description   |
|---|
| 1. By giving the deceived actual false information either oral or written but communicated by language, such things as fabrications, invention of stories, reporting things that never happened       |
| 2. By distorting true information so that the deceived will be misled as to conclusions. This is done by overstatements, exaggerations, etc. or by understatements or by otherwise twisting the truth |
| 3. By concealing information, by silence, evasions, denials, etc.   |
| 4. By acting in such a way to mislead the deceived concerning the true intentions, motives, beliefs, or feelings of the deceiver or others  |
| 5. By supplying the deceived with inadequate sensory data, so that a total situation will appear different from what it really is.  |

---

Since the advent of *Studies of Deceit* (1928), many empirical studies have considered the reasons for and the solutions of the phenomenon of academic cheating. Previous cheating research can be grouped into two general approaches: (1) identification of descriptive cheater characteristics and pre-dispositional tendencies (Bolin, 2004; Bunn et al., 1992; Michaels & Miethe, 1989); and (2) exploration of contextual and motivational variables. The issue of cheating in schools has been voiced for decades; however, the problem persists. In order to gain an understanding of the phenomenon today, the next sections will address the current state of cheating within the academic classroom.

## Cheating in Contemporary Higher Education

Academic cheating can be defined as a goal-directed act in which a student(s) purposefully contravenes a rule (or set of rules) that has been pre-established by the governing institution so as to obtain an academic advantage in order to either compete with or cope with perceived pressure. It has historically been a challenge for researchers to accurately define academic cheating (Cizek, 2003) since a student's ethical and motivational factors tend to change over time and across situations. Consequently, many different operational definitions have been used across research studies (Blackburn, 1996), such as deviance (Harp & Taitz, 1966; Hill & Kochendorfer, 1969; Mischel & Gilligan, 1964; Parr, 1936), transgression (Lueger, 1980), and deception (Aiken, 1991; Hartshorne & May, 1928; McQueen, 1957; Stevens & Stevens, 1987; Taylor & Lewit, 1966). There has also been great ambiguity with respect to students' intentional motives, and the premeditated planning of dishonest behavior.

### *Types of Academic Cheating*

The concept of academic cheating has certainly changed over time and, therefore, several theories have been designed to embrace the different kinds of cheating. One of the earliest works was that of Hetherington and Feldman (1964), who suggested that there are four types of cheating: (1) independent-opportunistic, in which cheating is impromptu and impulsive; (b) independent-planned, in which cheating is premeditated; (c) social (active) cheating, in which multiple people participate and one actively instigates the cheating; and (4) social (passive) cheating, in which multiple people are involved, yet participate in an indirect and passive manner. More recently, Cizek (1999) created a more

comprehensive, taxonomic structure involving different types of cheating that are likely to occur in the contemporary classroom. The first type of cheating described involves the collaborative communication with others, despite exclusionary guidelines of a task. These circumstances may occur if a student whispers a test answer to another student in class (also known as *collusion*), even though the examination was instructed as independent work (Lyon, Barrett, & Malcolm, 2006). Some of the largest scandals in higher education have involved acts of collusion. For example, seventy-seven undergraduate students taking an entry-level computer programming course at the elite Massachusetts Institute of Technology (MIT) were disciplined after they had admitted to working in groups even though they were told the assignments were to be done independently (Butterfield, 1991). Another major case of collusion included a scandal among thirty-eight M.B.A. graduate students (comprising 10 percent of the program) at Duke University, who were caught cheating after submitting nearly identical test answers for a take-home, open-book final examination (e.g., Conlin, 2007; Damast, 2007a; 2007b).

The second type of cheating, according to Cizek (1999), involves the use of prohibited materials during a task (e.g., a cheat or “crib” sheet). There have been many cases, especially among higher educational institutions, concerning this form of cheating. For example, it was reported that students at Brigham Young University (BYU) were caught cheating by using prohibited test materials during online quizzes (Moake, 2004). Although this case is somewhat less serious than others, is consistent with the old adage: *If there is a will, there is a way*. Today, test administrators have recovered cheating materials including notes that were stored within the barrel of a ballpoint pen, under the

brim of a baseball cap, on tape or bandages applied to the skin, and on a stick of gum. Items involving technology have included pagers, personal digital assistant (PDA), calculators, and various types of cellular phones (Cizek, 2003).

The third type of cheating involves the capitalization on others. This might include situations in which a student changes an answer after an assignment has been graded and returned, or intentionally falsifies others' scores during peer grading. The latter, in fact, has been the subject in a U.S. Supreme Court case, *Owasso Independent School District No. 1-011 v. Falvo*, 534 U.S. 426 (2002). This case concerned a situation in which students were allowed to grade each others' tests and assignments as the teacher read aloud the correct answers. According to the prosecutors, Owasso Independent School District was in violation of Family and Educational Rights and Policy Act of 1974 (FERPA), 20 U.S.C., 1232g against the release without parental consent of students' educational records. Interestingly, the Supreme Court affirmed FERPA in violation, offering "monetary relief" to the Falvo family (2002).

Although not in his original set of three types of academic cheating, Cizek agrees that a fourth type is that involving plagiarism (2003). Many agree that plagiarism is a significant adherent to cheating; however, it is incredibly difficult to judge intent. The concept of plagiarism is the submitting of a person's work that is actually someone else's (Cizek, 2003). There are, in fact, different subtypes of plagiarism that might confound its defining process. As a result, plagiarism lacks a universal definition (Yeo, 2007; Pincus & Schmelkin, 2003).

Less-researched types of academic cheating exist such as passive cheating, which is defined as an unintentional process of obtaining information about a test or assignment that still affects one's performance (e.g., Condon et al., 2000; Ahlers-Schmidt & Burdsal, 2004; Schmidt, 1999). In sum, there are various types of academic cheating, each making the phenomenon increasingly complex.

### *Prevalence of Academic Cheating*

In many ways, cheating is an academic epidemic. It has been suggested that nearly 30 percent of elementary school students (Cizek, 1999), 60 percent of middle or junior-high school students (Evans & Craig, 1990), 74 percent of high school students (McCabe, 2001), and college prevalence rates may be as high as 95 percent of the student population (McCabe & Treviño, 1997). Whitley (1998) completed a meta-analysis of forty-six studies that were involved in the measurement of cheating prevalence rates, determining that studies have reported rates from 9 to 95 percent. According to his study, Whitley also found that rate of cheating on exams has been as high as 82 percent, homework assignment has been as high as 83 percent, and plagiarism ranged from 3 to 98 percent ( $M = 47$ ) across different grade-levels. There have been particularly salient findings within the area of plagiarism, as McGregor and Streitenberger (1998) reported in a quasi-experimental study aimed to reduce plagiarism approximately half of the students in a high school English class in Texas admitted to plagiarizing a published source, and this was the anti-plagiarism *treatment* group! Even more staggering were the comparison groups (two English classes in Alberta, Canada), with 69 percent of the students had plagiarized and, of that group, nearly 20 percent of had copied from the source verbatim.

With respect to higher education, McCabe (2005), the president and director of the Center of Academic Integrity, has estimated that 40 percent of college students have plagiarized at some point. Other studies across the United States, Australia, and Great Britain (e.g., Lyon et al., 2006; Carroll, 2004) have agreed that at least 10 percent of college students' work may be plagiarized. Although there is a wide range of prevalence rates across studies and may be attributed to different operational definitions of cheating itself, it can be best summarized that cheating simply occurs too often.

There has been some debate as to whether cheating has increased over time. According to Whitley (1998), mean prevalence rates of cheating may have alluded to the fact that cheating has become more pervasive over the last few decades. Several researchers agree with this assertion (Collison, 1990; McCabe, 2001; McCabe & Bowers, 1994; Peyser, 1992); however, others have argued that perhaps cheating rates have *not* changed. Some students, for example, may be more willing to admit to their transgressions today than in past years (e.g., Miller et al., 2006). It is certainly challenging to measure the prevalence of cheating because of the measurements of self-report (Allen, Fuller, & Luckett, 1998; Chapman, Davis, Toy, & Wright, 2004), and it is likely that some students have not been forthright about their behavior. Nevertheless, the frequency of academic cheating is high, thus compromising the quality of education among students, teachers, and administrators.

## The Problem of Cheating

Cizek (2003) asserts that cheating would be a much simpler issue if it only pertained to laws and regulation. Academic cheating often results in repercussions that affect many different groups, such as student, peers, professors, and institution in which the student is enrolled. Although academic cheating is a relatively minor problem relative to other societal concerns, if unmediated, it can make both short-term and long-term effects. Cheating alters the validity of learning, knowledge, and ability in the worlds of education and workforce.

One of the earliest concerns with respect to academic cheating involves ethical violation. Morality pertains to the difference between ideal and prohibited behavior (Kagan, 2005) and, as explained by Kohlberg (1985), moral dilemmas occur when there is cacophony between social values and social facts. Moral conduct is considered to be a contextually-specific behavior (e.g., Eisenberg, 2004), and the concept of situational ethics pertains to cheating academic cheating in that a student may be able to turn on and off his or her values based on the context (e.g., LaBeff, Clark, Haines, & Diekhoff, 1990; McCabe, 1992). From the time when academic cheating was first studied, morality and its deterioration within the field of education has been a longstanding issue (e.g., Baird, 1980). Today, ethical concerns of student cheating can be best summarized as the conflict between cognitions—that even though cheating is morally wrong, it may serve to satisfy some strongly desired goal.

### *Peer Influences*

At the peer level, academic cheating is perceived as an unfair disadvantage to those not involved (of course, those who are involved may perceive cheating as a certain advantage). A clear problem among students arises when scores are norm-referenced. For example, if grades are statistically determined in a classic bell-curve, then students who act honestly may receive lower scores than those who act dishonestly (Cizek, 2003). Thus, poorer grades for honest students may result in various forms of punishment such as social embarrassment, reduced self-perceptions of competence, and more tangible repercussions (e.g., like losing a scholarship). Academic cheating may actually compel honest students to compete with dishonest students, with the perception that within the classroom context, *not* cheating may actually be a *disadvantage*.

High prevalence rates of academic cheating are unquestionably related to student perceptions concerning integrity, and there has been a great deal of empirical attention to the beliefs of students and their peers. A common view is a normative perspective, in which students come to college with a cheating mentality: if everybody does it, and no one gets caught (as only 5 percent of cheaters are actually caught; Chapman et al., 2004), there are few consequences (Johnson & Martin, 2005). Since social norms often increase peer behavior (McCabe, 2001) the perceived frequency of cheating and misconduct are likely to influence the desire for students to synchronize their cognitions with others' behavior (Hard, Conway, & Moran, 2006). Overestimating (Hard et al., 2006; Koljatic & Silva, 2002) and underestimating (Jordan, 2001; Wajda-Johnston, Handal, Brawer, & Fabricatore, 2001) the rates of cheating both appear to influence student behavior.

Moreover, it has been suggested that social norms may generate a ‘false consensus effect’ (Chapman et al., 2004; Ross, Green, & House, 1977), in which cheaters may estimate higher rates of other students’ cheating in order to preserve their own self-image (Jordan, 2001).

Many students believe that cheating is immoral, but are unwilling to act against it. Even those who are at a blatant disadvantage find themselves in a moral dilemma of whether or not to report an observed case of cheating (Kibler & Paterson, 1988). Jendreck (1992) found that 74 percent of the sample participants had witnessed an act of cheating but ignored it, and only 1 percent followed the institution’s policy on academic integrity, a finding that was consistent with previous studies (e.g., Baird, 1980). It was suggested that there are two reasons as to why non-cheating students fail to report an observed incident of cheating: (1) they do not know the rules and policies, or (2) they simply do not care about or understand the seriousness of cheating (Jendreck, 1992). This, however, may not always be the case. For example, Whitley & Kost (1999) argued that students might share a strong social bond linking peers to reciprocal altruism, so that a student who might find him or herself in a future predicament, it would thus be more beneficial to help others to cheat so that he or she can receive help when it is needed. Therefore, assisting a friend may be viewed as a justifiable act and may trivialize the seriousness of cheating (LaBeff et al., 1990; McCabe, 1992). It seems quite paradoxical that students would cheat in order to possibly increase their grades (in a competitive nature) but also help each other at the same time. Nevertheless, these patterns appear to be compatible

with the notion that students' social perceptions of cheating to be derived from the dissonance between moral values, the goals of cheating, competition, and altruism.

### *Faculty Influences*

Academic cheating can make a strong impact on teachers. According to Garavalia, Olson, Russell, and Christensen (2006), one problem of cheaters facing educators is the interference that arises when he or she tries to judge a student's academic work. Teacher self-efficacy may be compromised if he or she finds out that the students have not yet mastered. In a similar vein, educators may fear that choosing to address cheating problems may result in professional setbacks (e.g., receiving poor teacher evaluations). In some circumstances, educators advertently ignore or privatize a cheating incidence so as to be diplomatic. A problem with this approach is that the social climate may continue to remain clandestine, and other issues of student cheating may persist (e.g., Barnett & Dalton, 1981).

There has been less attention to faculty perceptions of student cheating. According to Hard et al. (2006), faculty beliefs about cheating are valuable for two reasons: to *prevent* and to *challenge* issues of student cheating. In addition, those faculty who perceive the prevalence of cheating as high are more likely to make counteractive efforts (e.g., such as using certain testing methods, using plagiarism software); in contrast, those who underestimate the problem of cheating are less likely to challenge an incident of cheating as an effort to avoid issues concerning student misconduct (Hard et al., 2006; Keith-Spiegel, Tabachnik, Whitley, & Washburn, 1998; Schneider, 1999). Even though social norms may not be directly relevant to the teacher-student relationship,

evidence as shown that the Pygmalion effect may be an indirect influence on student cheating and motivation. When a teacher changes his or her own expectations of a certain student, the teacher may influence students' perceptions of achievement (Hard et al., 2006; Harris & Rosenthal, 1985). In sum, perceptions of the parties involved are important to the approval or disapproval of behavior. Students are largely influenced by social norms; however, it has been argued that a teacher can still influence the student social group without actually being a member.

#### *University Influences*

Beyond student and teacher issues, academic cheating also alters the integrity of a higher-education degree. When students cheat, the intentions of knowledge acquisition are lost, thus placing the institution's reputation at-risk. In yet a broader sense, academic cheating also has bearing on the entire field of education. Specifically, high-quality assessment is contingent upon measures that are reliable, valid, generalizable, and objective (e.g., Frey, Petersen, Edwards, Pedrotti, & Peyton, 2005), and cheating in education strongly distorts the reality of student learning.

There is also a concern of transference of cheating strategies from school to career, as Beck and Ajzen (1991) have asserted that previous behavioral patterns are strongly predictive of future behaviors. Evidence has shown that students who cheat in college are more likely to act unethically in the workplace (Grimes, 2004; Harding, Carpenter, Finelli, & Passow, 2004; Lawson, 2004; McCabe & Treviño, 1995; Nonis & Swift, 2001; Petress, 2003; Ravovski & Levy, 2007), with issues such as ignoring quality problems, lying about work quality, ignoring safety issues, accepting improper gifts,

taking credit for others' work (Harding et al., 2004), and theft or fraud (e.g., Beck & Ajzen, 1991; Lucas & Friedrich, 2005). In sum, there is ample evidence suggesting that academic cheating can engender serious problems in the areas of education as well as future unethical behavior in the workplace. It is necessary to consider specific reasons why a student would risk the consequences of cheating; accordingly, the following sections will address these factors.

### The Cheater Profile

In the past, descriptive variables have been measured to identify certain student characteristics that may be associated with cheating. Although it is necessary to evaluate patterns in order to predict and influence the behavior of students, it must be noted that a great deal of early research in this area of study has been aimed at identifying a cheater "profile." Whereas some of these findings have been helpful to the field, others are considered relatively fruitless unless they are applied to interventional processes in the future (Miller et al., 2006). Jordan (2001) asserted that the problems of cheating research are threefold: (1) cheater profile studies are inconsistent, (2) descriptive data does not necessarily contribute to intervention, and (3) most intervention strategies (e.g., honor code systems) have not been particularly effective. The majority of previous studies are correlational in nature and therefore, do not reflect causation (Cizek, 2003).

### *Student Variables*

The most frequently researched proximal variable in the study of academic cheating is gender. Although there have been many studies aimed to assess behavioral

differences between the sexes, evidence has been somewhat mixed. Some studies have report males to have an overall greater incidence of cheating (Baird, 1980; Baldwin, Daughtery, Rowley, & Schwarz, 1996; Calabrese & Cochran, 1990; Davis, Grover, Becker, & McGregor, 1992; Hetherington & Feldman, 1964; Johnson & Gormly, 1971; Kelly & Worrell, 1978; Michaels & Miethe, 1989; Newstead, Franklyn-Stokes, & Armstead, 1996; Roskens & Dizney, 1966; Schab, 1969); however, it has been suggested that females may be more likely to self-disclose dishonest behavior than males (Cizek, 2003) and prevalence rates among females may be increasing (McCabe, 2001).

Many other descriptive variables have been investigated. For example, a positive relationship with cheating has been found among the following variables: socioeconomic status (SES; Leveque & Walker, 1970), student extracurricular activities (Baird, 1980; Bonjean & McGee, 1965; Diekhoff, LaBeff, Clark, Williams, Francis, & Haines, 1996; Haines, Diekhoff, LaBeff, & Clark, 1986; Harp & Taietz, 1966; Kerkvliet, 1994; McCabe & Bowers, 1996; McCabe & Treviño, 1997; Stannord & Bowers, 1970; Storch & Storch, 2002; Zimmerman, 1999), full-time employment (Nowell & Laufer, 1997), first-born children (Hetherington & Feldman, 1964), students with scholarships (Diekhoff et al., 1996), and students with English as a second language (Ng, Davies, Bates, & Avellone, 2003). Inverse relationships with cheating have included: intelligence (Atkins & Atkins, 1936; Campbell, 1933; Canning, 1956; Drake, 1941; Gross, 1946; Hartshorne & May, 1928; Hetherington & Feldman, 1964; Hoff, 1940; Leveque & Walker, 1970; Parr, 1936; Tuttle, 1931a, 1931b), grade level (Cizek, 2003), religious participation (Sutton & Huba, 1995), and student levels of responsibility (Campbell, 1933; Diekhoff et al., 1996;

Graham, Monday, O'Brien, & Steffan, 1994; Hetherington & Feldman, 1964; Nowell & Laufer, 1997). Lastly, there has been no significant relationship between cheating and ethnicity (Anderman, Griesinger, & Westerfield, 1998; Calabrese & Cochran, 1990; Sierles, Kushner, & Krause, 1988), religious membership (Sierles, Hendrickx, & Circle, 1980), different political beliefs (Clouse, 1973), parents' level of education (Anderman et al., 1998), or class attendance (Black, 1962).

Other research on personal variables has focused on personality types and traits. Findings have been inconsistent with respect to the study of cheating and Big Five traits, which include: Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to Experience. For example, the association between the student's level of extraversion and his or her likelihood of cheating has been mixed (de Bruin & Rudnick, 2007; Jackson, Levine, Furham, & Burr, 2002; Keehn, 1956; Singh & Akhtar, 1972; Stephenson & Barker, 1972). There has been some evidence that a strong positive correlation between cheating and increased sociability exists (Hetherington & Feldman, 1964; Johnson & Gormly, 1971; Schwartz, Feldman, Brown, & Heingartner, 1969; White, Zielonka, & Gajer, 1967), increased need for affiliation (Singh & Akhtar, 1972), as well as interpersonal dominance (Kelly & Worell, 1978); however, these outcomes may be somewhat misleading, as individuals who have a high level of sociability may have a *reduced* need for affiliation. Moreover, it has recently been hypothesized that excitement-seeking—a lower-order trait of extraversion—is associated with risky behavior (Baer, 2002; Donohew, Zimmerman, Novak, Feist-Price, & Cupp, 2000), and may therefore be linked to increased academic cheating (Miller et al., 2006). It appears as

though personality traits may be more predictive in conjunction with other stable personal variables.

Neuroticism is predominantly characterized by a constant fluctuation of mood. There is a basic assertion that neuroticism is predictive of deviant behavior, (e.g., Epps & Parnell, 1952; Fitch, 1962; Gibbens, 1962; Glueck & Glueck, 1950; Metfessel & Lovell, 1942; Pierson & Kelley, 1963; Siegman, 1952; Trasler, 1962), and there have been several studies indicating that a positive relationship between neuroticism and cheating may exist (e.g., Singh & Akhtar, 1972). Moreover, impulsivity is known to be a lower-order trait of neuroticism, and there has been research linking impulsive tendencies with risky behaviors, such as cheating (Donohew et al., 2000; Martins, Tavares, da Silva-Lobo, Galetti, & Gentil, 2004). Another lower-order trait of neuroticism, self-conscious qualities, may be linked to one's need for social approval, a characteristic that has been found to be a considerable predictor of cheating behavior (Antion & Michael, 1983; Crowne & Marlowe, 1964; Lobel & Levanon, 1988; Millham, 1974). Again, it appears as though personality traits may be more predictive of cheating through the assessment with other stable personal variables.

The remaining three traits of the Big Five structure have received less attention. Conscientiousness is traditionally considered to be highly relevant to education (De Raad & Schouwenburg, 1996; McCloy, 1936), such as high academic performance (e.g., Bauer & Liang, 2003; Chamorro-Premuzic & Furnham, 2003a, 2003b; Conard, 2006; De Fruyt & Mervielde, 1996; Furnham, Chamorro-Premuzic, McDougall, 2003; Goff & Ackerman, 1992; Gray & Watson, 2002; Lievens, Coetsier, De Fruyt, & De Maeseneer,

2002; Phillips, Abraham, & Bond, 2003; Wolfe & Johnson, 1995), due to subtraits that include self-discipline, maturity, perseverance, and effortful control (Goldberg, 1992; Jensen-Campbell & Graziano, 2005; Middleton & Guthrie, 1959; Oakland, 1969; Schmit & Ryan, 1993; Webb, 1915). There has been some, albeit limited, attention to the relationship between cheating and conscientiousness suggesting that these variables are inversely related (e.g., Jensen-Campbell & Graziano, 2005).

Agreeableness is represented by social constructs, such one's likelihood to cooperate with others (Graziano, Hair, & Finch, 1997) and social conformity. This personality trait has not been well researched directly with academic cheating; however, a study recent by Jensen-Campbell and Graziano (2005) reflected that agreeableness might be inversely related to academic cheating. The researchers explained that a student who is highly agreeable may be more likely to "recognize and resist" cheating temptations in order to stay in positive light with his or her peers and teachers. In contrast, one who is highly agreeable may possess strong social goals that may increase his or her likelihood to cheat when cheating is perceived to be a social norm.

Openness to experience refers to a person's intellect, imagination, or culture (McCrae & Costa, 1997). This trait can be best illustrated by lexical characteristics such as independence, adventurous, original, and artistic (John, 1990; McCrae & Costa, 1987; Norman, 1963). Based on current research, there are no known studies that have directly measured students' openness to experience and academic cheating. What *has* been found, however, is a positive association with moral reasoning (Dollinger & LaMartina, 1998; Dollinger, Orf, & Robinson, 1991; Lonky, Kaus, & Roodin, 1984).

Morality has been a longstanding subject on the study academic cheating. Moral agency can be understood as one's ability to influence and shape ethically relevant situations (Erskine, 2003). According to Bandura (1999, 2002), people possess the autonomy to avoid unethical behavior and promote ethical behavior (similar to an approach-avoidance valence), and in order to make this kind of judgment, one must possess a set of moral values that constitutes what is right from wrong as well as substantiate one's behavior in comparison to the social environment's norms of accepted behavior (Kagan, 2005). Moral traits such as honesty, justice and fairness, courage, integrity, and kindness (e.g., Campbell, 2004; Holmes, 1992; MacIntyre, 1981; Wynne & Ryan, 1993) keep consistent one's moral behavior by regulating his or her cognitive decision-making choices (Scott, 2002) as well as affective mechanisms that propel behavioral action (Bandura, 2002). Thus, moral agency, moral reasoning, and moral behavior are traits that are likely to be more-or-less stable. Due to their direct relevance to ethics and the upholding of one's interaction with situational context, morals are an important factor underlying cheating behavior. There has been some empirical attention to certain dispositional traits that may be predictive of moral traits (e.g., Dollinger & LaMartina, 1998; Miller, 2007), which may provide beneficial insight with respect to personality, moral behavior, and decision-making with respect to cheating.

### Elements of Motivation and Academic Cheating

It is of great magnitude to consider the reasons why a student might be motivated to cheat. Traditional nomenclature in this area has aimed to identify classroom variables

that are correlated with cheating behavior. There has been, however, emerging research that specifically addresses elements of motivation. Early theorists (e.g., Hartshorne & May, 1928; Smith, Ryan, & Diggins, 1972) contended that there are two primary reasons why a student might be driven to cheat: to increase his or her chances for success, or decrease his or her chances for failure. This concept is rooted in the approach-avoidance modes of behavior in which motivation develops as a result of one's innate desire to seek reward and avoid punishment.

Through a motivation perspective, academic cheating is a means to an end. Across a pantheon of studies, one superincumbent goal for cheaters has surfaced: *Students cheat to obtain a grade that is more likely to be better than if he or she did not cheat* (Cizek, 2003). Cheating is associated with motives that follow goals of either achievement or affiliation. Blackburn (1996) identified five domains in which student motivation for cheating tends arise: (1) social motives, which include one's need for affiliation, peer pressure, the avoidance of disappointing others, and altruistic efforts, (2) instructional motives, which includes one's perception of the teacher as incompetent or unreasonable amounts of work, (3) work avoidance motives, which include laziness, time conservation, or alienation, (4) extrinsic motives, which includes one's primary desire to attain rewarding grades, and (5) intrinsic motives, which includes one's enjoyment or flow in the act of cheating. The following sections further explore salient theories and research in the area of motivation and academic cheating.

### *Drive and Arousal*

Although theories of drive and arousal have rarely been used as contemporary measures of cheating due to their respective lack of cognitive propensities, there have been several studies that recognize motivational systems as connected to academic cheating. For example, Steininger, Johnson, and Kirts (1964) determined that highly arousing, anxiety-provoking situations are associated with increased levels of cheating. This claim was further supported by another study (Mischel & Gilligan, 1964), in which overstimulation of arousal are likely to reduce one's delay of gratification and, as a result, a preference for immediate gratification of achievement was found to be associated with a higher incidence of cheating. In a more cognitive approach, Dienstbier and Munter (1971) confirmed that one's appraisal of a situation elicits a certain physiological response (either sympathetic or parasympathetic) and, consequently, the cognitive acknowledgement of that new affective state would result in different behaviors. Students with *lower* levels of *reduced* arousal were, therefore, *more* likely to cheat. In addition, Lueger (1980) suggested that students are more likely to be motivated to *remove* the aversive sensations of failure rather than seek the rewards of achievement (which would become a salient focus in the area of approach and avoidance modes of achievement motivation). These early studies suggest that the biological components of arousal within motivational systems contribute to one's recognition and response to certain stimuli and, therefore, may be important individual differences that function to shape one's predispositions to cheat.

### *Self-Theories*

Self-theories have been found to be somewhat predictive of academic cheating. For example, self-efficacy, defined as one's task-specific beliefs in the likelihood of reaching desirable outcomes (Bandura, 1986), is inversely related to cheating behavior (Finn & Frone, 2004; Murdock, Hale, & Weber, 2001). There has also been evidence that low self-efficacy is associated with decreased study time (e.g., Norton, Tilley, Newstead, & Franklyn-Stokes, 2001), attendance (Michaels & Miethe, 1989), and other forms of academic self-regulation (Roig & DeTommaso, 1995). Negative perceptions of outcomes, such as self-handicapping, have also been found to be positively related to cheating behavior (Anderman et al., 1998; Corcoran & Rotter, 1989).

Research related to student competence beliefs has also been linked to cheating. For example, there has been attention to the approach-avoidance modes of achievement motivation: (1) hope of success, and (2) fear of failure (Clark, Teevan, & Ricciuti, 1958; McClelland, Atkinson, Clark, & Lowell, 1953). Fear of failure is defined as an active avoidance of some aversive outcome and, according to Rost and Wild (1994), is positively correlated with student cheating.

### *Achievement Goal Orientation*

More contemporary studies in the area of motivation and cheating have placed an empirical spotlight on the pursuit of academic goals (e.g., Murdock & Anderman, 2006; Murdock et al., 2001). This achievement-related focus is valuable to the study of academic cheating due to the malleability and controllability of goals (Anderman, 2006). In addition, this focus incorporates diverse goals that are present in today's classrooms

(Anderman & Anderman, 1999; Dweck & Leggett, 1988; Midgley, 2002; Murdock & Anderman, 2006; Ryan, Hicks, & Midgley, 1997; Urdan, 1997; Wentzel, 1998).

Goals and cheating have been examined in application to intrinsic motivation theory (e.g., Deci & Ryan, 1985) as well as achievement goal theories (Ames, 1992; Dweck & Leggett, 1988; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997). Extant literature has revealed that a natural *desire* to learn is less likely to be associated with cheating behavior than a socially manufactured *need* to learn (e.g., Anderman et al., 1998; Anderman & Maehr, 1994; Anderman & Midgley, 2004; Dweck & Sorich, 1999; Jordan, 2001; Murdock et al., 2001; Murdock, Miller, & Kohlhardt, 2004; Newstead et al., 1996; Rettinger, Jordan, & Peschiera, 2004; Stephens & Roeser, 2003). It has been concluded that students who are focused on mastery are less likely to cheat than those who are focused on relative standing and the goal of learning as grades, as they may be more likely to cheat as a function of justification (e.g., Anderman, 2006; Anderman & Midgley, 2004; McCabe, Treviño, & Butterfield, 2001a; 2001b).

### *Social Cognition*

With a social-cognitive approach to motivation and academic cheating, it has been suggested that many different types of social perceptions are likely to develop the environmental rules that shape the normative behavior of cheating. Hartshorne and May (1928) defined acts of deception as “symptom[s] of social friction” (p. 3). More recent researchers (e.g., McCabe & Treviño, 1993; Michaels & Miethe, 1989) have followed principles of social learning theory (Bandura, 1986) to propose that cheating behaviors can be learned vicariously through influential sources (e.g., peers and media). Evidence

has shown that when cheating is perceived to be a social norm, there is a greater likelihood for students to cheat (McCabe & Treviño, 1993). Moreover, the propensity to cheat is positively reinforced if a student recognizes others' approval and consent (Rosenhan, Moore, & Underwood, 1976), so it can be asserted that the prevalence of cheating can increase rapidly.

### *Academic Interest*

Student levels of personal and situational interest appear to make significant influences on student engagement and learning (e.g., Bergin, 1999; Hidi, 1995; Schraw, Flowerday, & Lehman, 2001; Schraw & Lehman, 2001; Schraw, Olafson, Kuch, T. Lehman, S. Lehman, & McCrudden, 2006). Moreover, tasks that are not stimulating or are perceived to be irrelevant are associated with increased levels of academic cheating (Szabo & Underwood, 2004; Whitley, 1998), and Schraw et al. (2006) recently reported that personal and situational interest is inversely related to cheating. In a similar vein, students who are under high levels of pressure (high performance-oriented goals) and are under-engaged (low mastery goals) are most likely to cheat (Stephens & Gehlbach, 2006).

### Theoretical Framework for the Present Study

Based on this review of literature, evidence has supported that one's proximal and distal variables interact to influence behavior, such as cheating. The primary objective of this study is to examine these interactions with respect to academic cheating among college students. Research in the area of academic cheating has been exceptionally

challenging simply because a clear conceptual paradigm is lacking (e.g., Murdock & Anderman, 2006) and, in a similar vein, the majority of existing research has focused on the identification of descriptive variables which show—rather than explain—the cheating phenomenon. The following sections will discuss the theoretical framework of the study.

### *Approach-Avoidance Motives*

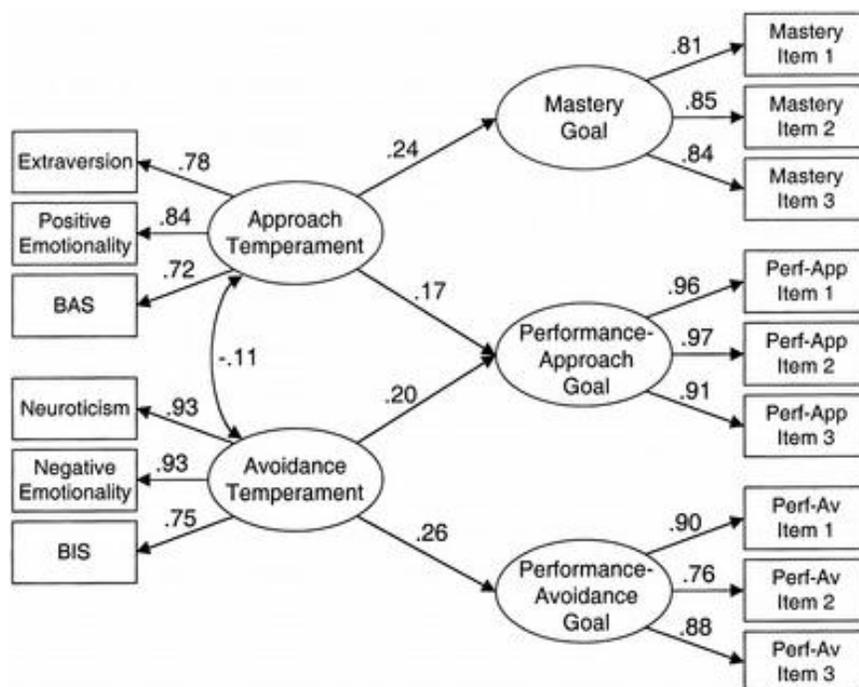
The hedonic view of approach-avoidance behavior has been discussed for millennia, largely because human beings have an inherent curiosity to evaluate positive and negative stimuli in order to adapt successfully (e.g., Bargh, 1997; Elliot, 2006; Tooby & Cosmides, 1990). As previously discussed, deviant strategies were developed by early man to create an advantage in “flight-or-flight” competition. Accordingly, the evaluation of a specific situation will elicit one of two automatic motivational responses: (1) approach (or appetitive) behavior, in which a person is energized toward positive stimuli and, in a Darwinian sense, to actively cope with a particular threat by facing it head on, or (2) avoidance behavior, in which a person is energized away from negative stimuli so as to passively cope with an encountered threat (Gray, 1970). Higgins (1997) asserted that the approach-avoidance principle is a foundational underpinning of psychology, and appear to guide the development of cognitive and affective motivation. Therefore, this perspective is relevant to the study of academic cheating.

Elliot and Thrash (2002) recently grouped proximal variables which are classically represented by approach-avoidance constructs (e.g., dispositional traits, affect, and motivational systems). By recognizing similar forms of valence across these constructs, a structural model was designed to classify two groups: (1) *approach*

*temperament*, a concept that is representative of Big Five trait Extraversion (McCrae & Costa, 1987), positive affect (e.g., Tellegen, 1985; Watson & Clark, 1993), and the behavioral activation system, or BAS (Gray, 1970), and (2) *avoidance temperament*, a concept that is representative of Big Five trait Neuroticism (McCrae & Costa, 1987), negative affect (Tellegen, 1985; Watson & Clark, 1993), and the behavioral inhibition system, or BIS (Gray, 1970; see Figure 1).

Figure 1.

*Structural Equation Model of Approach-Avoidance Temperament*



Based on literature in the area of academic behavior, certain aspects of the approach-avoidance systems utilized by Elliot and Thrash (2002) emerge as excellent

interpretations for the cheating phenomenon. The following three sections will briefly describe the hypothesized links to academic cheating, as they relate to dispositional traits, affect and temperament, and motivational systems.

### *Individual Differences Variables*

*Dispositional traits.* Personality theorists use a factorial stance to behavioral tendencies in psycholexical terms, and traits have been defined as non-dichotomous and stable patterns that are expressed within the social world (Mischel, Shoda, & Smith, 2004). Early researchers of the trait tradition (e.g., Eysenck, 1967) affirmed that the two primary dimensions of personality should include extraversion (high levels of sociability) and neuroticism (high levels of emotional instability). Today, the popular Big Five trait taxonomy considers Extraversion and Neuroticism as major determinants of personality (Costa & McCrae, 1997; Goldberg, 1992; John, 1990; McCrae & Costa, 1987). These respective traits are commonly associated with approach-avoidant motivational tendencies, as they describe many of the functions and characteristics of valence (Elliot & Thrash, 2002).

Extraversion and neuroticism have been long-considered to be predictors of deviant behavior, as Hans Eysenck (1961) initially sought to bring together the fields of personality and abnormal behavior. Initial studies of academic cheating (e.g., Brownell, 1928), although methodologically flawed, did make the observation that students who scored high in neuroticism and high in extraversion were more often to report increased levels of cheating behavior. Across a span of more than 75 years, however, there has been inconsistent attention to traits (in general) as viable predictors of academic cheating, and

this phenomenon may be attributed to early studies that provided inconclusive evidence for strong correlations across the board (Cizek, 1999; Nathanson, Paulhus, & Williams, 2006).

*Affect and temperament.* Temperament is best defined as a person's reactivity and self-regulation, including domains such as affect (e.g., Rothbart & Bates, 2006).

Temperament and affect are interpreted as the experience of emotional feelings across various situations (Rothbart & Hyman, 2007; Tellegen, 1985; Tellegen, Lynkken, Bouchard, Wilcox, Segal, & Rich, 1988; Tellegen & Waller, 1997); in contrast, mood refers to the brief, episodic experience of emotions (e.g., Linnenbrink & Pintrich, 2002). Temperament and affect are biologically based (Rothbart & Bates, 2006), and individual differences appear to be a product of cognitive structures and socialized representations of emotion (Peterson & Park, 2007).

Affective properties can be represented by approach-avoidant modes: positive and negative affect. Models of temperament (Clark & Watson, 1999; Tellegen, 1985; Watson & Clark, 1984, 1993) have explained positive and negative affect by systems of valence, as activation of one system inhibits the other. From a young age, positive affect is an "approach" function, such as high levels of activity and perceptual sensitivity. Negative affect, in contrast, is an "avoidant" function, including qualities such as fear and anxiety (Rothbart & Hwang, 2006). Positive affect is classically linked to extraversion, whereas negative affect is associated with neuroticism (Depue & Collins, 1999; Tellegen, 1985; Tellegen & Waller, 1997).

Research in the study of academic cheating has provided little attention to the role of emotion. What has been evaluated has focused primarily on the student's contextual mood or anticipatory emotion (e.g., Sierra & Hyman, 2006), rather than the stable features of temperament and affect. Affect is associated with certain types of risky and deviant behavior; therefore, it may be applicable to cheating. For instance, risk-taking behavior associated with high levels of negative affect may be interpreted as a drastic attempt to increase one's opportunity for a highly positive outcome (e.g., high achievement or in-group affiliation) so as to counterbalance an aversive sensation (Baumeister & Scher, 1988; Cooper, Agocha, & Sheldon, 2000). Moreover, this kind of compensatory strategy among students with high negative affect is associated with goals that facilitate active coping in the face of undesirable characteristics (e.g., low skill, poor affiliation needs) and, among students with positive affect, risk-taking is viewed as a function of enhancement and preservation of reward-seeking motives (Cooper et al., 2000).

With respect to these contingencies, levels of affectivity appear to significantly influence student motivation and behavioral change. For example, those who strive to avoid punishment outcomes (i.e., those high in negative affect) are linked to achievement goal-directed concept *fear of failure* (e.g., Schultheiss & Brunstein, 2006). Fear of failure is a self-evaluative process in which a person focuses on the negative expectancies of achievement-related outcomes (Heckhausen, 1991) and, moreover, affiliation-related outcomes are even more highly aversive (Mascolo & Fischer, 1995). Research has shown that students with fear of failure report more sensations of shame upon perceived failure

experiences, largely due to the disappointment of goals (Lewis & Haviland-Jones, 2000), moral action (Tangney, 2002), and social behaviors (Smith, Webster, Parrott, & Eyre, 2002). Meyer and Turner (2006) also asserted that the experience of negative affect after failure is associated with reduced levels of effort, increased levels of work avoidance, and negative attitudes toward the task. Moreover, fear of failure can prevent a student from help-seeking behaviors (Butler, 1998; Butler & Neuman, 1995; Karabenick & Knapp, 1991; Ryan, Hicks, & Midgley, 1997; Ryan & Pintrich, 1997; Ryan, Pintrich, & Midgley, 2001), which not only prevents the learning mistakes that are essential to competence development (Dweck, 1999; Elliot, 1997), but may also create setbacks in learning. Negative affect, then, may be a sufficient predictor of academic cheating.

Research has shown that avoidance patterns and academic cheating are more common in classroom environments that are *oriented* toward negative affect (Patrick, Turner, Meyer, & Midgley, 2003). This suggests that the context has a great influence on the affective responses. Moreover, it has been contended that constructive emotional support is important for achievement and affiliation development (Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Skinner & Belmont, 1993; Wentzel, 1997). As a function of regulation, students with negative affect may be more willing to risk the consequences of academic cheating in order to cope with an immediate pressure, such as a self-perception of incompetence or social inadequacy. Evidence has shown that emotional states mediate the relationship between self-regulation and achievement-related goals (Turner, Thorpe, & Meyer, 1998) and, in a similar vein, an effort to prevent the aversive feelings of negative affect may prompt some students to develop cognitive

strategies of self-handicapping, a construct that has been highly predictive of academic cheating (Elliot & Thrash, 2004).

*Motivational Systems.* In addition to traits and temperament, approach-avoidance is strongly exhibited by biological predispositions. Neurological structures are linked to the physiological activation or inhibition of stimuli (e.g., Depue & Collins, 1999; Mischel et al., 2004), and are represented by two respective valence systems: (1) the behavioral approach system, or BAS (Fowles, 1980, 1987; Gray, 1987, 1992), and (2) the behavioral inhibition system, or BIS. The former is activated by anticipated reward (Ball & Zuckerman, 1990; Newman, 1987; Wallace & Newman, 1990), and therefore, rewarding outcomes energize approach goals, as found in extraversion and positive affect. In contrast, the latter system is activated by anticipated punishment and, consequently, goals that appear to be aversive are likely to prompt avoidance goals (e.g., Bartussek, Diedrich, Naumann, & Collet, 1993), as found in neuroticism and negative affect.

In application to academic cheating, early research has been conducted with respect to cheating, arousal theories of motivation, and physiological reactivity to stimuli, such as delay of gratification (as previously discussed). Moreover, one's optimal level of arousal (Hebb, 1955) may be predictive of cheating, as a traditional view indicates that people who possess chronically low levels of arousal are highly associated with risky behavior (Cooper et al., 2000; Fowles, 1980; Zuckermen, 1983) as a possible effort to neutralize one's level of under-stimulation (which is similar to the neutralization of negative affect).

*Linking Individual Differences and Regulatory Focus*

A valence-based concept not yet addressed by Elliot and Thrash (2002) is regulatory focus. Regulatory-focus theory (Higgins, 1997, 1998) explains the way that people engage in self-regulation, which is defined as “the process of bringing oneself into alignment with one’s standards and goals” (Brockner, Higgins, & Low, 2004, p. 203). According to the theory, self-regulation prompts certain strategies which guide a person toward attainment of some desired outcome, using either a promotion focus or a prevention focus (depending on the goal). A promotion focus is associated with one’s goals that pertain to nurturance, growth, and aspiration and therefore motivates behavior to become closer to his or her ideal self-concept. Meanwhile, a prevention focus is associated with goals that concern security and protection, which is viewed as the alignment towards the “ought” self. Similar to the proximal variables considered in the approach-avoidance systems, a promotion focus concentrates on reward-seeking outcomes, whereas a prevention focus concentrates on perceived punishment (e.g., Brockner et al., 2004; Higgins, 1997).

There are no known studies that have explored the role of regulatory focus on academic cheating; however, there are several reasons how these variables might be associated. First, regulatory focus theory takes into consideration the factors of social cognition. Social cognition is of prime importance because it recognizes that one’s psychological thoughts have critical adaptive value (e.g., nurturance and security) and, furthermore, learning through the social environment influences (1) one’s formation of self, (2) others’ normative patterns, and (3) the shared reality of mutual associations of

these two spheres (Bandura, 1986; Bowlby, 1969; Hardin & Higgins, 1996; Higgins, 2000; Levine, Resnick, & Higgins, 1993). Although traits, affect, and motivational systems represent broad predispositions, regulatory focus guides these variables within a social ecology, one that shapes the selection of approach or avoidance goals (Cantor & Mischel, 1977, 1979; Higgins & Kruglanski, 1996; Kunda, 1999; Mischel et al., 2004). Higgins (2000) asserted that social cognition refers to “learning about what matters in the social world” (p. 6), a principle that cannot be discounted when evaluating student goals. Moreover, existing research in the area of academic cheating has not fully addressed social-cognitive influences on student behavior.

Second, nurturance and security (i.e., promotion and prevention foci) may be strongly associated with academic motives. Bearing in mind the typical college student’s life, his or her top priorities are likely to involve achievement-related issues (e.g., education, career development) and affiliation-related issues (e.g., building one’s sense of autonomy, attaining a cohesive social group). Balance of these responsibilities at this developmental stage may be a struggle (Fries, Schmid, Dietz, & Hofer, 2005). For example, a student might value the long-term goals of academic achievement and career success; however, his or her ability to delay gratification may influence one’s value salience on affiliation development (to attend a party) instead of one’s achievement development (studying for the next morning’s test). In terms of regulatory focus, cheating may be viewed as a protection focus so that the student can adapt successfully within the perceived responsibilities of short-term social goals and long-term academic goals by reducing end-state discrepancies.

Third, regulatory focus is theoretically linked to expectancy-value theory, and may therefore strengthen the measurement of cheating motives. Expectancy-value theory (Eccles & Wigfield, 2002; Eccles et al., 1983) proposes that the positive or negative aspects of a certain task will affect one's value of the task and expectancies of failure or success. Moreover, these variables influence one's behavioral strategy, choice, and goal commitment (Eccles, 1987, 2005; Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Elliot, 2005; Feather, 1982; Higgins, 1997; Meece, Wigfield, & Eccles, 1990; Schunk & Pajares, 2005; Wigfield & Eccles, 1992). Based on literature by Higgins and his colleagues (Higgins, 1997; Shah, Higgins, & Friedman, 1998), a promotion focus would motivate a student to optimize his or her value of the task and expectancies of success by focusing on academic goals with high utility (e.g., a high score on an assignment). Likewise, a prevention focus would motivate a student to perceive his or her value of the task as *necessary* and, regardless the outcome expectancies, the student may take any means to attain that goal. The relationships of expectancy, value, and regulatory focus are applicable to academic cheating in that one's perception of a task as necessary (for example, to maintain a minimum grade point average in order to keep one's scholarship or perform well on a final exam in order to pass a course) may motivate the student to take any means to attain a more salient achievement goal, which may even include strategies that are typically against his or her moral and ethical values.

Lastly, regulatory focus may be linked to academic cheating by its valence-based properties. For example, Higgins (1997) has asserted that regulatory focus is likely to influence one's sensations of pleasure and pain; moreover, these experience shape

affective patterns in the future. Previous studies have supported the claim that high levels of anxiety and depression are associated with “ought” self rather than “ideal” self discrepancies (Higgins, Bond, Klein, & Strauman, 1986; Higgins, Shah, & Friedman, 1997; Scott & O’Hara, 1993; Strauman, 1989, 1990; Strauman & Higgins, 1987, 1988). Affective learning influences the way a person will perceive the social world and thus, shape his or her future goals in a certain way (Higgins, Friedman, Harlow, Chen-Idson, Ayduk, & Taylor, 2001; Shah & Higgins, 1997). It may be beneficial to examine the patterns of proximal variables in order to evaluate the motives and strategies of academic cheating.

#### *Linking Regulatory Focus and Achievement Goals*

Goals are cognitive representations of a future object that a person is committed to approach or avoid (Elliot & Fryer, 2007). Goals factor into an approach-avoidance model because they function as self-regulating systems (Elliot, 2006). In a similar vein, achievement goals are patterns that concern success, failure, and other interpretations pertaining to desirable end-states in an achievement-related situation (Ames & Archer, 1987, 1988; Elliot, 2005; Dweck & Leggett, 1988). A traditional model of achievement goals (Elliot, 1994; Elliot & Church, 1997; Elliot & Harackiewicz, 1996) includes three primary types of goals: (1) mastery goals, in which the student strives to develop optimal learning and competence, (2) performance-approach goals, in which the objective is to demonstrate normative competence, and (3) performance-avoidance goals, in which the objective is to avoid normative incompetence. Achievement goal theory is rooted in the

approach-avoidance system in that goals can be pursued in appetitive and avoidant forms (Dweck & Leggett, 1988; Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989).

Achievement goals are similar to regulatory focus in several ways. At the foundational level, a promotion focus is associated with nurturing, desirable end-states that are likely to be rewarding and successful; this is similar to the orientation of mastery and performance-approach achievement goals. What differs between mastery and performance-approach goals, however, is that a mastery orientation considers one's "ideal" self, whereas performance-approach goals are associated with one's "ought" self on a social comparative environment. In contrast, a prevention focus concerns perceived security, which is similar to the orientation of performance-avoidance and performance-avoidance goals. On an academic level, the concept of security may be equated with the important of a student's self-assurance and confidence; therefore, performance-oriented achievement goals both induce a certain degree of anxiety when comparing the self to others. What differs between these two goals, however, is that performance-approach goals seek the presence of positive feelings whereas performance-avoidance goals seek the absence of negative feelings. These are excellent valence-based constructs.

The link from regulatory focus to achievement goals is strengthened by high affective salience (Higgins et al., 1997) and, therefore, may support the impact of proximal variables on achievement goals. It has also been added that dispositional goal preferences are predictive of specific cognitive goal states (Elliot, 2005), so it may be that proximal variables shape regulatory focus, which strengthen goal choice and pursuit.

*Linking Achievement Goals and Academic Cheating*

According to Anderman (2006), achievement goal theory is beneficial to cheating because it includes the variables of the student and context. As previously discussed, there has been substantiating evidence that students who focus on mastery-oriented achievement goals are inversely related to cheating whereas students who focus on performance-oriented goals are positively related to cheating (Anderman et al., 1998; Anderman & Midgley, 2004; Dweck & Sorich, 1999; Hill & Kochendorfer, 1969; Jordan, 2001; Murdock et al., 2001, 2004; Rettinger et al., 2004; Stephens & Roeser, 2003). Moreover, the perceptions of students' goals are also predictive of academic cheating (e.g., Anderman, 2006; McCabe et al., 1999; 2001a), which suggests that the social-cognitive aspects of cheating behavior is particularly important to consider.

The path from proximal variables (i.e., traits, affect, and motivational systems) to achievement goals was previously examined by Elliot and Thrash (2002), who reported that a student predisposed to an approach temperament is more likely to demonstrate a mastery or performance-approach goal orientation. This provides evidence that positive affective salience and a strong appetitive reaction to stimuli may facilitate active efforts to maintain positive sensations of past successes (mastery) or to seek positive rewards during competitive challenge in which the person perceives success to be a likely outcome (performance-approach). In contrast, a student who has an avoidance temperament is more likely to exhibit performance-approach and performance-avoidance goals. This relationship exists largely because fear of failure is positively related with

performance-oriented goals (Elliot & McGregor, 1999), and potentially inhibits the adoption of mastery goals (Elliot, 1999).

In sum, proximal variables are fundamental to the understanding of cheating behavior, as regulatory focus and achievement goals are impacted by one's unique responses to anticipated stimuli that are associated with reward or punishment. Nevertheless, the study of motivational variables is a challenging feat. Goal-directed behavior is directed by the person and the context, so a valence-based method may gain an understanding of the student motives of cheating. Overall, it has been asserted that proximal variables of a student will influence the regulatory focus in which he or she will follow (Higgins, 1998; 2005; Lockwood, Jordan, & Kunda, 2002; Sullivan, Worth, Baldwin, & Rothbart, 2006) as well as the types of achievement goals that will be pursued (Elliot & Sheldon, 1997; Elliot & Thrash, 2002). As maintained by Anderman (2006), the phenomenon of academic cheating involves personal variables, situational variables, and the interactions that exist between the two. Thus, by pairing the features of approach-avoidance motivation, it is not only possible, but *critical* to gain an accurate understanding of the cheating phenomenon in higher education.

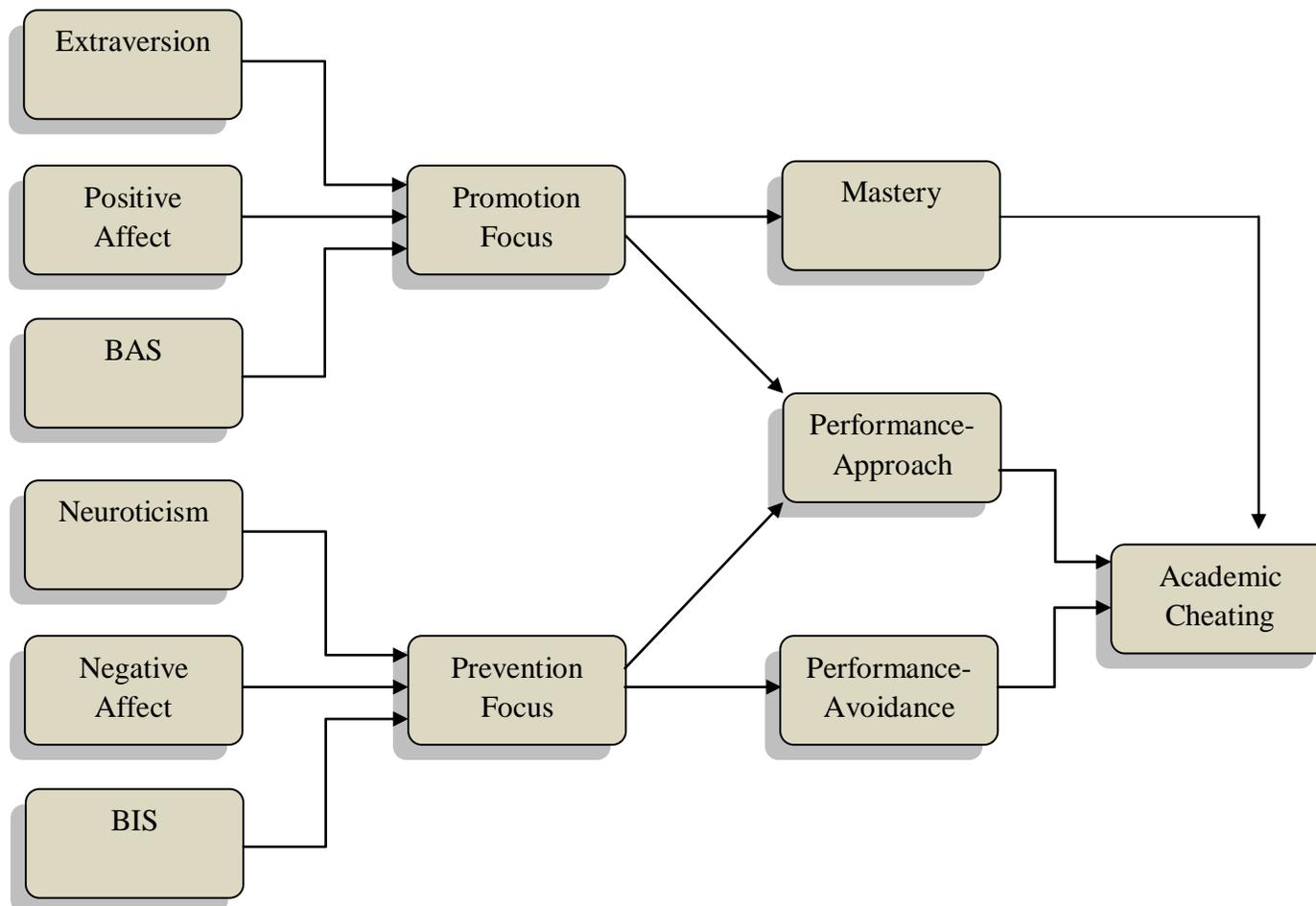
The following chapter proposes a model that combines individual differences, regulatory focus, and achievement goals in a comprehensive way that explains cheating from an interactionistic, valence-based perspective.

### **CHAPTER 3:**

### **METHODOLOGY**

The primary objective of this study was to more closely examine the interactive processes that exist between proximal (student) and distal (contextual) variables with respect to academic cheating among college students. The main hypotheses for this study investigated which, if any, personal characteristics might be reliable predictors of regulatory strategies, achievement goals, and college cheating (see Figure 2 to view to hypothesized model for this study).

Figure 2.

*Hypothesized Academic Cheating Path Model*

Secondary objectives of the study focused on the cheating phenomenon in general, by assessing specific types of academic cheating and its prevalence over time, students' beliefs about cheating, and other correlates that are relevant to the area of academic integrity. This chapter will describe the methods used to obtain participant data for this study.

### Recruitment Process

The recruitment process took place at a large, research-intensive university in the southwestern United States. Recruitment for this study included one primary, one secondary, and one unplanned approach. Upon approval of the University of Arizona's Institutional Review Board, efforts for study recruitment were implemented.

The primary strategy for participant recruitment involved the institution's Office of the Registrar research policy in which current university student emails are accessible. In collaboration with university staff, a bulk email system was established to recruit college student participants. The purpose for this approach was twofold: (a) to obtain a large sample of college students, and (b) to achieve a representative sample of the university, as past cheating research has included sampling biases. Using staff as a recruitment mediator, the principal investigator did not have access to specific, student email addresses; all recruited students, however, were able to directly contact the principal investigator with any questions about the research study. Study recruitment totaled 4,000 students using this bulk-email system in two waves. The first recruitment email was sent in February 2008. This study invitation included 2,000 student emails,

based on the following parameters: (a) only full-time undergraduate and graduate students, (b) an oversampling of undergraduate students of 1,500 students and 500 graduate students, (c) excluding of those who were currently taking Pass/Fail (not graded) courses, distance-learning courses, and (d) excluding students from the colleges of law and medicine. The study recruitment email was then sent to another series of students in March 2008. This study invitation included an additional 2,000 student emails, based on parameters that were similar to the original recruitment email. These parameters included: (a) only full-time undergraduate and graduate students, (b) an oversampling of undergraduate students of 1,500 students and 500 graduate students, (c) an oversampling of male students of 1,000 students, (d) excluding of those who were currently taking Pass/Fail (not graded) courses, correspondence courses, distance-learning courses, and (e) excluding students from the colleges of law and medicine.

The secondary strategy for participant recruitment involved an online posting from the institution's events calendar in which a Call for Participants listing was advertised. This posting was available from February 1<sup>st</sup> to March 30<sup>th</sup>, 2008. This approach did not allow for soliciting participants by demography, and explains for very low participation of students of certain university colleges (those who were not directly targeted for recruitment using the bulk-email system, such as Medicine and Law students).

A third, unplanned type of recruitment occurred. The university's student newspaper caught attention of the study, and the journalism staff advertised the study. This article was printed on February 4<sup>th</sup>, 2008.

In total, 413 total participants were recorded on the online study's frequency response, [www.surveymonkey.com](http://www.surveymonkey.com). This reflected a 10.33 percent response-rate of the direct bulk emails. Of those 413 participants, 15 participants denied participation (3.6 percent) and 87 participant cases (21.1 percent) were removed from the final data set due to highly incomplete results. As a result, the study included a total sample of 311 college students.

### Participants

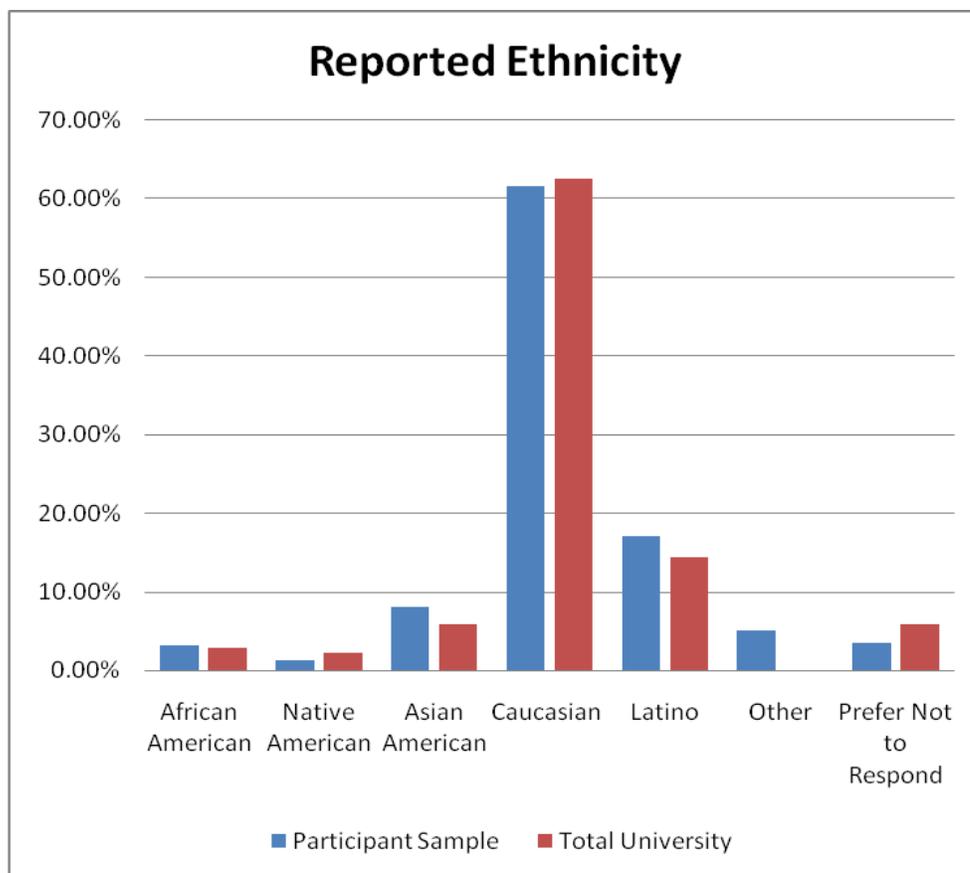
The study included a total sample of 311 participants. All participants were college-level students currently enrolled at a large, research-intensive university in the southwestern United States. Recruitment strategies for this study were designed and monitored so that the participant sample would be highly representative of the institution's demography. Of all the demographic variables examined, gender was the most challenging factor to obtain a representative sample. The total participant sample included: 41.5% male ( $n = 129$ ) and 58.5% female ( $n = 182$ ), whereas the university's 2006-07 student report yielded a somewhat different ratio, with 47.4% and 52.6%, respectively. This reflects a common trend involving cheating studies and student gender: females appear to be more willing to participate than males.

The remaining demographic variables measured for sample representativeness were highly successful. For example, ethnic background of the sample was highly representative of the institution, including African-Americans (3.2%), Native-Americans (1.3%), Asian-Americans (8.0%), Caucasians (61.7%), Latinos, (17.2%), and Other

(5.1%). Eleven students (3.5%) did not report their ethnicity. The school's total population for the 2006-07 academic year reported ethnic background as the following: African-American (2.8%), Native-American (2.2%), Asian-American (5.8%),Caucasian (62.6%), Latinos (14.5%), and unknown (5.9%). See Figure 3 for a graphic description of the sample and population ethnic background.

Figure 3.

*Study Participants' Reported Ethnicity (N = 311)*

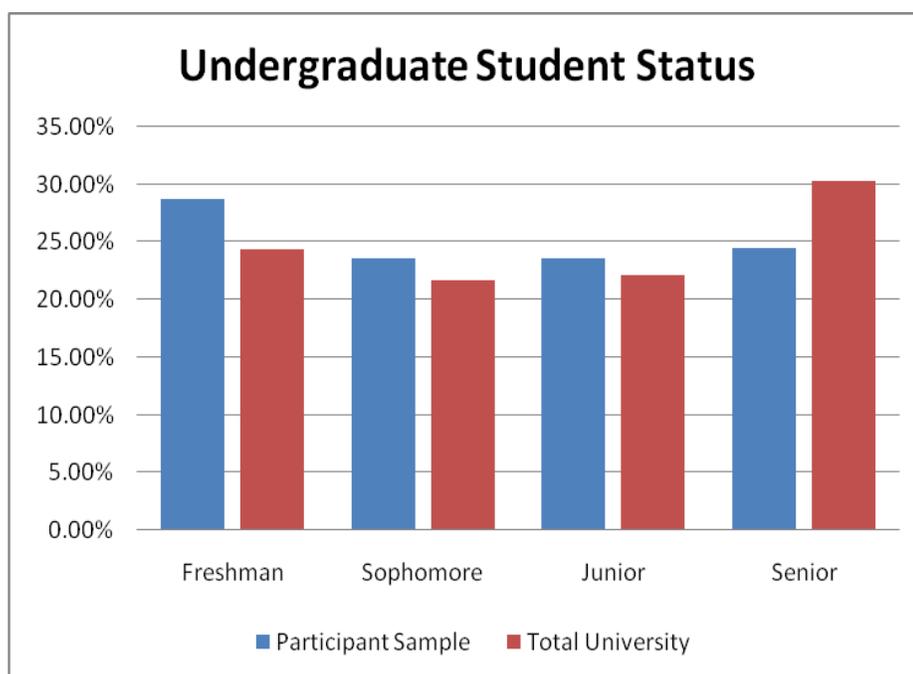


Of the sample, student classification was 92.0% domestic (U.S. citizenship), 6.4% international, and 1.6% unknown. The population for the university was, for the 2006-07 academic year: 93.7% domestic and 6.2% international students.

For the study, undergraduate students were intentionally oversampled, following the assumption that graduate students would be less likely to cheat. The sample included two-hundred and twelve undergraduates (68.2%) and ninety-seven graduates (31.2%). Two students (0.6%) failed to report their student status. Of the undergraduates, students were freshmen (28.8%), sophomore (23.6%), junior (23.6%), and senior (24.5%). See Figure 4 for a descriptive graph of undergraduate students' academic year.

Figure 4.

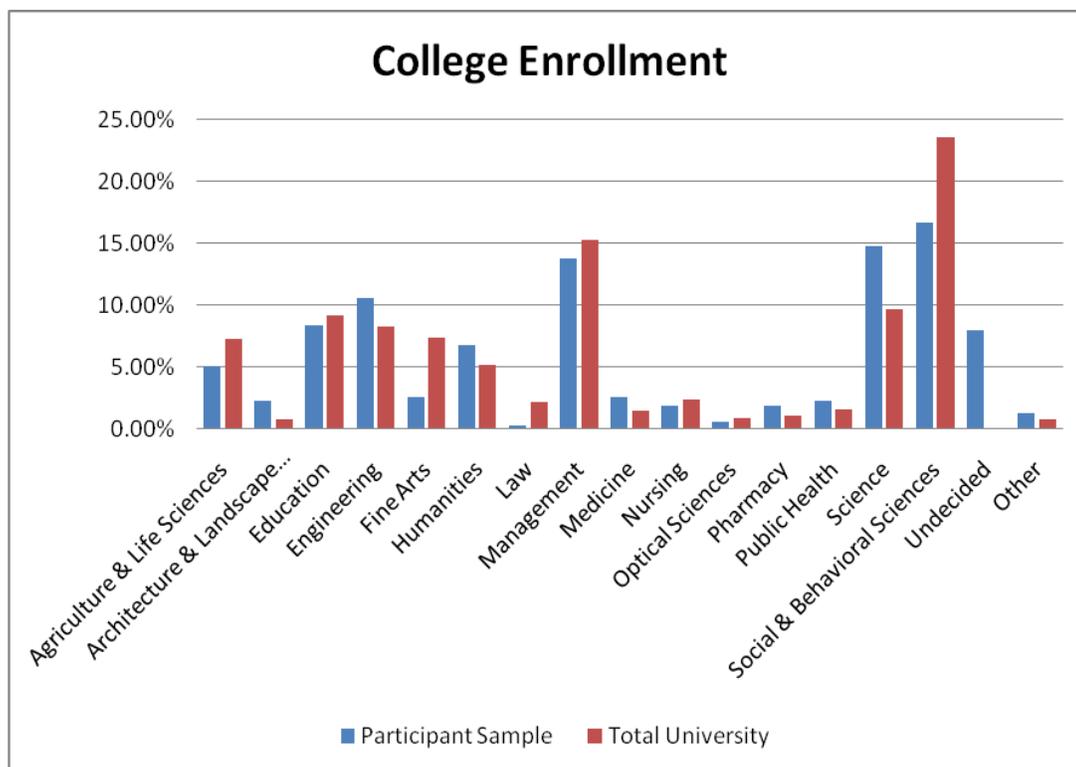
*Undergraduate Student Status (N=311)*



Undergraduate and graduate student participants also reported their currently declared college/major, which included the following: Agriculture and Life Sciences (5.1%), Architecture (2.3%), Education (8.4%), Engineering (10.6%), Fine Arts (2.6%), Humanities (6.8%), Law (0.3%), Management (13.8%), Medicine (2.6%), Nursing (1.9%), Optical Sciences (0.6%), Pharmacy (1.9%), Public Health (2.3%), Science (14.8%), Social & Behavioral Sciences (16.7%), Undecided (8.0%), and Other (1.3%). See Figure 5 for a graph comparing the present sample and 2006-07 data for the academic institution.

Figure 5.

*Participants' Reported Enrollment across University Colleges (N = 311)*



Student participants also reported their current participation in any university clubs and activities. Of the total sample, students reported active membership in the following areas: 19.6% academic or honorary clubs, 8.7% athletics, 16.1% departmental clubs, 6.8% international or cultural clubs, 12.2% leadership clubs, 5.1% political, 12.9% religious, 8.7% service organizations, 6.1% Greek organization, and 13.5% special interest.

### Procedure

Upon receiving the recruitment email, participants were given access to the survey's web address. The online survey allowed each participant to read and agree (or disagree) with a disclosure form. Students were asked to complete a comprehensive battery of questionnaires, including: a cheating questionnaire, the Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), the Positive and Negative Affect Schedule-Expanded Form (PANAS-X; Watson et al., 1988, Watson & Clark, 1994), the BIS/BAS scales (Carver & White, 1994), Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001), and Achievement Goals Questionnaire (AGQ; Elliot & Church, 1997).

### Measures

#### *Academic Cheating Behavior*

In order to assess cheating, a questionnaire was constructed to measure students' affective, cognitive, social, and behavioral cheating experiences. This instrument includes three sub-sections, including: (a) past history of cheating, or PHC, (b) current beliefs and

opinions about cheating, or CBC, and (c) a cheating hypothetical vignette, or VIG. The first section, PHC, was designed to measure a student's past history of cheating over three points in his or her academic life: (a) middle/junior-high school, (b) high school, and (c) college. PHC includes 42 items, with 14 items for each of the school levels. These 14 items were grouped by school level, and ask participants to mark which types of cheating he or she has participated in (e.g., 'In high school, did you ever share answers with another student during a test/exam?' and 'In college, have you ever included sections on a paper without acknowledging the author?'). Students responded to a binary option, indicating that they should mark to reflect 'Yes,' and should leave blank items to reflect 'No.' Some of these items were modified from a cheating survey instrument designed by Blackburn (1996), and the main instrument changes PHC items was to avoid usage of the word *cheating* in measuring students' past history, as it may elicit participants' need to respond with a certain degree of social desirability.

Current beliefs and opinions about cheating (CBC) is a section designed to measure a student's attitudes about cheating as a college student. Participants responded to 9 items. Eight of these items use a 5-point Likert-style scale, ranging from 1 (strongly agree) to 5 (strongly disagree) to reflect students' attitudes such as 'Cheating might be justified to pass a course' and 'Cheating is common among college students.' Some of these items were modified from a study conducted by Jordan (2001). The last item on the BAC asked respondents to answer the question 'What do you think prevents a person from cheating?' Three item responses to this question were close-ended: (a) fear of getting caught, (b) guilt, and (c) unethical/unfair.

One hypothetical cheating vignette (HCV) was also designed to measure students' cheating likelihood in a realistic classroom situation. Vignettes have been suggested to be an effective means to measure cheating tendencies (e.g., Rettinger et al., 2004). For the HCV, participants were asked to consider him or herself to be the actor in the scenario, and then make an accurate judgment of what he or she might do when facing a moral dilemma. The vignette reads as follows:

*Grades that are “curved” require that YOUR score will depend on OTHERS’ performance. Imagine that you are in a large class at the university in which all graded work will be “curved.” Your midterm will be next week, but you are concerned that if you do not score as high as other students, then your overall grade will be lowered drastically. The day before the exam, you overhear several students planning to cheat for the midterm.*

Respondents were asked to indicate how likely he or she might react to this situation. The HCV included 6 items, each on a 10-point scale (ranging from 0% to 100%). Participants indicated how likely he or she would engage in each hypothetical response (e.g., ‘I would tell the professor’ and ‘I would feel frustrated or angry, but would not do or say anything’).

#### *Personality*

Personality traits were measured by the Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003). This brief instrument is aimed to estimate one's personality trait levels of the Big Five model, including Extraversion, Neuroticism, Openness to Experience, Agreeableness, and Conscientiousness. This tool was designed

for a short (one minute), valid assessment. Most personality inventories, such as the NEO-PI-R, NEO-FFI, and BFI, include 40 or more items. The TIPI survey requested participants to rate how much certain traits are representative of their general behavior (e.g., enthusiastic, critical, anxious) on a 7-point Likert-style scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The TIPI has been shown to be somewhat reliable, with estimated alpha ( $\alpha$ ) coefficients ranging from .68 for Extraversion, .40 for Agreeableness, .50 for Conscientiousness, .73 for Neuroticism, and .45 for Openness to Experience.

#### *Affect and Temperament*

Positive and negative affect were measured by the Positive and Negative Affect Schedule-Expanded Form (PANAS-X; Watson et al., 1988, Watson & Clark, 1994), a self-report questionnaire that assesses both one's higher-order affective state, and the lower-order, explicit mood. The study included only the valence-based items (10 items for positive affect and 10 items for negative affect) to narrow the focus on the particular constructs of interest, as well as maintain a level of brevity during testing. The selections of the PANAS-X uses a five-point Likert-style scale ranging from 1 (very slightly or not at all) to 5 (extremely). For this study, the modified instrument consisted of 20 adjectives (e.g., interested, attentive, distressed) in which participants were requested to rate their affective experience of each emotion in general. The PANAS-X instrument has reported alpha ( $\alpha$ ) coefficients ranging from .83 to .90 for positive affect and .85 to .93 for negative affect.

### *Behavioral Activation and Inhibition Systems*

For this study, Gray's (1981) behavioral activation system (BAS) and behavioral inhibition system (BIS) were measured using Carver and White's (1994) BIS/BAS scales, an instrument that assesses a participant's physiological sensitivity using a self-report survey. The BIS/BAS scales include 24 items, and the study requested participants to either agree or disagree with a statement that best represents their worldviews (e.g., 'When I'm doing well at something, I love to keep at it'). The instrument uses a 4-point Likert-style scale that ranges from 1 (very true for me) to 4 (very false for me). Cronbach's alpha ( $\alpha$ ) coefficients are estimated to be .74 for the BIS, and range from .66 to .76 among three BAS subscales (including Reward Responsiveness, Drive, and Fun-Seeking; however, the subscales were not interpreted separately for this study). Jorm, Christensen, Henderson, Jacomb, Korten, and Rodgers (1999) have loaded together the subscales of BAS onto a single factor, and determined an estimated internal consistency value of .83.

### *Regulatory Focus*

Regulatory focus is a valence-based construct, including two systems: promotion and prevention. For this study, it was measured using the Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001), a self-report questionnaire that is used to assess students' subjective experiences with success and failure in promotion and prevention self-regulation. The RFQ includes 11 items in which participants were asked to respond to specific events during their lives (e.g., 'How often have you accomplished things that got you "psyched" to work even harder?' and 'I feel like I have made progress toward being

successful in my life') by selecting the most appropriate answer that reflects their subjective life experiences on a 5-point Likert-style scale that ranges from 1 (never or seldom/certainly false) to 5 (very often/certainly true). For this survey, regulatory focus was measured at three different points in a student's academic life: (a) middle/junior-high school, (b) high school, and (c) college. This was done to gain a better perspective of each student's attitudes when comparing frequencies of student cheating. Cronbach's alpha ( $\alpha$ ) coefficient values have been estimated to be .73 for the Promotion scale and .80 for the Prevention scale.

#### *Achievement Goal Orientation*

The trichotomous forms of student achievement goals were measured by the Achievement Goals Questionnaire (AGQ; Elliot & Church, 1997), a self-report questionnaire that categorizes a student's type of achievement orientations: (a) mastery, (b) performance-approach, and (c) performance-avoidance. The AGQ includes 18 items, with 6 items addressing each respective achievement goal style. Measurement procedure of the AGQ requires that participants first consider a classroom situation in order to respond to their goal orientations. AGQ uses a 7-point Likert-style form, ranging from 1 (not at all true of me) to 7 (very true of me). Items include questions such as 'It is important for me to do well compared to others' (performance approach goals), 'My fear of performing poorly in this class is often what motivates me' (performance avoidance goals), and 'I want to learn as much as possible from this class' (mastery goals). Cronbach's alpha ( $\alpha$ ) coefficients for each goal measure have been found to be at least .77 or greater (Elliot, 1999; Elliot & Church, 1997). For this study, participants were

requested to consider a course in which he or she is currently enrolled, as all participants were active students.

In addition to the AGQ items, additional preface items were constructed to measure objective and subjective information about the course in which a student would respond to. Subjective items assessed perceived difficulty of the course, ranging from 1 (very easy) to 5 (very difficult), interest in the course subject matter, ranging from 1 (very interested) to 5 (not at all interested), and perceived competence of the instructor's teaching abilities, ranging from 1 (very good) to 5 (very poor).

### Analyses

For the present study, a total of eight research hypotheses were developed. Each will be subsequently described in-depth; however, they are first summarized here:

1. "Approach" personal variables (i.e., extraversion, positive affect, and BAS) will each be a significant predictor of promotion regulatory focus.
2. "Avoidant" personal variables (i.e., neuroticism, negative affect, and BIS) will each be a significant predictor of prevention regulatory focus.
3. Promotion regulatory focus will be a positive predictor of mastery and performance-approach achievement goals.
4. Prevention regulatory focus will be a positive predictor of performance - approach and -avoidance achievement goals.

5. Performance -approach and -avoidance achievement goals will be positive predictors of cheating behavior. Mastery achievement goals will be a negative predictor of cheating behavior.
6. Regulatory focus is expected to act as a mediating variable between student variables and achievement goals.
7. Achievement goals will act as a mediating variable between regulatory focus and cheating behavior.
- 8: Academic cheating will be predicted by student achievement goals, regulatory focus, and personal variables.

*Hypothesis 1: “Approach” personal variables (i.e., extraversion, positive affect, and BAS) will each be a significant predictor for promotion regulatory focus.* The term *approach temperament* was originally used by Elliot and Thrash (2002), who tested a valence-based model to link approach dispositional factors to mastery and performance-approach goals. Although there are no current studies measuring the relationship between approach temperament and regulatory focus, existing literature in the area of personality psychology does suggest that these may be related by a common link featuring reward-seeking tendencies (e.g., Brockner et al., 2004; Higgins, 1997).

Hypothesis 1 was tested using simple linear regression using the Statistical Package for the Social Sciences (SPSS). For this hypothesis, the dependent variable was promotion regulatory focus, and the independent variables of approach temperament—extraversion, positive affect, and BAS—were each measured separately for their

respective relationships with the dependent variable. In addition, promotion regulatory focus had been tested for different points during a student's academic career (junior-high, high and college) and, considering the enduring nature of the three independent variables, simple linear regression tests provided additional facts concerning these connections.

*Hypothesis 2: "Avoidant" personal variables (i.e., neuroticism, negative affect, and BIS) will each be a significant predictor for prevention regulatory focus.* Similar to the foundational underpinnings and strategic methods of Hypothesis 1, Hypothesis 2 considers avoidance temperament (Elliot & Thrash, 2002). Again, although there are no known studies that directly link avoidance temperament and prevention regulatory focus, literature suggests that a significant relationship between these variables might be plausible. This is based on their related connections to perceived punishment (e.g., Brockner et al., 2004; Higgins, 1997).

Hypothesis 2 was tested by simple linear regression using SPSS. The dependent variable was prevention regulatory focus, and the independent variables of avoidant temperament—neuroticism, negative affect, and BIS—were each measured separately for their respective relationships with the dependent variable.

*Hypothesis 3: Promotion regulatory focus will be a positive predictor of mastery and performance-approach achievement goals.* Following goal achievement theory (e.g., Dweck & Leggett, 1988), Hypothesis 3 is theoretically rooted in valence-based systems in which achievement goals can be pursued by appetitive or avoidant means (e.g., Dweck & Leggett, 1988; Elliot & Dweck, 1988; Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989). Promotion regulatory focus is defined by nurturing, desirable end-states

that are rewarding, those which appear to be connected with mastery and performance-approach achievement goals. Here, the critical difference between these two “approach” goals is that a promotion regulatory focus involves one’s “*ideal*” self (i.e., mastery), rather than one’s “*ought*” self (i.e., performance-approach) in a socially comparative environment (Higgins, 1997, 1998).

This hypothesis was tested by simple linear regression using SPSS. The dependent variables were achievement goal orientation (mastery and performance-approach, respectively), and the independent variable was promotion regulatory focus.

*Hypothesis 4: Prevention regulatory focus will be a positive predictor of performance -approach and -avoidance achievement goals.* Similar to Hypothesis 3, Hypothesis 4 follows an assumption that prevention regulatory focus is related with a student’s desire for security. Foundational qualities of prevention regulatory focus are theoretically related to performance-approach and performance-avoidance achievement goals, as the concept of security may be salient for one’s own protection of his or her confidence, ego, and/or self-esteem. Prevention regulatory focus, therefore, is associated with a certain degree of anxiety. As a result, Hypothesis 4 contends that this self-guarding strategy is linked to performance-oriented achievement goals; for example, if a student compares him or herself to other peers. The apparent difference between these two achievement goals is that a performance-approach orientation encourages the seeking of positive, reinforcing feelings; in contrast, a performance-avoidant orientation encourages the reduction of negative feelings.

Hypothesis 4 was tested by simple linear regression using SPSS. The dependent variable was achievement goal orientation (performance -approach and -avoidance, respectively), and the independent variable was prevention regulatory focus.

*Hypothesis 5: Performance -approach and -avoidance achievement goals will be positive predictors of cheating behavior. Mastery achievement goals will be a negative predictor of cheating behavior.* Research has provided substantiating evidence that students who focus on mastery-oriented achievement goals are less likely to cheat than those with performance-oriented goals (e.g., Anderman et al., 1998; Anderman & Midgley, 2004; Dweck & Sorich, 1999; Hill & Kochendorfer, 1969; Jordan, 2001; Murdock et al., 2001, 2004; Rettinger et al., 2004; Stephens & Roeser, 2003). Moreover, students' *perceptions* of their achievement goals are also predictive of academic cheating (e.g., Anderman, 2006; McCabe et al., 1999; 2001a), which implies that social cognitive aspects of cheating behavior are particularly important to consider.

Using SPSS, Hypothesis 5 was tested using several methods. In order to represent the diverse approaches to cheating behavior (as described in the Measures section), three dependent variables were separately measured: (1) past cheating history, or PHC, (2) current beliefs and opinions about cheating, or CBC, and (3) a cheating hypothetical vignette, or VIG. Independent variables included three types of achievement goal orientations. PHC and CBC were tested using linear regression, and VIG was tested using analyses of variance (ANOVA).

*Hypothesis 6: Regulatory focus is expected to act as a mediating variable between student variables and achievement goals.* Following the assumptions of the designed path

model, student variables are to be associated with regulatory focus, and regulatory focus is to be associated with achievement goals. Part of the support for this hypothesis derives from Elliot and Thrash's (2002) study linking approach-avoidant student variables and achievement goals. Hypothesis 6 contends that regulatory focus acts as a mediating variable between personal characteristics and achievement goals. Barron and Kenny (1986) stated that in order to determine that a variable has a mediating effect, three pre-conditions are required: (1) the predictor variable (personal characteristics) and the hypothesized mediator (regulatory focus) must be statistically significant; (2) the predictor variable and the dependent variable (achievement goals) must also be statistically significant; and (3) the dependent variable must be statistically significant when controlling for the predictor variable and hypothesized mediating variable.

*Hypothesis 7: Achievement goals will act as a mediating variable between regulatory focus and cheating behavior.* Following the assumptions of the designed path model, regulatory focus is to be associated with achievement goals, and achievement goals are to be associated with cheating behavior. Hypothesis 7 contends that regulatory focus acts as a mediating variable between personal characteristics and achievement goals. Similar to Hypothesis 6, it is stated that in order to determine that a variable has a mediating effect, three pre-conditions are required: (1) the predictor variable (regulatory focus) and the hypothesized mediator (achievement goals) must be statistically significant; (2) the predictor variable and the dependent variable (student cheating) must also be statistically significant; and (3) the dependent variable must be statistically

significant when controlling for the predictor variable and hypothesized mediating variable.

*Hypothesis 8: Academic cheating will be predicted by student achievement goals, regulatory focus, and personal variables.* Hypothesis 8 used EQS 6.1 (Bentler, 1995) to test the full hypothesized model as previously described. The maximum likelihood (ML) approach was measured, and goodness-of-fit tests were completed to evaluate the overall strength of the model. As previously discussed, Hypothesis 8 sought to determine which specific personal variables (approach or avoidant) would be more predictive of academic cheating through measures of regulatory focus and achievement goals.

## CHAPTER 4:

### RESULTS

This section will present the results for each of the eight hypotheses in this study. Table 3 provides Cronbach's alpha ( $\alpha$ ) coefficients for each of the instruments used in this study. With respect to the Cheating Hypothetical Vignette (VIG), an alpha of .18 was obtained, suggesting poor reliability indicators. This is likely to be a result of a small set of diverse items. It should be noted, therefore, that the VIG findings should be interpreted with great caution. In addition, Table 4 provides the correlations and descriptive statistics for the key variables in this study.

Table 3

*Cronbach's Alpha Coefficients for Instruments*

| Instrument                           | $\alpha$ |
|--------------------------------------|----------|
| Past History of Cheating (PHC)       | .91      |
| Current Beliefs about Cheating (CBC) | .50      |
| Cheating Hypothetical Vignette (VIG) | .18      |
| Affect                               | .80      |
| Motivational Systems                 | .55      |
| Regulatory Focus                     | .83      |
| Personality                          | .69      |
| Achievement Goals                    | .85      |

Table 4  
Correlations and Descriptive Statistics<sup>a, b</sup>

| Variables                         | M    | SD   | 1      | 2       | 3      | 4       | 5      | 6      | 7      | 8     | 9       | 10     | 11    | 12 |
|-----------------------------------|------|------|--------|---------|--------|---------|--------|--------|--------|-------|---------|--------|-------|----|
| 1. Extraversion                   | 4.32 | 1.30 | --     | --      | --     | --      | --     | --     | --     | --    | --      | --     | --    | -- |
| 2. Neuroticism                    | 3.26 | 1.07 | -.04   | --      | --     | --      | --     | --     | --     | --    | --      | --     | --    | -- |
| 3. Positive Affect                | 3.75 | .68  | .40*** | -.16**  | --     | --      | --     | --     | --     | --    | --      | --     | --    | -- |
| 4. Negative Affect                | 1.98 | .70  | -.15** | .57***  | -.15** | --      | --     | --     | --     | --    | --      | --     | --    | -- |
| 5. Behavioral Activation System   | 3.11 | .50  | .36*** | .02     | .54*** | -.06    | --     | --     | --     | --    | --      | --     | --    | -- |
| 6. Behavioral Inhibition System   | 2.93 | .57  | -.05   | .53***  | .04    | .34***  | .19**  | --     | --     | --    | --      | --     | --    | -- |
| 7. Promotion Regulatory Focus     | 3.44 | .32  | .03    | -.01    | .29*** | -.20*** | .13*   | .10    | --     | --    | --      | --     | --    | -- |
| 8. Prevention Regulatory Focus    | 3.86 | .82  | -.05   | -.25*** | .16**  | -.27*** | -.06   | .03    | .17**  | --    | --      | --     | --    | -- |
| 9. Mastery Goals                  | 5.58 | 1.27 | -.07   | -.09    | .33*** | -.16**  | .11    | -.01   | .22*** | .10   | --      | --     | --    | -- |
| 10. Performance-Approach Goals    | 4.46 | 1.61 | .04    | .14     | .18**  | .11*    | .28*** | .23*** | .02    | -.10  | .14*    | --     | --    | -- |
| 11. Performance-Avoidance Goals   | 4.34 | 1.63 | -.03   | .22**   | .02    | .29**   | .25*** | .35*** | -.19** | -.11* | -.20*** | .44*** | --    | -- |
| 12. History of Cheating (College) | .11  | .16  | .16**  | -.04    | .01    | .06     | .18**  | -.05   | -.04   | -.15* | -.19**  | .06    | .15** | -- |

<sup>a</sup>  $N = 311$

<sup>b</sup> \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Cheating and Student Demography

### *Gender*

Independent-samples t-tests were conducted to compare the aggregate cheating scores for males and females. As shown in Table 5, there were no significant differences in cheating scores for male and female students at any school level.

Table 5.

*Independent-samples t-tests (two-tailed) for Gender and Cheating across School Levels*

| School Level              | Gender |     |        |     |                            |
|---------------------------|--------|-----|--------|-----|----------------------------|
|                           | Male   |     | Female |     |                            |
|                           | M      | SD  | M      | SD  |                            |
| Middle/Junior-High School | 1.78   | .22 | 1.82   | .20 | $t(309) = -1.70$ $p = .11$ |
| High School               | 1.78   | .22 | 1.81   | .20 | $t(308) = -1.50$ $p = .06$ |
| College                   | 1.87   | .17 | 1.90   | .16 | $t(309) = -1.74$ $p = .11$ |

### *Ethnicity*

One-way between-groups analyses of variance (ANOVA) were conducted to explore the relationship between ethnicity and cheating. Ethnicity was divided into seven groups (Group 1: African-American, Group 2: American Indian/Alaskan Native, Group 3: Asian/Pacific Islander, Group 4: Caucasian/White, Group 5: Latino/a, Group 6: Other, Group 7: Prefer Not to Respond). Results showed that there were no statistically significant differences among the ethnicity groups and cheating at middle/junior-high school:  $F(6, 305) = 1.24$ ,  $p = .28$ , high-school:  $F(6, 303) = 1.47$ ,  $p = .19$ , or college:  $F(6, 304) = .76$ ,  $p = .60$ .

*Student Classification.* Independent-samples t-tests were conducted to compare aggregate cheating scores for domestic (U.S. citizen) and international students. Findings shown in Table 6 reflect no significant differences in cheating scores for domestic and international students at any school level.

Table 6.

*Independent-samples t-tests (two-tailed) for Student Classification and Cheating across School Levels*

| School Level              | Student Classification |     |               |     |                            |
|---------------------------|------------------------|-----|---------------|-----|----------------------------|
|                           | Domestic               |     | International |     |                            |
|                           | M                      | SD  | M             | SD  |                            |
| Middle/Junior-High School | 1.80                   | .21 | 1.81          | .16 | $t(305) = -.30$ $p = .11$  |
| High School               | 1.79                   | .21 | 1.85          | .14 | $t(304) = -1.19$ $p = .06$ |
| College                   | 1.89                   | .16 | 1.86          | .13 | $t(304) = .81$ $p = .63$   |

#### *Student Status*

Independent-samples t-tests were conducted to compare aggregate cheating scores for undergraduate and graduate college students. For middle/junior-high school and high-school levels, Levene's tests for equality of variances for were both non-significant ( $< .05$ ); therefore, equal variances for the undergraduate and graduate groups were not assumed. According to Table 7, there *were* significant differences in cheating scores for undergraduate and graduate students at the middle/junior-high school and high-school levels. These outcomes reflect that undergraduate students reported cheating *less* frequently than graduate students for these two school levels. There was no significant difference in cheating scores for undergraduate and graduate students at the college level.

Table 7.

*Independent-samples t-tests (two-tailed) for Student Status and Cheating across School Levels*

| School Level              | Student Status |     |          |     |                    |            |
|---------------------------|----------------|-----|----------|-----|--------------------|------------|
|                           | Undergraduate  |     | Graduate |     |                    |            |
|                           | M              | SD  | M        | SD  |                    |            |
| Middle/Junior-High School | 1.77           | .22 | 1.87     | .16 | $t(239) = -4.64^*$ | $p < .001$ |
| High School               | 1.76           | .22 | 1.87     | .16 | $t(254) = -5.07^*$ | $p < .001$ |
| College                   | 1.88           | .17 | 1.90     | .15 | $t(307) = -.89$    | $p = .28$  |

\* Equal variances not assumed

#### *Academic Year*

One-way between-groups analyses of variance (ANOVA) were conducted to explore the relationship between undergraduate students' academic year and cheating. Academic year was divided into four groups (Group 1: Freshman, Group 2: Sophomore, Group 3: Junior, Group 4: Senior). Results showed that there were no statistically significant differences among the academic years and cheating at middle/junior-high school:  $F(3, 212) = 1.17, p = .32$ , high-school:  $F(3, 209) = .63, p = .60$ , or college:  $F(3, 210) = 1.35, p = .26$ .

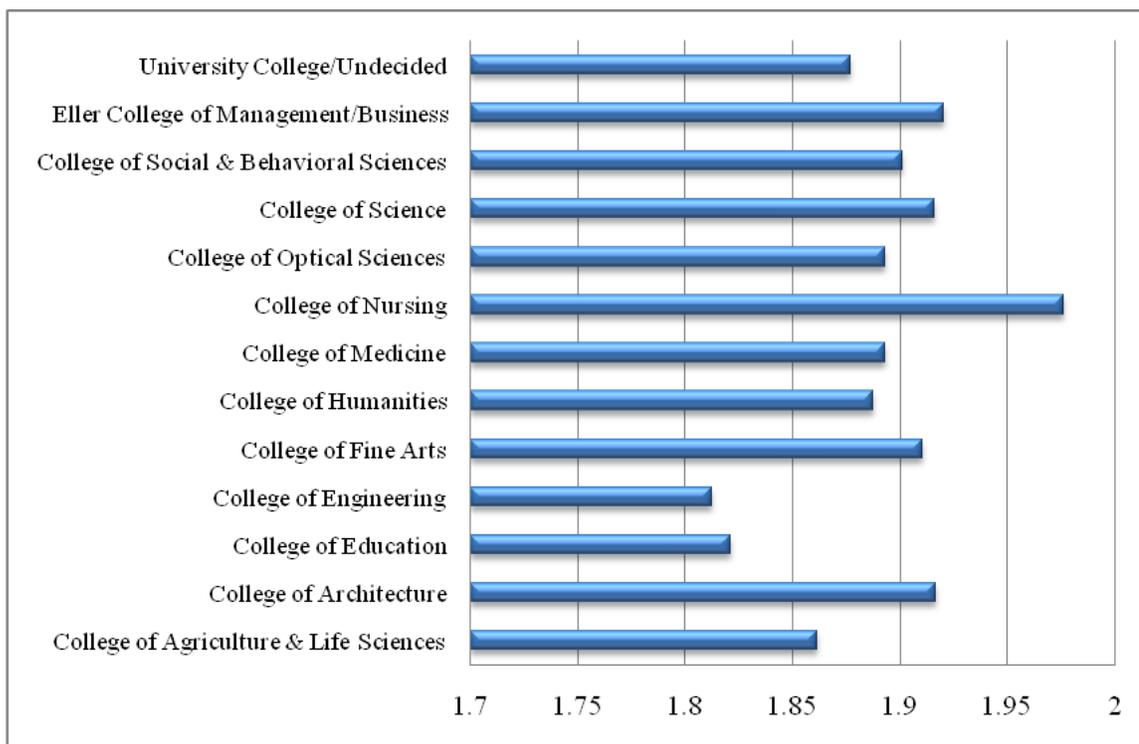
#### *Academic College*

One-way between-groups analyses of variance (ANOVA) were also conducted to explore the relationship between academic college and college cheating. Academic college was divided into thirteen groups (see Figure 6, for mean scores among the

groups). There were no statistically significant differences among academic college and college cheating:  $F(12, 276) = .093, p = .09$ .

Figure 6.

*Mean Scores of College Cheating for Academic Colleges*



*Organization/Club Membership*

Independent-samples t-tests were conducted to compare aggregate cheating scores for student membership and non-membership among college organizations. As shown in Table 8, there were no significant differences in cheating scores for organization members and non-members.

Table 8.

*Independent-samples t-tests (two-tailed) for College Organization Membership and College Cheating*

| College Organization   | Organization Membership |     |                |     |                        |           |
|------------------------|-------------------------|-----|----------------|-----|------------------------|-----------|
|                        | Membership              |     | Non-Membership |     |                        |           |
|                        | M                       | SD  | M              | SD  |                        |           |
| Academic/Honorary      | 1.89                    | .16 | 1.88           | .17 | $t(309) = .51$         | $p = .61$ |
| Athletics              | 1.89                    | .16 | 1.88           | .15 | $t(309) = .32$         | $p = .75$ |
| Departmental           | 1.88                    | .17 | 1.91           | .14 | $t(309) = -1.05$       | $p = .30$ |
| International/Cultural | 1.89                    | .17 | 1.88           | .12 | $t(309) = .13$         | $p = .90$ |
| Leadership             | 1.89                    | .15 | 1.86           | .25 | $t(40.74) = .73^\circ$ | $p = .47$ |
| Political              | 1.89                    | .16 | 1.88           | .20 | $t(309) = .12$         | $p = .90$ |
| Religious              | 1.88                    | .17 | 1.92           | .11 | $t(309) = -1.39$       | $p = .16$ |
| Service Organization   | 1.89                    | .16 | 1.84           | .20 | $t(309) = 1.68$        | $p = .09$ |
| Social Greek Life      | 1.89                    | .17 | 1.88           | .11 | $t(309) = .25$         | $p = .80$ |

<sup>°</sup> *Equal variances not assumed*

### *Study Hypotheses*

*Hypothesis 1: "Approach" personal variables (i.e., extraversion, positive affect, and BAS) will each be a significant predictor of promotion regulatory focus. This hypothesis was tested using simple linear regression. First, the dependent variable, promotion regulatory focus, was measured to reflect three points during a student's academic life: (1) middle/junior-high school, (2) high school, and (3) college. Each independent variable (i.e., extraversion, positive affect, and BAS) was individually tested for the dependent variable. Comparison between each independent variable and the dependent variable across different school levels was possible because proximal*

characteristics, such as personality, are traditionally known as relatively stable constructs over time. Across school levels, reported promotion regulatory focus scores were highly correlated: middle/junior-high school to high school, ( $r = .57, p < .001$ ), high school to college ( $r = .41, p < .001$ ), and middle/junior-high school to college ( $r = .44, p < .001$ ). Second, approach personal characteristics were tested for their predictive qualities for promotion regulatory focus. As shown in Table 9, regression analyses for extraversion and the “fun-seeking” subscale of BAS were not significant predictors. In contrast, positive affect and BAS subscales “drive” and “reward responsiveness” were consistently significant across grade levels.

Table 9.

*Summary of Regression Analyses for “Approach” Personal Characteristics and Promotion Regulatory Focus*

| Approach Personal Characteristics  | Regulatory Focus – Promotion |               |               |
|------------------------------------|------------------------------|---------------|---------------|
|                                    | Middle/Junior-High School    | High School   | College       |
| Extraversion                       | .06                          | .09           | .03           |
| Positive Affect                    | <b>.22***</b>                | <b>.21***</b> | <b>.29***</b> |
| Behavioral Activation System (BAS) |                              |               |               |
| Drive                              | <b>.20***</b>                | <b>.14*</b>   | <b>.14*</b>   |
| Fun-Seeking                        | .07                          | .08           | .02           |
| Reward Responsiveness              | <b>.15**</b>                 | <b>.21***</b> | <b>.20***</b> |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Hypothesis 2: “Avoidant” personal variables (i.e., neuroticism, negative affect, and BIS) will each be a significant predictor of prevention regulatory focus. Similar to*

Hypothesis 1, Hypothesis 2 was also tested by simple linear regression. The dependent variable, prevention regulatory focus, was measured for three points during a student's academic life: (1) middle/junior-high school, (2) high school, and (3) college. Each independent variable (i.e., neuroticism, negative affect, and BIS) was individually tested for the dependent variable. Across school levels, reported prevention regulatory focus scores were highly correlated: middle/junior-high school to high school ( $r = .72, p < .001$ ), high school to college ( $r = .52, p < .001$ ), and middle/junior-high school to college ( $r = .44, p < .001$ ).

Regression analyses for prevention regulatory focus were unexpected. As shown in Table 10, neuroticism and negative affect significantly predicted prevention regulatory focus; however, this reflected an inverse relationship. BIS, in contrast, was predictive of prevention regulatory focus only at the high school level.

Table 10.

*Summary of Regression Analyses for "Avoidance" Personal Characteristics and Prevention Regulatory Focus*

| Avoidant Personal Characteristics  | Regulatory Focus - Prevention |                |                |
|------------------------------------|-------------------------------|----------------|----------------|
|                                    | Middle/Junior High School     | High School    | College        |
| Neuroticism                        | <b>-.20***</b>                | <b>-.23***</b> | <b>-.25***</b> |
| Negative Affect                    | <b>-.21***</b>                | <b>-.16**</b>  | <b>-.27***</b> |
| Behavioral Inhibition System (BIS) | .10                           | <b>.12*</b>    | .03            |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Hypothesis 3: Promotion regulatory focus will be a positive predictor of mastery and performance-approach achievement goals.* Using linear regression, the findings for Hypothesis 3 partially supported its assumptions. According to the data, promotion regulatory focus (college-level only) was a significant predictor of student mastery goals, with ( $\beta = .22, p < .001$ ). In contrast, its relationship with performance-approach goals was non-significant ( $\beta = .02, p > .05$ ). Although it was not anticipated, promotion regulatory focus was a significant, negative predictor of performance-avoidance goals ( $\beta = -.19, p < .01$ ).

*Hypothesis 4: Prevention regulatory focus will be a positive predictor of performance -approach and -avoidance achievement goals.* Linear regression was also used to test Hypothesis 4. The findings, however, did not support its assumptions. Prevention regulatory focus was not a significant predictor of student performance-approach goals ( $\beta = -.09, p > .05$ ), and rather a significant, *negative* predictor of student performance-avoidance goals ( $\beta = -.11, p < .05$ ).

*Hypothesis 5: Performance -approach and -avoidance achievement goals will be positive predictors of cheating behavior. Mastery achievement goals will be a negative predictor of cheating behavior.* College cheating was tested in three different ways: past history of cheating (PHC), current beliefs and opinions about cheating (CBC), and responses to a cheating hypothetical vignette (VIG). As described in the remaining of this section, each approach to measuring college cheating was tested for achievement goals according to its respective methodological design.

First, PHC was tested for its influence on achievement goals using linear regression. According to the aggregate measure of college cheating overall, performance-avoidance goals were found to be a positive predictor of PHC ( $\beta = .15, p < .01$ ), and mastery goals were found to be a negative predictor of PHC ( $\beta = -.19, p < .01$ ). Performance-approach goals ( $\beta = .06, p > .05$ ), however, were not significant predictors of PHC. Table 11 describes the relationship for each type of college cheating.

Table 11.

*Summary of Regression Analyses for Types of College Cheating and Achievement Goals*

| Types of Cheating – College  | Achievement Goals |                      |                       |
|--|-------------------|----------------------|-----------------------|
|  | Mastery           | Performance Approach | Performance Avoidance |
| 1. Collaborated on an assignment that was meant to be completed individually                   | <b>-.22***</b>    | .02                  | .09                   |
| 2. Shared answers from another student during test/exam  | <b>-.13*</b>      | .11                  | <b>.15**</b>          |
| 3. Allowed a student to share answers from you during a test/exam                              | <b>-.14*</b>      | .09                  | <b>.13*</b>           |
| 4. Used signals to share answers with other students during a test/exam                        | -.02              | -.20                 | .06                   |
| 5. Helped a friend to cheat  | <b>-.12*</b>      | .04                  | <b>.12*</b>           |
| 6. Brought hidden notes (or an equivalent form) to a test/exam in order to use for extra help  | <b>-.12*</b>      | .01                  | .03                   |
| 7. Used electronic devices for help on a test/exam   | <b>-.13*</b>      | .11                  | <b>.18**</b>          |
| 8. Obtained test items beforehand in order to be more prepared for a test/exam                 | -.07              | .05                  | <b>.18**</b>          |
| 9. Delayed taking a test/exam or completing an assignment for a false excuse                   | -.03              | <b>-.14*</b>         | -.09                  |
| 10. Changed a response to a test/assignment that was graded and ask the instructor to re-grade | -.07              | .04                  | <b>.13*</b>           |
| 11. Make up fake bibliography citations for a paper  | <b>-.18**</b>     | .08                  | .09                   |
| 12. Written a paper for another student for him/her to receive credit                          | .01               | .05                  | .02                   |
| 13. Submitted a paper that another student has written so that you could receive credit        | -.08              | -.01                 | .06                   |
| 14. Included sections on a paper without acknowledging the author                              | -.08              | .07                  | .06                   |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Second, college cheating was measured by students' current beliefs on cheating (CBC), and was tested for its predictive relationships with achievement goals using linear regression. As shown in Table 12, mastery students reported negative attitudes toward academic cheating and, in general, performance-oriented students reported favorable attitudes toward cheating. In particular, observations worth noting include the significant relationships between achievement goals and student beliefs concerning the prevalence and seriousness of cheating. According to the data, cheating was reported as common among performance-avoidance students only ( $\beta = .16, p < .01$ ) and, in contrast, cheating was perceived to be a serious problem only for mastery-oriented students.

Table 12.

*Summary of Regression Analyses for Achievement Goals and Current Beliefs on Cheating (CBC)*

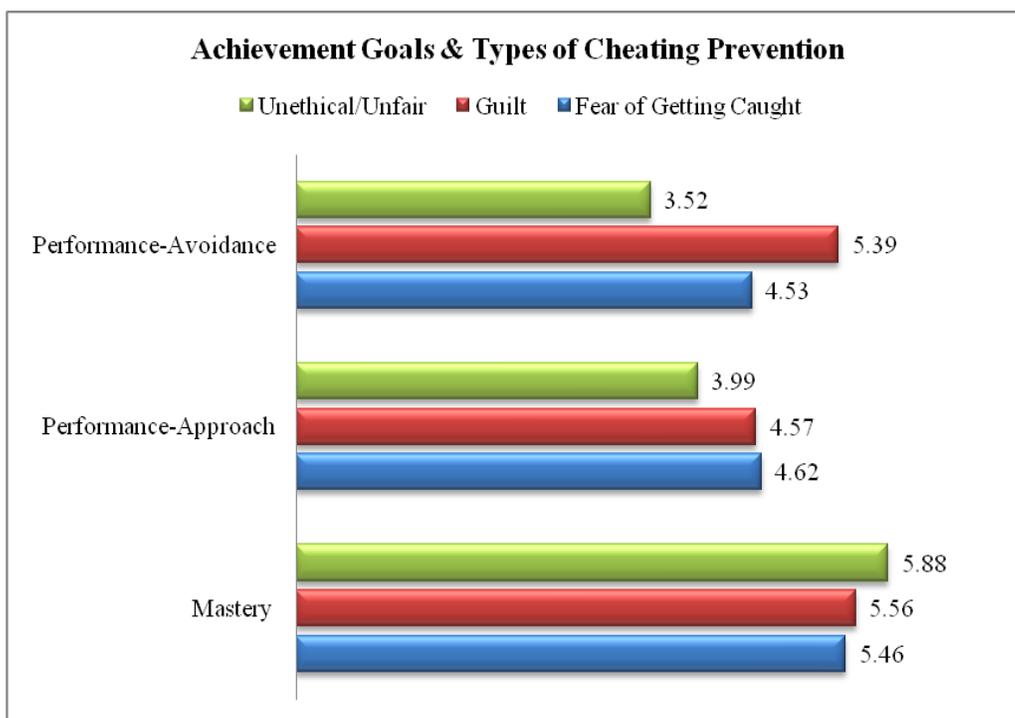
| Current Beliefs on Cheating (CBC)                                    | Achievement Goals |                      |                       |
|--|-------------------|----------------------|-----------------------|
|  | Mastery           | Performance Approach | Performance Avoidance |
| 1. Cheating may be justified to complete a small assignment or test. | <b>-.23***</b>    | <b>.14*</b>          | <b>.12*</b>           |
| 2. Cheating may be justified to complete a large assignment or test. | <b>-.27***</b>    | .08                  | <b>.16**</b>          |
| 3. Cheating may be justified to pass a course.                       | <b>-.28***</b>    | <b>.12*</b>          | <b>.17**</b>          |
| 4. Cheating may be justified to help a friend.                       | <b>-.17**</b>     | <b>.12*</b>          | .10                   |
| 5. Cheating may be justified in other circumstances.                 | <b>-.19**</b>     | <b>.12*</b>          | .09                   |
| 6. Cheating is common among college students.                        | -.04              | .09                  | <b>.16**</b>          |
| 7. My friends do not cheat.  | <b>.16**</b>      | <b>-.14*</b>         | <b>-.17**</b>         |
| 8. Cheating is a serious problem in college today.                   | <b>.15*</b>       | .09                  | .05                   |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

One additional question to the CBC section involved students' beliefs about cheating prevention. This item was included to test for any differences that might exist between achievement orientations and students' reasons to avoid cheating. Participants were asked to identify the primary reason why a student might not cheat. As can be seen in Figure 7, the mean scores for three types of cheating prevention appeared to differ across achievement goal types. This was further explored by statistical testing.

Figure 7.

*Mean Scores for Achievement Goals and Types of Cheating Prevention*



Three one-way between-group analyses of variance (ANOVA) were conducted to compare mean scores between achievement goal and cheating prevention type. First,

mastery goals (a continuous dependent variable) were tested to explore their impact on cheating prevention type (a three-level, categorical independent variable). Participants were grouped into three sections according to their responses on the cheating prevention item (Group 1: Fear of Getting Caught; Group 2: Guilt; Group 3: Unethical/Unfair). There was not a statistically significant difference at the  $p < .05$  level, for the three groups.

Second, performance approach was tested to explore the impact of achievement goals on cheating prevention type. The subject groupings for performance approach were the same as those for mastery. The ANOVA results suggested that differences were statistically significant for the three groups:  $F(2, 305) = 4.16, p < .016$ . These findings, however, are somewhat questionable due to an initial test violation for homogeneity of variances. Using Levene's test for homogeneity of variances, the Levene statistic was 3.84 ( $p < .05$ ). Due to the statistical significance value, two one-way robust tests of equality were completed. Tests for the Welch statistic (3.47,  $p < .05$ ) and Brown-Forsythe (4.67,  $p < .05$ ) suggest that there are indeed significant differences. The effect size, calculated using eta squared, was small (.03). Post-hoc comparisons using the Tukey HSD test revealed a statistically significant difference between the mean scores for Group 1 ( $M = 4.62, SD = 1.56$ ) and Group 3 ( $M = 3.99, SD = 1.79$ ). Group 2 ( $M = 4.57, SD = 1.21$ ) did not differ significantly from either Group 1 or 3.

Third, performance avoidance was tested to explore the impact of achievement goals on cheating prevention type. The subject groupings for performance avoidance were the same as those for mastery and performance-approach. The ANOVA results

suggested that differences among the three groups were statistically significant at the  $p < .05$  level, for the three groups:  $F(2, 305) = 14.43, p < .001$ . The effect size, calculated using eta squared, was .09. Using traditional guidelines theorized by Cohen (1988), this effect size is medium to large. Post-hoc comparisons using the Tukey HSD test revealed that Group 1 ( $M = 4.53, SD = 1.54$ ) was significantly different from Group 3 ( $M = 3.52, SD = 1.68$ ). Group 2 ( $M = 5.39, SD = 1.21$ ) was also significantly different from Group 3. Mean score differences between Groups 1 and 2 were not significant.

Lastly, participant responses to a hypothetical cheating vignette were examined for any differences that might exist across achievement goal types. Using simple linear regression, statistical findings corroborated results shown in PHC and CBC assessment. As shown in Table 13, mastery students were more likely to report a case of cheating (Tell the TA,  $\beta = .15, p < .01$ ; Tell the Professor,  $\beta = .16, p < .01$ ) and less likely to be tempted to cheat as well as participate in a cheating situation (Be Tempted to Cheat, but Decide Not To,  $\beta = -.16, p < .01$ ; Would Cheat,  $\beta = -.28, p < .001$ ). In addition, performance-avoidance students were more likely to be tempted to cheat as well as participate in a cheating situation (Be Tempted to Cheat, but Decide Not To,  $\beta = .22, p < .001$ ; Would Cheat,  $\beta = .14, p < .05$ ). Consistent with the PHC and CBC findings, performance-approach students did not reflect clear responses to the vignette.

Table 13.

*Summary of Regression Analyses for Achievement Goals and Vignette Responses*

| Vignette Responses                              | Achievement Goals |                      |                       |
|---|-------------------|----------------------|-----------------------|
|   | Mastery           | Performance Approach | Performance Avoidance |
| Tell the TA                                     | <b>.15**</b>      | -.01                 | -.11                  |
| Tell the Professor                              | <b>.16**</b>      | -.04                 | -.11                  |
| Talk with Friends, but not with TA or Professor | -.01              | .08                  | .05                   |
| Do Nothing                                      | -.05              | -.01                 | .10                   |
| Be Tempted to Cheat, but Decide Not To          | <b>-.16**</b>     | .05                  | <b>.22***</b>         |
| Would Cheat                                     | <b>-.28***</b>    | .10                  | <b>.14*</b>           |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Hypothesis 6: Regulatory focus is expected to act as a mediating variable between student variables and achievement goals.* This hypothesis was completed to test whether regulatory focus would mediate the relationship between personal characteristics and achievement goals. Hierarchical regression analyses were conducted. These tests were first performed to examine the mediating role of aggregate regulatory focus (i.e., prevention and promotion) on the relationship between aggregate personal characteristics (i.e., approach and avoidant groups) and aggregate achievement goals (i.e., mastery, performance-approach, and performance-avoidance). Pearson's  $r$  correlations showed that although the predictor variable was significantly correlated with the dependent variable ( $r = .28, p < .001$ ), the relationship between the hypothesized mediating variable and the dependent variable was not statistically significant ( $r = -.06, p > .05$ ); thus, any type of mediation would not be possible.

*Hypothesis 7: Achievement goals will act as a mediating variable between regulatory focus and cheating behavior.* The goal of this hypothesis was to measure the influence of achievement of the relationship between regulatory focus and cheating behavior. There were no significant mediating relationships for any type of achievement goals between regulatory focus and cheating behavior.

*Hypothesis 8: Academic cheating will be predicted by student achievement goals, regulatory focus, and personal characteristics.* The original hypothesized path model was tested using EQS 6.1. Table 14 presents the structural parameter estimates for the hypothesized model.

Table 14.

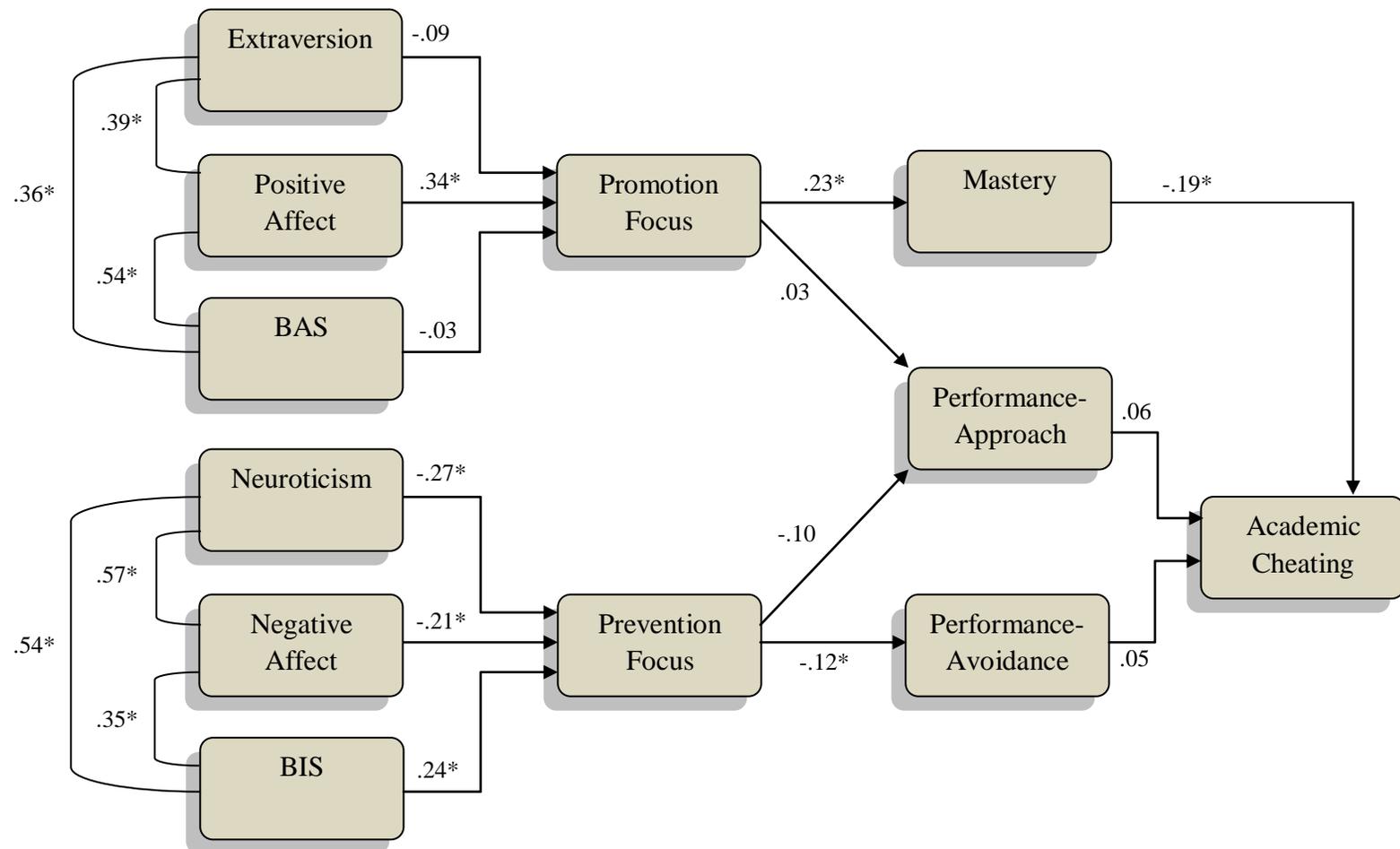
*Standardized Path Estimates for Hypothesized Model*

| <b>Dependent Variables</b>  | <b>Paths</b>  | <b>Standardized Path Estimates</b> | <b>s.e.</b> |
|-----------------------------|---|------------------------------------|-------------|
| Promotion Regulatory Focus  | Positive Affect → Promotion Regulatory Focus        | .34*                               | .03         |
|                             | BAS → Promotion Regulatory Focus                    | -.03                               | .04         |
|                             | Extraversion → Promotion Regulatory Focus           | -.09                               | .02         |
| Prevention Regulatory Focus | Negative Affect → Prevention Regulatory Focus       | -.21*                              | .08         |
|                             | BIS → Prevention Regulatory Focus                   | .24*                               | .09         |
|                             | Neuroticism → Prevention Regulatory Focus           | -.27*                              | .06         |
| Mastery                     | Promotion Regulatory Focus → Mastery                | .23*                               | .22         |
| Performance-Approach        | Promotion Regulatory Focus → Performance-Approach   | .03                                | .29         |
|                             | Prevention Regulatory Focus → Performance-Approach  | -.10                               | .11         |
| Performance-Avoidance       | Prevention Regulatory Focus → Performance-Avoidance | -.12*                              | .11         |
| Student Cheating            | Mastery → Student Cheating                          | -.19*                              | .01         |
|                             | Performance-Approach → Student Cheating             | .06                                | .22         |
|                             | Performance-Avoidance → Student Cheating            | .05                                | .01         |

\* $p < .05$ .

Figure 8 demonstrates the path model findings. Terms of goodness-of-fit indicators for the full model, however, reflected a poor fit to the data ( $\chi^2 = 313.87$ ,  $df = 43$ ,  $p < .001$ ). Estimates for GFI (.86), AGFI (.75), and root mean-square, or RMR, (.17) were far below acceptable indices for quality model fit.

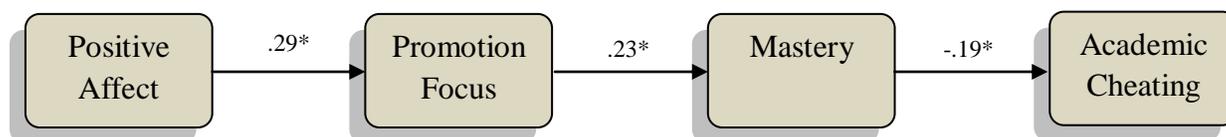
Figure 8.

*Standardized Path Model*

For the maximum likelihood (ML) equation predicting college cheating, only one hypothesized parameter was significant. This was the path from positive affect → promotion regulatory focus → mastery achievement goals → college cheating. As shown in Figure 9, this path reflected a straightforward relationship from positive affect to cheating. It is noteworthy, however, that although terms of goodness-of-fit indicators for this path showed an improved fit ( $\chi^2 = 25.68$ ,  $df = 3$ ,  $p < .001$ ), estimates for GFI (.96), AGFI (.87), and RMR (.07) were still below the acceptable indices for quality model fit.

Figure 9.

*Reduced Standardized Model for College Cheating*

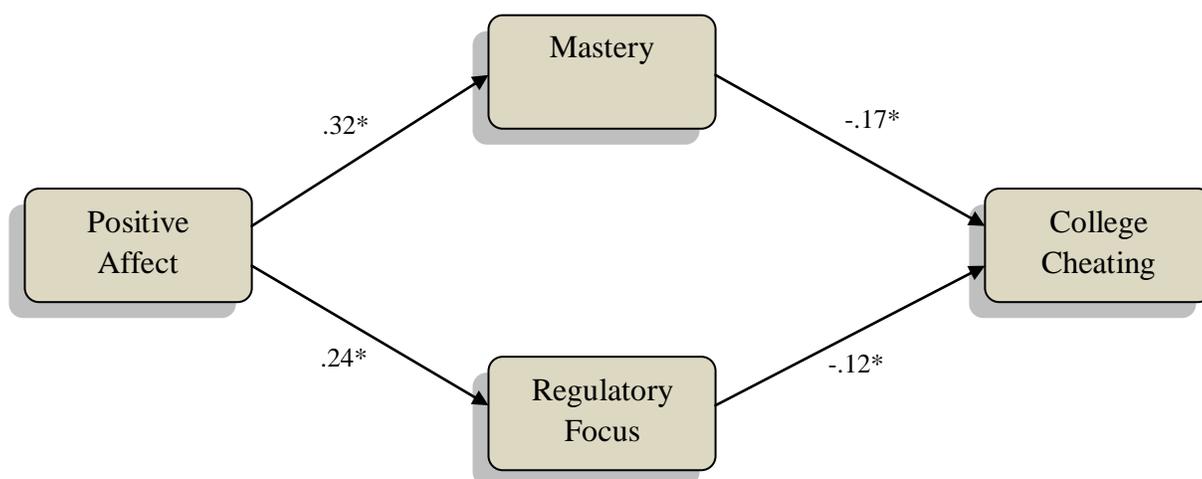


Following the notion that positive affect was confirmed to be predictive of academic cheating, additional tests were performed to see whether there were possible model flaws with respect to the order between regulatory focus and achievement goals. Interestingly enough, an important model emerged, reflecting the fact that promotion focus and mastery achievement goals tend to co-vary, rather than be predictive of each other (as substantiated in the mediating tests in earlier hypotheses). When regulatory focus was tested as a covariant (rather than a predictor) within the reduced model for college cheating, a strong predictive relationship was revealed.

As shown in Figure 10, positive affect was found to be a positive predictor of both mastery achievement goals ( $\beta = .32, p < .05$ ) and aggregate (promotion and prevention) regulatory focus ( $\beta = .24, p < .05$ ). Moreover, mastery goals ( $\beta = -.17, p < .05$ ) and regulatory focus ( $\beta = -.12, p < .05$ ) were both negative predictors of college cheating. When testing this model for fit, estimates were excellent ( $\chi^2 = 5.93, df = 2, p > .05$ ), including GFI = .991, AGFI = .953, and RMR = .017.

Figure 10.

*Revised Path Model from Positive Affect to College Cheating*

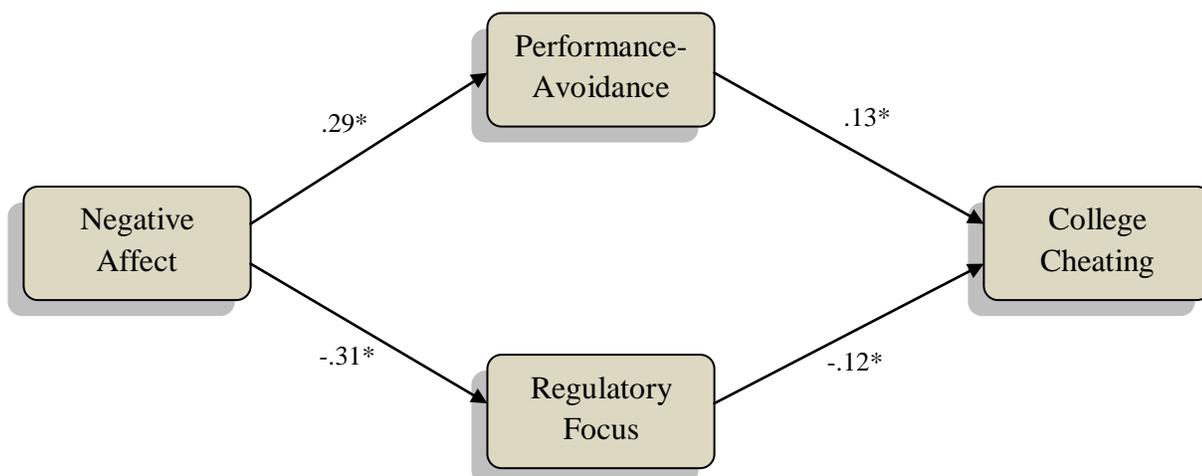


This path model was also tested for negative affect and, as shown on Figure 11, negative affect was also found to be a positive predictor of performance-avoidance ( $\beta = .29, p < .05$ ) achievement goals and negative predictor of regulatory focus ( $\beta = -.31, p < .05$ ). In a similar vein, performance-avoidance goals were positive predictors of college cheating ( $\beta = .13, p < .05$ ), and aggregate regulatory focus was a negative predictor of

college cheating ( $\beta = -.12, p < .05$ ). When testing this model for fit, estimates were also excellent ( $\chi^2 = 2.47, df = 2, p = .29$ ), including GFI = .996, AGFI = .980, and RMR = .019.

Figure 11.

*Revised Path Model from Negative Affect to College Cheating*



## **CHAPTER 5:**

### **DISCUSSION**

#### Primary Objective of the Study

Research objectives for this study were twofold. The primary objective was to more closely examine the interaction between proximal and distal variables with respect to academic cheating. This objective was achieved by analyzing the predictive relationships among personal characteristics, regulatory focus, achievement goals, and college cheating behavior. In general, findings of this study prove the cheating phenomenon to be exceptionally complex. Although the approach-avoidant valences did not hold for all variables as predicted, outcomes of this study did show conclusions that are valuable both to the study of academic cheating as well as the field of educational psychology.

The full hypothesized path model was not supported. This was partially due to the unpredicted correlates involving regulatory focus. At the theory stage, it was expected that promotion and prevention regulatory focus would show evidence of an approach-avoidant relationship. Quite to the contrary, empirical outcomes for this study revealed a statistically significant, positive correlation for the two elements of regulatory focus. The hypothesized regression paths did not account for this unforeseen effect and, as a result, only one significant path was observed: positive affect to promotion regulatory focus to mastery achievement goals to college cheating. This outcome was, initially, a highly disappointing one; however, once minor adjustments were made according to the singular path, the approach-avoidant hypotheses took a much better form.

Personal variables were predictive of regulatory focus in an unanticipated way. Of the three “approach” personal characteristics tested in this study (i.e., extraversion, positive affect, and BAS), only positive affect was predictive of promotion regulatory focus as originally hypothesized. The correlation matrix showed, however, that positive affect was *also* predictive of prevention regulatory focus (albeit the association was less strong). Its valence-based counterpart, negative affect, was found to be inversely related to *both* types of regulatory focus. These findings suggest that affective traits are powerful influences on regulatory focus. Strong positive affect appears to motivate a student toward forming a sense of self-regulation, *regardless* of the type of regulatory focus. In contrast, strong negative affect might inhibit a student from forming the necessary foundations of self-regulation altogether.

The relationship between regulatory focus and achievement goal orientation was also unanticipated. After an in-depth analysis, regulatory focus emerged as a stronger covariant—rather than predictor—of achievement goals. Results ultimately showed that approach-avoidant tendencies of affect were predictive of achievement goals *and* aggregate (promotion and prevention) regulatory focus.

Key findings of this study show the role of affect on predicting student cheating. College students with high positive affect were more likely to (1) possess some type of regulatory focus, and (2) adopt a mastery goal orientation. In the classroom, they were substantially less likely to cheat than their negative affect counterparts. Students with high negative affect, in contrast, were more likely to (1) lack any type of regulatory

focus, and (2) adopt a performance-avoidant goal orientation. These qualities, according to this study, were predictive of academic cheating.

In their conceptual model for student cheating and motivation, Murdock and Anderman (2006) identified the importance of considering affective processes in the evaluation of cheating research. They asserted that little is known involving students' emotional actions and reactions to cheating situations and, in addition, the role of affect as a regulatory function has largely been ignored. Although there has been some recent attention to the "state" qualities of emotion and cheating, this study has followed a "trait" approach to temperament and cheating. Because affective properties are considered to be stable qualities that persist over the lifespan (Rothbart & Sheese, 2007), and that past cheating is one of the best predictors of future cheating (Cizek, 2003), this observed connection from affect to cheating provides additional support for the influence of temperament on academic-related behaviors. This study contributes to empirical and theoretical development of academic cheating and, in sum, a valence-based model successfully linked proximal variables (i.e., affect) to distal variables (i.e., regulatory focus and achievement goals), with respect to college cheating.

#### Secondary Objective of the Study

The secondary objective of this study was to more closely examine the phenomenon of academic cheating and its related correlates. Demographic information about the student sample provided supplementary evidence about "profiling" student cheaters. Analyses of cheating rates illustrated no significant differences in student

gender, ethnicity, or classification (domestic/international) at middle/junior-high school, high-school, or college levels. Differences in academic year (among undergraduate students), academic college, or student membership in college organizations reported statistical non-significance. In addition, the frequency of cheating across the involved academic colleges was relatively similar, suggesting that students of a certain academic domain did not appear to cheat more often than others. Observations of the sample participants denote, for example, that college students enrolled in an academic/honorary club were no less likely to cheat than those enrolled in social fraternities or sororities. This contradicts existing research (e.g., Storch & Storch, 2002); however, it does highlight the importance that today's researchers focus less on profiling students and more on exploring the causal characteristics which may be associated with cheating.

One significant group difference was observed involving college student status (undergraduate and graduate students). Surprisingly, the graduate student sample reported higher rates of cheating for the middle/junior-high school and high-school levels when compared to the undergraduate students. There was, however, no group difference at the college level. This outcome may be explained in several ways. For example, graduate students might possess a stronger desire for academic achievement from an earlier age. On the other hand, some undergraduate students may proceed to become graduate students themselves, and thus, the conclusions of this outcome do warrant a certain degree of caution.

Beyond the variables of demography, other salient observations for this study were made. For example, research trends showed that having a mastery goal orientation

was uniformly better at predicting cheating than a performance goal orientation. Mastery students' inverse correlation with cheating was significantly stronger than the positive correlation of performance-avoidant students. These group differences are comparatively consistent with previous literature (e.g., Murdock et al., 2001). Other findings provided additional evidence. Mastery students, for instance, were not only less likely to cheat, but reported (1) a reduced temptation of cheating, (2) little to no justification of cheating across different circumstances, (3) attitudes reflecting cheaters as a serious problem in college, and (4) their own friends do not cheat. For the cheating vignette, mastery students were the only participants who would consider reporting a cheating incidence to the teaching assistant or professor. Although their scores were consistently less robust, performance-avoidant students did cheat more frequently than other achievement goal groups. They reported (1) a strong temptation of cheating, (2) justification of cheating behaviors, (3) attitudes reflecting cheating as common in college, and (4) their own friends do cheat. These outcomes partly demonstrate a key normative component of the cheating phenomenon: dishonest behavior can be personally justified in academic circumstances in which it is perceived to be socially acceptable. This is relevant to the primary objectives, as past research (Jensen-Campbell & Graziano, 2005) has shown that resistance of temptation for cheating appears to be closely related to issues of student self-regulation. Moreover, affectivity has been viewed as an accurate barometer reflecting one's perceptions of social acceptability (Tangey, 2002).

In a similar vein, this study also considers the primary reasons why other students might decide *not* to cheat. According to the results, mastery students reported equivalent

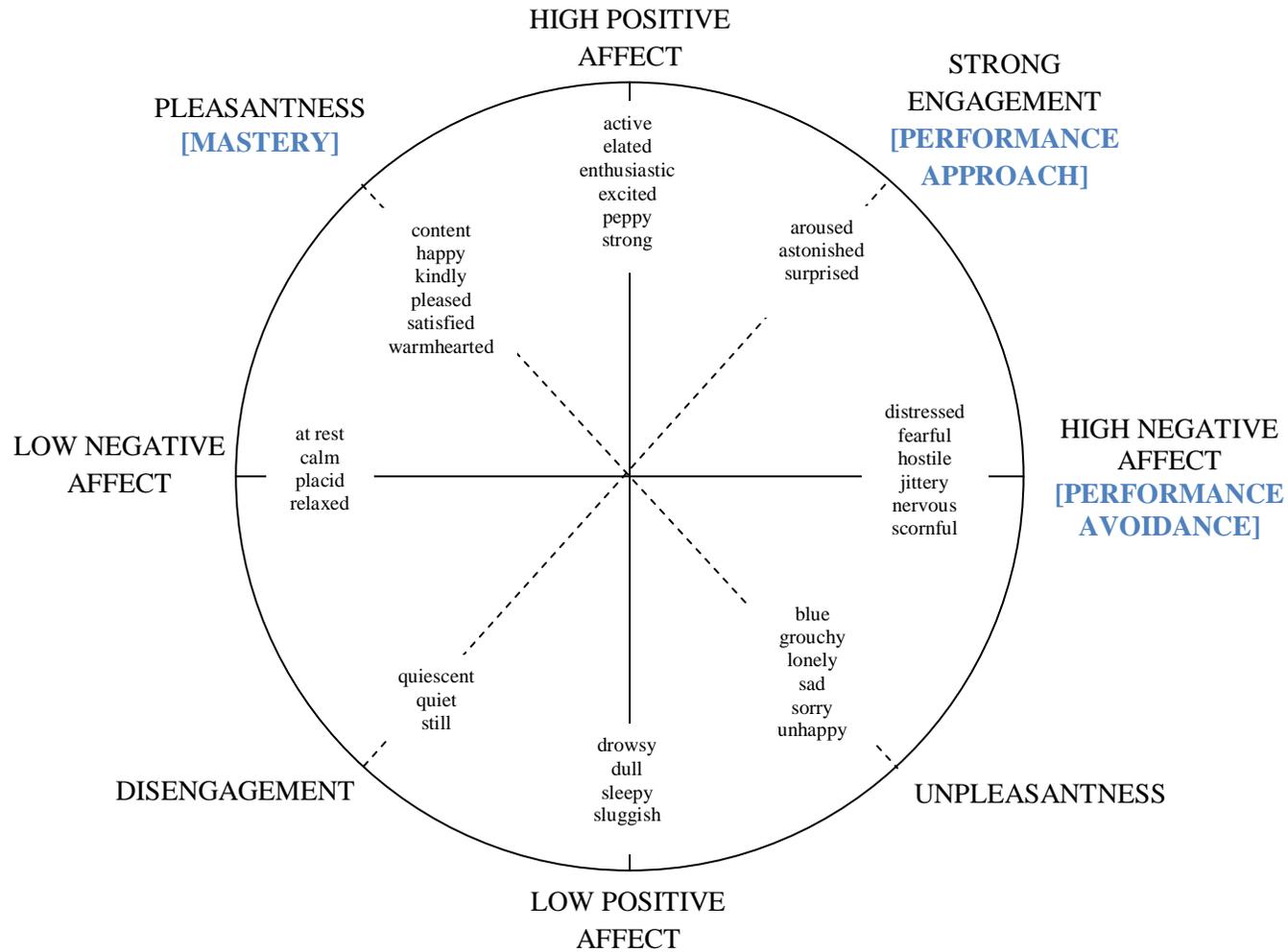
answers as to why students do not cheat. Performance-avoidant students, however, were much more likely to report *guilt* as the primary reason why other students do not cheat, and were also much less likely to select *unethical* reasons as a sufficient deterrent from cheating. This provides information about the relationship between affective salience and the decision-making process. Performance-avoidant students tended to believe that others do not cheat because they focused on the negative consequences of feeling guilty instead of the fears of crossing some moral boundary. It may be inferred, then, that performance-avoidant students do not perceive cheating as an ethical issue; rather, cheating (for these students) might be best deterred by circumstances in which guilt and the fear of getting caught are made salient.

The interactive process between morality, affect, and cheating is compatible with existing research. Tangey (2002) explained that shame and guilt are negative emotions that occur when a student experiences failure and transgressions. As a result, if a student fears the negative, emotionally-charged consequences of failing an exam, then anticipated sensations of guilt may be a sufficient reason for him or her to decide *not* to cheat. As a stable behavior over time, a student with a consistent focus on guilt (i.e., shame) appears to seriously undermine his or her ability to learn in a challenging environment (Tangey, 2002), hence, the operant reinforcement of a performance-avoidant goal orientation and neurotic patterns. These findings have a great significance for the study of academic integrity and morality, as literature has predominantly embraced moral (cognitive) behaviors related to cheating (e.g., Strom & Strom, 2007) than affective (non-cognitive) ones (e.g., Karabenick, 2004).

Critical findings provided substantial evidence with respect to direct relationships between affective properties and achievement goal orientations. According to the study's correlation matrix, (1) mastery students exhibited high levels of positive affect and low negative affect, (2) performance-approach students exhibited high levels of positive affect and high negative affect, and (3) performance-avoidance exhibited high negative affect and no significant level of positive affect. In application to the two-factor structure theorized by Tellegen (1985), the combinations of affective valence characterize certain qualities. As shown in Figure 12, mastery students fell into the "Pleasantness" segment, and were more likely to be content, happy, kindly, pleased, satisfied, and warmhearted. Performance-approach students fell into the "Strong Engagement" segment, and were more likely to be easily aroused, astonished, and surprised. Performance-avoidant students fell into the "High Negative Affect" segment, and were more likely to be distressed, fearful, hostile, jittery, nervous, and scornful. These qualities appear to be strongly reflective not only of their goal orientations, but also of their academic behavior, such as cheating.

Figure 12.

*Affective Valence and Students' Achievement Goals*



In addition to the affective influence on cheating, the positive correlation (as observed in this study) between performance-avoidant students and anxietytic, impulsive features of neuroticism may have additional understanding of the relationship between cheating and personality. Based on the results, neuroticism was *not* a significant predictor of cheating. Although this contradicts early studies in which high levels of neuroticism were considered to be a relatively strong predictor of risky behaviors, such as cheating or delinquent acts (e.g., Brownell, 1928; Bunn et al., 1992; Knowlton & Hamerlynck, 1967), this study is more congruent with contemporary assumptions that traits are rather inconsistent predictors (e.g., Cizek, 1999; Nathanson et al., 2006). Nevertheless, strong correlations observed in this study with respect to traits and affect may suggest that temperament may be a more stable predictor of cheating.

### Implications

This study has provided substantial findings that are highly beneficial to the study of academic cheating and motivation. In particular, interactionistic outcomes confirmed a valence-based relationship between proximal and distal variables. In particular, it was able to successfully show the predictive relationship between personal characteristics (i.e., affective temperament), regulatory focus, achievement goal orientation, and student cheating. Practical implications of this study speak to the role of affective traits as a noteworthy element of cheating and, perhaps, other academic behaviors. This study also helps to understand the effects of temperament on students' attitudes and perceptions of school. Although more research on this subject is needed, this study does suggest that

increased attention to motivation and affective (non-cognitive) behavior might contribute to research concentrated on the multifaceted underpinnings of the cheating phenomenon.

## REFERENCES

- Ahlers-Schmidt, C. R., & Burdsal, C. (2004). Passive cheating in back-to-back classes. *Teaching of Psychology, 31*(2), 108-109.
- Aiken, L. R. (1991). Detecting, understanding, and controlling for cheating on tests. *Research in Higher Education, 32*(6), 725-736.
- Allen, J., Fuller, D., & Lockett, M. (1998). Academic integrity: Behaviors, rates, and attitudes of business students toward cheating. *Journal of Marketing Education, 20*(1), 41-52.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271.
- Ames, C., & Archer, J. (1987). Mothers' belief about the role of ability and effort in school learning. *Journal of Educational Psychology, 79*, 409-414.
- Ames, C., & Archer, J. (1988). Achievementgoals in the classroom: Students' learning strategies and motivational processes. *Journal of Educational Psychology, 80*, 260-267.
- Anderman, E. M. (2006). The effects of personal, classroom, and school goal structures on academic cheating. In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating*. San Diego, CA: Academic Press.
- Anderman, E. M., Griesinger, T., & Westerfield, G. (1998). Motivation and cheating during early adolescence. *Journal of Educational Psychology, 90*(1), 84-93.
- Anderman, E. M., & Maehr, M. L. (1994). Motivation and schooling in the middle grades. *Review of Educational Research, 64*(2), 287-309.

- Anderman, E. M., & Midgley, C. (2004). Changes in self-reported academic cheating across the transition from middle school to high school. *Contemporary Educational Psychology, 29*, 499-517.
- Anderman, L. H., & Anderman, E. M. (1999). Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology, 25*, 21-37.
- Antion, D. L., & Michael, W. B. (1983). Short-term predictive validity of demographic, affective, personal, and cognitive variables in relation to two criterion measures of cheating behaviors. *Educational and Psychological Measurement, 43*(2), 467-482.
- Atkins, B. E., & Atkins, R. E. (1936). A study of the honesty of prospective teachers. *Elementary School Journal, 36*, 595-603.
- Baird, J. S., Jr. (1980). Current trends in college cheating. *Psychology in the Schools, 17*(4), 515-522.
- Baer, J. S. (2002). Understanding individual variation in college drinking. *Journal of Studies on Alcohol, 14*, 40-53.
- Baldwin, D. C., Daughtery, S. R., Rowley, B. D., & Schwarz, M. R. (1996). Cheating in medical school: A survey of second-year students at 31 schools. *Academic Medicine, 71*(3), 267-273.
- Ball, S., & Zuckerman, M. (1990). Sensation seeking, Eysenck's personality dimensions and reinforcement sensitivity in concept formation. *Personality and Individual Differences, 11*, 343-345.

- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3, 193-209.
- Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education*, 31(2), 101-119.
- Bargh, J. A. (1997). The automaticity of everyday life. *Advances in Social Cognition*, 20-27.
- Barnett, D. C., & Dalton, J. C. (1981). Why college students cheat. *Journal of College Student Personnel*, 11, 545-550.
- Bartussek, D., Diedrich, O., Naumann, E., & Collet, W. (1993). Introversiön-extraversiön and event-related potential (ERP): a test of J. A. Gray's theory. *Personality and Individual Differences*, 14(4), 565-574.
- Bauer, K. W., & Liang, Q. (2003). The effect of personality and precollege characteristics on first-year activities and academic performance. *Journal of College Student Development*, 44, 277-290.
- Beck, L., Ajzen, I. (1991). Predicting dishonest actions using the Theory of Planned Behavior. *Journal of Research in Personality*, 25, 285-301.
- Becker, J. S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy*, 76, 168-217.
- Bergin, D. A. (1999). Influences on classroom interest. *Educational Psychologist*, 34, 87-98.

- Bjorklund, D. F., & Pellegrini, A. D. (2000). Child development and evolutionary psychology. *Child Development, 71*, 1687-1798.
- Bjorklund, D. F., & Pellegrini, A. D. (2002). *The origins of human nature: Evolutionary developmental psychology*. Washington, DC: APA.
- Blackburn, M. A. (1996). *Cheating and motivation: An examination of the relationships among cheating behaviors, motivational goals, cognitive engagement, and perceptions of classroom goal structures*. Unpublished doctoral dissertation, University of Oklahoma.
- Blackburn, M. A., & Miller, R. B. (1996, April). *Cheating and motivation: A possible relationship*. Paper presented at the annual meeting of the American Educational Research Association, New York.
- Bolin, A. U. (2004). Self-control, perceived opportunity, and attitudes as predictors of academic dishonesty. *The Journal of Psychology, 138*(2), 101-114.
- Bonjean, C.J., & McGee, R. (1965). Scholastic dishonesty among undergraduates in different systems of social control. *Sociology of Education, 38*(2), 127-137.
- Brickman, W. W. (1961). Ethics, examinations, and education. *School and Society, 89*, 412-415.
- Brockner, J., Higgins, E. T., & Low, M. B. (2004). Regulatory focus theory and the entrepreneurial process. *Journal of Business Venturing, 19*, 203-220.
- Bunn, D. N., Caudill, S. B., & Gropper, D. M. (1992). Crime in the classroom: An economic analysis of undergraduate student behavior. *Journal of Economic Education, 23*(3), 197-207.

- Butler, R. (1998). Determinants of help seeking: Relations between perceived reasons for classroom help-avoidance and help-seeking behaviors in an experimental context. *Journal of Educational Psychology, 90*, 630–644.
- Butler, R., & Neuman, O. (1995). Effects of task and ego achievement goals on help-seeking behaviors and attitudes. *Journal of Educational Psychology, 87*, 261–267.
- Butterfield, F. (1991, May 22). Scandal over cheating at M.I.T. stirs debate on limits of teamwork. *The New York Times*.
- Calabrese, R.L., Cochran, J.T. (1990). The relationship of alienation to cheating among a sample of American adolescents. *Journal of Research and Development in Education, 23*(2), 65-71.
- Campbell, E. (2004). Ethical bases of moral agency in teaching. *Teachers and teaching: Theory and practice, 10*(4), 409-428.
- Campbell, W. (1933). Measurement in determining the personality and behavior of the college cribber. *Journal of Education, 53*, 403-408.
- Canning, R. R. (1956). Does an honor system reduce classroom cheating? An experimental answer. *Journal of Experimental Education, 24*, 291-296.
- Cantor, N., & Mischel, W. (1977). Traits as prototypes: Effects on recognition memory. *Journal of Personality and Social Psychology, 35*, 38-48.
- Cantor, N., & Mischel, W. (1979). Prototypes in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 12). New York: Academic Press.

- Carroll, J. (2004). Institutional issues in deterring, detecting and dealing with plagiarism. Retrieved March 7, 2005, from [http://www.jisc.ac.uk/uploaded\\_documents/plagFinal.doc](http://www.jisc.ac.uk/uploaded_documents/plagFinal.doc)
- Cartwright, J. (2000). *Evolution and human behavior*. Cambridge, MA: MIT Press.
- Chamorro-Premuzic, T., & Furnham, A. (2003a). Personality traits and academic examination performance. *European Journal of Personality, 17*, 237-250.
- Chamorro-Premuzic, T., & Furnham, A. (2003b). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality, 37*, 319-338.
- Chapman, K. J., Davis, R., Toy, D., & Wright, L. (2004). Academic integrity in the business school environment: I'll get by with a little help from my friends. *Journal of Marketing Education, 26*(3), 236-249.
- Chapman, W. (1980). A cheating problem in Japan. *Today's Education, 69*, 42-54.
- Cizek, G. J. (1999). *Cheating on tests: How to do it, detect it, and prevent it*. Mahwah, NJ: Lawrence Erlbaum.
- Cizek, G. J. (2003). *Detecting and preventing classroom cheating: Promoting integrity in assessment*. Thousand Oaks, CA: Corwin.
- Clark, L. A., & Watson, D. (1999). Temperament: A new paradigm for trait psychology. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2<sup>nd</sup> ed., pp. 399-423). New York: Guilford.

- Clark, R. A., Teevan, R., & Ricciuti, H. N. (1958). Hope of success and fear of failure as aspects of need for achievement. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society* (pp. 586-595). Princeton, NJ: Van Nostrand.
- Clotfelter, C. (1977). Public services, private substitutes, and the demand for protection against crime. *American Economic Review*, *67*, 867-877.
- Clouse, B. (1973). Attitudes of college students as a function of sex, politics, and religion. *Journal of College Student Personnel*, *14*(3), 260-264.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Collison, M. (1990). Apparent rise in students' cheating has college officials worried. *Chronicle of Higher Education*, A33.
- Conard, M. A. (2006). Aptitude is not enough: How personality and behavior predict academic performance. *Journal of Research in Personality*, *40*, 339-346.
- Condon, L. M., Hummel, J. M., Cox, M. A., Calahan, R. J., Davis, S. F., & Schmidt, C. R. (2000). Documenting passive cheating in college students. *Psi Chi Journal of Undergraduate Research*, *5*, 73-75.
- Conlin, M. (2007, May 14). Cheating—or postmodern learning? *Business Week*, Issue 4034, 42.
- Cooper, M. L., Agocha, V. B., & Sheldon, M. S. (2000). A motivational perspective on risky behaviors: The role of personality and affect regulatory processes. *Journal of Personality*, *68*(6), 1059-1088.

- Corcoran, K. J., & Rotter, J. B. (1989). Morality-conscience guilt scale as a predictor of ethical behavior in a cheating situation among college females. *Journal of General Psychology, 116*, 311-316.
- Costa, P. T., Jr., & McCrae, R. R. (1997). Longitudinal stability of adult personality. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 269-291). San Diego, CA: Academic Press.
- Crowne, D. P., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence*. New York: Wiley.
- Daly, M., & Wilson, M. (2000). Risk-taking, intrasexual competition, and homicide. In J.A. French, A.C. Kamil, & D.W. Leger (Eds.), *Nebraska Symposium on Motivation* (Vol. 47; Evolutionary psychology and motivation, pp. 1-36). Lincoln, NE: University of Nebraska Press.
- Damast, A. (2007a, May 4). Duke works to stem Fuqua fallout. *Business Week Online*, pp. 6.
- Damast, A. (2007b, June 21). Schools' responses to cheating stats. *Business Week Online*, pp. 7.
- Davis, S. F., Grover, C. A., Becker, A. H., & McGregor, L. N. (1992). Academic dishonesty: Prevalence, determinants, techniques, and punishments. *Teaching of Psychology, 19*(1), 16-20.
- Dawkins, R. (1976). *The selfish gene*. Oxford: Oxford University Press.

- De Bruin, G. P., & Rudnick, H. (2007). Examining the cheats: The role of conscientiousness and excitement seeking in academic dishonesty. *South African Journal of Psychology, 37*(1), 153-164.
- De Fruyt, F., & Mervielde, I. (1996). Personality and interests as predictors of educational streaming and achievement. *European Journal of Personality, 10*, 405-425.
- De Raad, B., & Schouwenburg, H.C. (1996). Personality in learning and education: a review. *European Journal of Personality, 10*, 303-336.
- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Depue, R. A., & Collins, P. F. (1999). Neurobiology of the structure of personality: Dopamine, facilitation of incentive motivation, and extraversion. *Behavioral and Brain Sciences, 22*, 491-569.
- Diekhoff, G. M., LaBeff, E. E., Clark, R. E., Williams, L. E., Francis, B., & Haines, V. J. (1996). College cheating: Ten years later. *Research in Higher Education, 37*(4), 481-502.
- Dienstbier, R. A., & Munter, P. O. (1971). Cheating as a function of the labeling of natural arousal. *Journal of Personality and Social Psychology, 17*(2), 208-213.
- Dollinger, S. J., & LaMartina, A. K. (1998). A note on moral reasoning and the Five-Factor Model. *Journal of Social Behavior and Personality, 13*(1), 349-358.

- Dollinger, S. J., Orf, L., & Robinson, A. (1991). Personality and campus controversies: Preferred boundaries as a function of openness to experience. *Journal of Psychology, 125*, 399-406.
- Donohew, L. D., Zimmerman, R. S., Novak, S. P., Feist-Price, S., & Cupp, P. (2000). Sensation-seeking, impulsive decision-making, and risky sex: Implications of individual differences for risk-taking and design of interventions. *Journal of Personality and Individual Differences, 28*, 1079-1101.
- Drake, C. A. (1941). Why students cheat. *Journal of Higher Education, 12*, 418-420.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*(2), 256-273.
- Dweck, C. S., & Sorich, L. (1999). Mastery-oriented thinking. In C. R. Snyder (Ed.), *Coping: The psychology of what works* (pp. 232-251). New York: Oxford University Press.
- Eccles, J. S. (1987). Gender roles and women's achievement-related decisions. *Psychology of Women Quarterly, 11*, 135-172.
- Eccles, J. S. (2005). Subjective task value and the Eccles et al. model of achievement-related choices. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105-121). New York: Guilford.

- Eccles, J. S., Adler, T., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L. et al. (1983). Expectancies, values, and academic behaviors. In J. E. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco: Freeman.
- Eccles, J. S., Adler, T., & Meece, J. L. (1984). Sex differences in achievement: A test of alternate theories. *Journal of Personality and Social Psychology*, *46*, 26-43.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, *53*, 109-132.
- Eisenberg, J. (2004). To cheat or not to cheat: Effects of moral perspective and situational variables on students' attitudes. *Journal of Moral Education*, *33*(2), 163-178.
- Elliot, A. J. (1994). *Approach and avoidance achievement goals: An intrinsic motivation analysis*. Unpublished doctoral dissertation, University of Wisconsin-Madison.
- Elliot, A. J. (1997). Integrating the “classic” and “contemporary” approaches to achievement motivation: A hierarchical model of achievement motivation. In M. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 243-279). Greenwich, CT: JAI.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*, 149-169.
- Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, *30*, 111-116.
- Elliot, A. J. (2005). A conceptual history of the achievement goal construct. In A.J. Elliot & C.S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 52-72). New York: Guilford.

- Elliot, A. J., & Church, M. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 72, 218-232.
- Elliot, A. J., & Fryer, J. W. (2007). The goal concept in psychology. In J. Shah & W. Gardner (Eds.), *Handbook of motivational science* (pp. 235-250). New York: Guilford.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 70, 968-980.
- Elliot, A. J., & McGregor, H. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 76, 628-644.
- Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: Approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology*, 82(5), 804-818.
- Elliot, A. J., & Thrash, T. M. (2004). The intergenerational transmission of fear of failure. *Personality and Social Psychology Bulletin*, 30, 957-971.
- Epps, P., & Parnell, R.W. (1952). Physique and temperament of women delinquents as compared with women undergraduates. *British Journal of Medical Psychology*, 25, 249-255.
- Erskine, T. (2003). *Can institutions have responsibilities?: Collective moral agency and international relations*. New York: Palgrave Macmillan.

- Evans, E. D., & Craig, D. (1990). Teacher and student perceptions of academic cheating in middle and senior high schools. *Journal of Educational Research, 84*, 44-52.
- Eysenck, H. J. (1961). The effects of psychotherapy. In H.J. Eysenck (Ed.), *Handbook of abnormal psychology: An experimental approach* (pp. 697-725). New York: Basic Books.
- Eysenck, H. J. (1967). *The biological basis of personality*. Springfield, IL: Thomas.
- Feather, N. T. (1982). Actions in relation to expected consequences: An overview of a research program. In N. T. Feather (Ed.), *Expectations and actions: Expectancy-value models in psychology* (pp. 53-95). Hillsdale, NJ: Erlbaum.
- Finn, K. V., & Frone, M. R. (2004). Academic performance and cheating: Moderating role of school identification and self-efficacy. *Journal of Educational Research, 97*, 115-122.
- Fishbein, H. D. (1976). *Evolution, development, and children's learning*. Santa Monica, CA: Goodyear.
- Fitch, J. H. (1962). Two personality variables and their distribution in a criminal population: An empirical study. *British Journal of Social and Clinical Psychology, 1*, 161-167.
- Folwes, D. C. (1980). The three arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity, and psychopathy. *Psychophysiology, 17*, 87-104.
- Fowles, D. C. (1987). Application of a behavioral theory of motivation to the concepts of anxiety and impulsivity. *Journal of Research in Personality, 21*, 417-35.

- Frey, B. B., Petersen, S., Edwards, L. M., Pedrotti, J. T., & Peyton, V. (2005). Item-writing rules: Collective wisdom. *Teaching and Teacher Education, 21*(4), 357-364.
- Fries, S., Schmid, S., Dietz, F., & Hofer, M. (2005). Conflicting values and their impact on learning. *European Journal of Psychology of Education, 20*(3), 259-273.
- Furnham, A., Chamorro-Premuzic, T., & McDougall, F. (2003). Personality, cognitive ability, and beliefs about intelligence as predictors of academic performance. *Learning and Individual Differences, 14*, 49-66.
- Garavalia, L., Olson, E., Russell, E., & Christensen, L. (2006). How do students cheat? In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating* (pp. 33-55). San Diego, CA: Academic Press.
- Geary, D. C., & Bjorklund, D. F. (2000). Evolutionary developmental psychology. *Child Development, 71*, 57-65.
- Gibbens, T. C. N. (1962). *Psychiatric studies of Borstal lads*. New York: Oxford University Press.
- Glueck, S., & Glueck, G. (1950). *Unravelling juvenile delinquency*. New York: Commonwealth Fund.
- Goff, M., & Ackerman, P. L. (1992). Personality-intelligence relations: Assessment of typically intellectual engagement. *Journal of Educational Psychology, 84*, 537-552.
- Goldberg, L. R. (1992). The development of markers of the Big Five factor structure. *Psychological Assessment, 4*, 26-42.

- Graham, M. A., Monday, J., O'Brien, K., & Steffan, S. (1994). Cheating at small colleges: An examination of student and faculty attitudes and behaviors. *Journal of College Student Development, 35*(4), 255-260.
- Gray, E. K., & Watson, D. (2002). General and specific traits of personality and their relation to sleep and academic performance. *Journal of Personality, 70*, 177-206.
- Gray, J. A. (1970). The psychophysiological basis of introversion-extraversion. *Behaviour Research and Therapy, 8*, 249-266.
- Gray, J. A. (1987). The neuropsychology of emotion and personality. In S. M. Stahl, S. Iverson, & E. Goodman (Eds.), *Cognitive neurochemistry*. Oxford: Oxford University Press.
- Graziano, W. G., & Hair, E. C., & Finch, J. F. (1997). Competitiveness mediates the link between personality and group performance. *Journal of Personality and Social Psychology, 73*, 1394-1408.
- Grimes, P. (2004). Dishonesty in academics and business: A cross-cultural evaluation of student attitudes. *Journal of Business Ethics, 49*(2), 273-290.
- Gross, M. M. (1946). The effect of certain types of motivation on the "honesty" of children. *Journal of Educational Research, 40*, 133-140.
- Haines, V. J., Diekhoff, G. M., LaBeff, E. E., & Clark, R. E. (1986). College cheating: Immaturity, lack of committment, and the neutralizing attitude. *Research in Higher Education, 25*, 342-354.

- Hard, S. F., Conway, J. M., & Moran, A. C. (2006). Faculty and college student beliefs about the frequency of student academic misconduct. *The Journal of Higher Education, 77*(6), 1058-1080.
- Hardin, C., & Higgins, E. T. (1996). Shared reality: How social verification makes the subjective objective. In R.M. Sorrentino & E.T. Higgins (Eds.), *Handbook of motivation and cognition* (vol. 3; pp: 28-84). New York: Guilford Press.
- Harding, T. S., Carpenter, D. D., Finelli, C. J., & Passow, H. J. (2004). Does academic dishonesty relate to unethical behavior in professional practice? An exploratory study. *Science and Engineering Ethics, 10*(2), 311-326.
- Harp, J., & Taietz, P. (1966). Academic integrity and social structure: A study of cheating among college students. *Social Problems, 13*(4), 365-373.
- Harris, M. J., & Rosenthal, R. (1985). Mediation of interpersonal expectancy effects: 31 Meta-analyses. *Psychological Bulletin, 97*, 363-386.
- Hartshorne, H., & May, M. A. (1928). *Studies in deceit*. New York: Macmillan.
- Hebb, D. O. (1955). Drives and the CNS (conceptual nervous system). *Psychological Review, 62*, 243-259.
- Heckhausen, H. (1991). *Motivation and action*. New York: Springer-Verlag.
- Hetherington, E. M., & Feldman, S. E. (1964). College cheating as a function of subject and situational variables. *Journal of Educational Psychology, 55*, 212-218.
- Hidi, S. (1995). A reexamination of the role of attention in learning. *Educational Psychology Review, 7*, 323-350.

- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52(12), 1280-1300.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–46). New York: Academic Press.
- Higgins, E. T. (2000). Social cognition: Learning about what matters in the social world. *European Journal of Social Psychology*, 30(1), 3-39.
- Higgins, E. T. (2005). Value from regulatory fit. *Current Directions in Psychological Science*, 14, 209–213.
- Higgins, E. T., Bond, R. N., Klein, R., & Strauman, T. (1986). Self-discrepancies and emotional vulnerability: How magnitude, accessibility, and type of discrepancy influence affect. *Journal of Personality and Social Psychology*, 51, 5-15
- Higgins, E. T., Friedman, R. S., Harlow, R. E., Chen-Idson, L., Ayduk, O. N., & Taylor, A. (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology*, 31(1), 3-23.
- Higgins, E. T., & Kruglanski, A. W. (Eds.). (1996). *Social psychology: Handbook of basic principles*. New York: Guilford.
- Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, 72, 515- 525.

- Hill, J. P., & Kochendorfer, R. A. (1969). Knowledge of peer success and risk of detection as determinants of cheating. *Developmental Psychology, 1*(3), 231-238.
- Hoff, A. G. (1940). A study of the honesty and accuracy found in pupil checking of examination papers. *Journal of Educational Research, 34*, 127-129.
- Holmes, M. (1992). Moral education: emancipation and tradition. *Curriculum Inquiry, 22*(4), 339-344.
- Jackson, C. J., Levine, S. Z., Furham, A., & Burr, N. (2002). Predictors of cheating behavior at a university: A lesson from the psychology of work. *Journal of Applied Social Psychology, 32*(5), 1031-1046.
- Jendreck, M. P. (1992). Students' reactions to student cheating. *Journal of College Student Development, 33*, 260-273.
- Jensen-Campbell, L.A., & Graziano, W.C. (2005). The two faces of temptation: Differing motives for self-control. *Merrill-Palmer Quarterly, 51*(3), 287-314.
- John, O. P. (1990). The big-five factor taxonomy: Dimensions of personality in the natural language and questionnaires. In L.A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 66-100). New York: Guilford.
- Johnson, C. D., & Gormly, J. (1971). Achievement, sociability and task importance in relation to academic cheating. *Psychological Reports, 28*, 302.
- Johnson, S. A., & Martin, M. (2005). Academic dishonesty: A new twist to an old problem. *Athletic Therapy Today, 10*(4), 48-50.

- Jordan, A. E. (2001). College student cheating: The role of motivation, perceived norms, attitudes, and knowledge of institutional policy. *Ethics & Behavior, 11*(3), 233-247.
- Kagan, D. (2005). Human morality and temperament. In G. Carlo & C.P. Edwards (Eds.), *Moral motivation through the life span* (pp. 1-32). Lincoln, NE: University of Nebraska Press.
- Kammrath, L. K., Mendoza-Denton, R., & Mischel, W. (2005). Incorporating if...then...personality signatures in person perception: Beyond the person-situation dichotomy. *Journal of Personality and Social Psychology, 88*(4), 605-618.
- Karabenick, S. A., & Knapp, J. R. (1991). Relationship of academic help seeking to the use of learning strategies and other achievement behavior in college students. *Journal of Educational Psychology, 83*, 221-230.
- Kelly, J. A., & Worrell, L. (1978). Personality characteristics, parent behaviors, and sex of the subject in relation to cheating. *Journal of Research in Personality, 12*, 179-188.
- Keehn, J. D. (1956). Unrealistic reporting as a function of extraverted neuroses. *Journal of Clinical Psychology, 12*, 61-63.
- Keith-Spiegel, P., Tabachnik, B. G., Whitley, B. E., Jr., & Washburn, J. (1998). Why professors ignore cheating: Opinions of a national sample of psychology instructors. *Ethics & Behavior, 8*, 215-227.

- Kerkvliet, J. (1994). Cheating by economics students: A comparison of survey results. *Journal of Economic Education, 25*, 121-133.
- Kerkvliet, J., & Sigmund, C. L. (1999). Can we control cheating in the classroom? *The Journal of Economic Education, 30*(4), 331-343.
- Kibler, W. L., & Paterson, B. G. (1988). Strategies to prevent academic dishonesty. In W.L. Kibler, E.M. Nuss, B.G. Paterson, & G. Pavela (Eds.), *Academic integrity and student development: Legal issues and policy perspectives* (pp. 19-36).
- Kohlberg, L. (1985). The just community approach to moral education in theory and practice. In W. Berkowitz & F. Oser (Eds.), *Moral education: theory and application* (pp. 27-88). Hillsdale, NJ: Erlbaum.
- Koljatic, M., & Silva, M. (2002). Comparison of students' and faculty's perceptions of occurrence of dishonest academic behaviors. *Psychological Reports, 90*, 883-888.
- Kunda, Z. (1999). *Social cognition: Making sense of people*. Cambridge, MA: The MIT Press.
- LaBeff, E. E., Clark, R. E., Haines, V. J., & Diekhoff, G. M. (1990). Situational ethics and college student cheating. *Sociological Inquiry, 60*(2), 190-199.
- Lawson, R. A. (2004). Is classroom cheating related to business students' propensity to cheat in the "real world"? *Journal of Business Ethics, 49*(2), 189-199.
- Leveque, K. L., & Walker, R. E. (1970). Correlates of high school cheating behavior. *Psychology in the Schools, 7*(2), 159-163.
- Levine, J. M., Resnick, L. B., & Higgins, E. T. (1993). Social foundations of cognition. *Annual Review of Psychology, 44*, 585-612.

- Lewis, M., & Haviland-Jones, J. (2000). *Handbook of emotions* (2nd ed.). New York: Guilford.
- Lievens, D., Coestier, P., De Fruyt, F., & De Maeseneer, J. (2002). Medical students' personality characteristics and academic performance: A five-factor model perspective. *Medical Education, 36*, 1050-1056.
- Linnenbrink, E. A., & Pintrich, P. R. (2002). Achievement goal theory and affect: An asymmetrical bidirectional model. *Educational Psychologist, 37*, 69-78.
- Lobel, T. E., & Levanon, I. (1988). Self-esteem, need of approval, and cheating behavior in children. *Journal of Educational Psychology, 80*, 122-123.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology, 83*, 854-864.
- Lonky, E., Kaus, C. R., & Roodin, P. A. (1984). Life experience and mode of coping: Relation to moral judgment in adulthood. *Developmental Psychology, 20*, 1159-1167.
- Lucas, G. M., & Friedrich, J. (2005). Individual differences in workplace deviance and integrity as predictors of academic dishonesty. *Ethics & Behavior, 15*(1), 15-35.
- Lueger, R. J. (1980). Person and situation factors influencing transgression in behavior-problem adolescents. *Journal of Abnormal Psychology, 89*(3), 453-458.
- Lyon, C., Barrett, R., & Malcolm, J. (2006). Plagiarism is easy, but also easy to detect. *Plagiary: Cross-disciplinary studies in plagiarism, fabrication, and falsification, 57-65*.

MacIntyre, A. (1981). *After virtue: a study in moral theory*. London: Gerald Duckworth.

Martins, S. S., Tavares, H., da Silva-Lobo, D., Galetti, A., & Gentil, V. (2004).

Pathological gambling, gender, and risk-taking behaviors. *Addictive Behaviors*, 29, 1231-1235.

Mascolo, M., & Fischer, K. (1995). Developmental transformations in appraisals for pride, shame, and guilt. In J. P. Tangney & K. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. 64-113). New York: Guilford.

McCabe, D. L. (1992). The influence of situational ethics on cheating among college students. *Sociological Inquiry*, 62(3), 365-375.

McCabe, D. L. (2001). Cheating: Why students do it and how we can help them stop. *American Educator*, 25(4), 38-43.

McCabe, D. L. (2005, June). "CAI research." The Center for Academic Integrity.

Retrieved September, 4, 2007 from [www.academicintegrity.org/cai\\_research.asp](http://www.academicintegrity.org/cai_research.asp).

McCabe, D. L., & Bowers, W. J. (1994). Academic dishonesty among males in college: A thirty year perspective. *Journal of College Student Development*, 35(1), 5-10.

McCabe, D. L., & Treviño, L. K. (1993). Academic dishonesty: Honor codes and other contextual influences. *Journal of Higher Education*, 64(5), 522-538.

McCabe, D. L., & Treviño, L. K. (1995). Cheating among business students: A challenge for business leaders and educators. *Journal of Management Education*, 19(2), 205-218.

- McCabe, D. L., & Treviño, L. K. (1997). Individual and contextual influences on academic dishonesty: A multicampus investigation. *Research in Higher Education, 38*, 379-396.
- McCabe, D. L., Treviño, L. K., & Butterfield, K. D. (1999). Academic integrity in honor code and non-honor code environments: A qualitative investigation. *Journal of Higher Education, 70*(2), 211-234.
- McCabe, D. L., Treviño, L. K., & Butterfield, K. D. (2001a). Cheating in academic institutions: A decade of research. *Ethics & Behavior, 11*(3), 219-232.
- McCabe, D. L., Treviño, L. K., & Butterfield, K. D. (2001b). Dishonesty in academic environments. *Journal of Higher Education, 72*(1), 29-45.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. New York: Apple-Century-Crofts.
- McCloy, C. H. (1936). A factor analysis of personality traits to underlie character education. *Journal of Educational Psychology, 27*, 375-387.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the Five-Factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81-90.
- McCrae, R. R., & Costa, P. T., Jr. (1997). Personality trait structure as a human universal. *American Psychologist, 52*(5), 509-516.
- McGregor, J. H., & Streitenberger, D. C. (1998). Do scribes learn? Copying and information use. *SLMQ On-line*. [[www.ala.org/aasl/SLMQ/scribes.html](http://www.ala.org/aasl/SLMQ/scribes.html)]

- McQueen, R. (1957). Examination deception as a function of residual, background, and immediate stimulus factors. *Journal of Personality, 25*, 643-650.
- Mealey, L., Daood, C., & Krage, M. (1996). Enhanced memory for faces of cheaters. *Ethology and Sociobiology, 17*, 119-128.
- Meece, J., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its consequences for young adolescents' course enrollment intentions and performances in mathematics. *Journal of Educational Psychology, 82*, 60-70.
- Metfessel, M., & Lovell, C. (1942). Recent literature on individual correlates of crime. *Psychological Bulletin, 39*(3), 133-164.
- Meyer, D. K., & Turner, J. C. (2006). Re-conceptualizing emotion and motivation to learn in classroom contexts. *Educational Psychology Review, 18*, 377-390.
- Michaels, J. W., & Miethe, T. D. (1989). Applying theories of deviance to academic cheating. *Social Science Quarterly, 70*, 870-885.
- Middleton, G., Jr., & Guthrie, G. M. (1959). Personality syndromes and academic achievement. *Journal of Educational Psychology, 50*, 66-69.
- Middleton, M., & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology, 89*, 710-718.
- Midgley, C. (Ed.). (2002). *Goals, goal structures, and patterns of adaptive learning*. Mahwah, NJ: Lawrence Erlbaum.

- Miller, A. D., Murdock, T. B., Anderman, E. M., & Poindexter, A. L. (2006). Who are all these cheaters? Characteristics of academically dishonest students. In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating* (pp. 9-32). San Diego, CA: Academic Press.
- Miller, G. F. (2007). Sexual selection for moral virtues. *The Quarterly Review of Biology*, 82(2), 97-125.
- Millham, J. (1974). Two components of need for approval score and their relationship to cheating following success and failure. *Journal of Research in Personality*, 8, 378-392.
- Mischel, W., & Gilligan, C. (1964). Delay of gratification, motivation for the prohibited gratification, and responses to temptation. *Journal of Abnormal and Social Psychology*, 69(4), 411-417.
- Mischel, W., Shoda, Y., & Smith, R.E. (2004). *Introduction to personality: Toward an integration* (7th ed.). Hoboken, NJ: Wiley.
- Moake, S. (2004, September 15). Cheaters abuse flexibility of Blackboard interface at BYU. *The Daily Universe*, Retrieved on September 29, 2007, from <http://www.lexisnexis.com>.
- Murdock, T. B., & Anderman, E. M. (2006). Motivational perspectives on student cheating: Toward an integrated model of academic dishonesty. *Educational Psychologist*, 41(3), 129-145.

- Murdock, T. B., Hale, N. M., & Weber, M. (2001). Predictors of cheating among early adolescents: Academic and social motivations. *Contemporary Educational Psychology* 26, 96–115.
- Murdock, T. B., Miller, A., & Kohlhardt, J. (2004). Effects of classroom context variables on high school students' judgments of the acceptability and likelihood of cheating. *Journal of Educational Psychology*, 96(4), 765–777.
- Nathanson, C., Paulhus, D.L., & Williams, K.M. (2006). Predictors of a behavioral measure of scholastic cheating: Personality and competence but not demographics. *Contemporary Educational Psychology*, 31, 97-122.
- Newman, J. (1987). Reaction to punishment in extraverts and psychopaths: Implications for the impulsive behavior of disinhibited individuals. *Journal of Research in Personality*, 21, 464–480.
- Newstead, S. E., Franklyn-Stokes, A., & Armstead, P. (1996). Individual differences in student cheating. *Journal of Educational Psychology*, 88, 229-241.
- Ng, H. W. W., Davies, G., Bates, I., & Avellone, M. (2003). Academic dishonesty among pharmacy students. *Pharmacy Education*, 3(4), 261-269.
- Nicholls, J. G., Patashnick, M., Cheung, P., Thorkildsen, T., & Lauer, J. (1989). Can achievement motivation succeed with only one conception of success? In F. Halisch & J. Van den Beroken (Eds.), *Competence considered* (pp. 187-204). Lisse, The Netherlands: Swets & Zeitlinger.

- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66*, 574-583.
- Nonis, S., & Swift, C.O. (2001). An examination of the relationship between academic dishonesty and workplace dishonesty: A multicampus investigation. *Journal of Education for Business, 77*(2), 69-77.
- Norton, L. S., Tilley, A. J., Newstead, S. E., & Frankyn-Stokes, A. (2001). The pressures of assessment un undergraduate courses and their effect on student behaviors. *Assessment and Education, 26*, 268-284.
- Nowell, C., & Laufer, D. (1997). Undergraduate student cheating in the fields of business and economics. *Journal of Economic Education, 28*(1), 3-12.
- Oakland, J. A. (1969). Measurement of personality correlates of academic achievement in high school students. *Journal of Counseling Psychology, 16*, 452-457.
- Owasso Independent School District No. I-011 v. Falvo (No. 001073). U.S. Supreme Court, February 19, 2002.
- Parr, F. W. (1936). The problem of student honesty. *Journal of Higher Education, 7*(6), 318-326.
- Patrick, H., Anderman, L. H., Ryan, A. M., Edelin, K., & Midgley, C. (2001). Teachers' communication of goal orientations in four fifth-grade classrooms. *Elementary School Journal, 102*, 35-58.

- Patrick, J., Turner, J. C., Meyer, D. K., & Midgley, C. (2003). How teachers establish psychological environments during the first days of school: Associations with avoidance in mathematics. *Teachers College Record, 105*, 1521–1558.
- Peterson, C., & Park, N. (2007). Explanatory style and emotion regulation. In J. J. Gross (Ed.) *Handbook of emotion regulation* (pp. 159-179). New York: Guilford.
- Petress, K. C. (2003). Academic dishonesty: A plague on our profession. *Education, 123*(3), 624-627.
- Peyser, M. (1992, January 6). A cheater's guide to high marks (and big \$). *Newsweek*, p. 45.
- Phillips, P., Abraham, C., & Bond, R. (2003). Personality, cognition, and university students' examination performance. *European Journal of Personality, 17*, 435-448.
- Pierson, G. R., & Kelley, R. F. (1963). Anxiety, extraversion, and personality idiosyncrasy in delinquency. *Journal of Psychology, 56*, 441-445.
- Pincus, H. S., & Schmelkin, L. P. (2003). Faculty perceptions of academic dishonesty: A multidimensional scaling analysis. *Journal of Higher Education, 74*(2), 196–209.
- Plaks, J. E., Shafer, J. L., & Shoda, Y. (2003). Perceiving people as coherent: How do perceivers make sense of variable behavior? *Social Cognition, 21*, 26-60.
- Rakovski, C. C., & Levy, E. S. (2007). Academic dishonesty: Perceptions of business students. *College Student Journal, 41*(2), 466-481.

- Rettinger, D. A., Jordan, A. E., & Peschiera, F. (2004). Evaluating the motivation of other students to cheat: A vignette experiment. *Research in Higher Education, 45*(8), 873-890.
- Roig, M., & DeTommaso, L. (1995). Are college cheating and plagiarism related to academic procrastination? *Psychological Reports, 77*, 691-698.
- Rosenhan, D. L., Moore, B. S., & Underwood, B. (1976). The social psychology of moral behavior. In T. Lickona (Ed.), *Moral development and behavior* (pp. 241-252). New York: Holt, Rinehart & Winston.
- Roskens, R. W., & Dizney, H. F. (1966). A study of unethical behavior in high school and college. *Journal of Educational Research, 59*, 321-324.
- Ross, L., Green, D., & House, P. (1977). The “false consensus effect”: An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13*, 279–303.
- Rost, D. H., & Wild, K. P. (1994). Cheating and achievement-avoidance at school: Components and assessment. *British Journal of Educational Psychology, 64*(1), 119-132.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6<sup>th</sup> ed., pp. 99-166). New York: Wiley.
- Rothbart, M. K., & Hwang, J. (2006). Temperament and the development of competence and motivation. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 167-184). New York: Guilford.

- Rothbart, M. K., & Sheese, B. E. (2007). Temperament and emotion regulation. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 331-350). New York: Guilford.
- Ryan, A. M., Hicks, L., & Midgley, C. (1997). Social goals, academic goals, and avoiding seeking help in the classroom. *Journal of Early Adolescence, 17*, 152–171.
- Ryan, A. M., & Pintrich, P. R. (1997). Should I ask for help?: The role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology, 89*, 329–341.
- Ryan, A. M., Pintrich, P. R., & Midgley, C. (2001). Avoiding seeking help in the classroom: Who and why? *Educational Psychology Review, 13*(2), 93-114.
- Schab, S. (1969). Cheating in high school: Differences between the sexes. *Journal of the National Association of Women Deans and Counselors, 33*(1), 39-42.
- Schmidt, C. R. (1999). *Passive cheating in college students*. Unpublished manuscript. Kansas Wesleyan University.
- Schmit, M. J., & Ryan, A. M. (1993). The Big Five in personnel selection: Factor structure in applicant and nonapplicant populations. *Journal of Applied Psychology, 78*, 966-974.
- Schneider, A. (1999). Why professors don't do more to stop students who cheat. *Chronicle of Higher Education, 45*(20), A8-A10.
- Schraw, G., Flowerday, T., & Lehman, S. (2001). Promoting situational interest in the classroom. *Educational Psychology Review, 13*, 211-224.

- Schraw, G., & Lehman, S. (2001). Situational interest: A review of the literature and directions for future research. *Educational Psychology Review, 13*, 23-52.
- Schraw, G., Olafson, L., Kuch, F., Lehman, T., Lehman, S., & McCrudden, M.T. (2006). Interest and academic cheating. In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating* (pp. 59-77). San Diego, CA: Academic Press.
- Schunk, D. H., & Pajares, F. (2005). Competence perceptions and academic functioning. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 85-104). New York: Guilford.
- Schultheiss, O. C., & Brunstein, J. C. (2005). An implicit motive perspective on competence. In A.J. Elliot & C.S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 31- 51). New York: Guilford.
- Schwartz, S. H., Feldman, K. A., Brown, M. E., & Heingartner, A. (1969). Some personality correlates of conduct in two situations of moral conflict. *Journal of Personality, 37*(1), 41-57.
- Scott, D. (2002). *Realism and educational research: New perspectives and possibilities*. New York: Routledge-Falmer.
- Scott, L., & O'Hara, M. W. (1993). Self-discrepancies in clinically anxious and depressed university students. *Journal of Abnormal Psychology, 102*, 282-287.
- Shah, J., & Higgins, E. T. (1997). *Emotional evaluations of self and other attitude objects: Distinct sensitivities from regulatory focus*. Unpublished manuscript.

- Shah, J., Higgins, E. T., & Friedman, R. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology, 74*(2), 285-293.
- Siegmán, A. W. (1952). Personality variables associated with admitted criminal behavior. *Journal of Consulting Psychology, 26*, 199.
- Sierles, F. S., Hendrickx, I., & Circle, S. (1980). Cheating in medical school. *Journal of Medical Education, 55*, 124-125.
- Sierles, F. S., Kushner, B. D., & Krause, P. B. (1988). A controlled experiment with a medical student honor system. *Journal of Medical Education, 63*(9), 705-713.
- Sierra, J. J., & Hyman, M. R. (2006). A dual-process model of cheating intentions. *Journal of Marketing Education, 28*, 193-204.
- Singh, U. P., & Akhtar, S. N. (1972). Personality variables and cheating in examinations. *Indian Journal of Social Work, 32*(4), 423-428.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571-581.
- Smith, C. P., Ryan, E. R., & Diggins, D. R. (1972). Moral decision making: Cheating on examinations. *Journal of Personality, 40*(4), 640-660.
- Smith, D. L. (2004). *Why we lie: The evolutionary roots of deception and the unconscious mind*. New York: St. Martin's Press.

- Smith, R., Webster, J., Parrott, W., & Eyre, H. (2002). The role of public exposure in moral and nonmoral shame and guilt. *Journal of Personality and Social Psychology, 83*, 138-159.
- Stannord, C. I., & Bowers, W. J. (1970). The college fraternity as an opportunity structure for meeting academic demands. *Social Problems, 17*, 371-390.
- Steininger, M., Johnson, R. E., & Kirts, D. K. (1964). Cheating on college examinations as a function of situationally aroused anxiety and hostility. *Journal of Educational Psychology, 55*(6), 317-324.
- Stephens, J. M., & Gehlbach, H. (2006). Under pressure and underengaged: Motivational profiles and academic cheating in high school. In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating* (pp. 107-139). San Diego, CA: Academic Press.
- Stephens, J. M., & Roeser, R. W. (2003, April 25). *Quantity of motivation and qualities of classrooms: A person-centered comparative analysis of cheating in high school*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Stephenson, G. M., & Barker, J. (1972). Personality and the pursuit of distributive justice: An experimental study of children's moral behavior. *British Journal of Social and Clinical Psychology, 11*(3), 207-219.
- Stevens, G. E., & Stevens, F. W. (1987). Ethical inclinations of tomorrow's managers revisited: How and why students cheat. *Journal of Education for Business, 63*, 24-29.

- Storch, E. A., & Storch, J. B. (2002). Fraternities, sororities, and academic cheating. *College Student Journal, 36*(2), 427.
- Strauman, T. J. (1989). Self-discrepancies in clinical depression and social phobia: Cognitive structures that underlie emotional disorders? *Journal of Abnormal Psychology, 98*, 14-22.
- Strauman, T. J. (1990). Self-guides and emotionally significant childhood memories: A study of retrieval efficiency and incidental negative emotional content. *Journal of Personality and Social Psychology, 59*, 869-880.
- Strauman, T. J., & Higgins, E. T. (1987). Automatic activation of self-discrepancies and emotional syndromes: When cognitive structures influence affect. *Journal of Personality and Social Psychology, 53*, 1004-1014.
- Strauman, T. J., & Higgins, E. T. (1988). Self-discrepancies as predictors of vulnerability to distinct syndromes of chronic emotional distress. *Journal of Personality, 56*, 685-707.
- Sullivan, H. W., Worth, K. A., Baldwin, A. S., & Rothman, A. J. (2006). The effect of approach and avoidance referents on academic outcomes: A test of competing predictions. *Motivation and Emotion, 30*, 157-164.
- Sutton, E. M., & Huba, M. E. (1995). Undergraduate student perceptions of academic dishonesty as a function of ethnicity and religious participation. *NASPA Journal, 33*(1), 19-34.

- Szabo, A., & Underwood, J. (2004). Cybercheats: Is information and communication technology fuelling academic dishonesty? *Learning and Teaching in Higher Education, 5*, 180-199.
- Tangney, J. P. (2002). Self-conscious emotions: The self as a moral guide. In A. Tesser & D. Stapel (Eds.), *Self and motivation: Emerging psychological perspectives* (pp. 97-117). Washington, DC: APA.
- Taylor, S. P., & Lewit, D. W. (1966). Social comparison and deception regarding ability. *Journal of Personality, 34*(1), 94-104.
- Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A.H. Tuma & J.D. Mason (Eds.), *Anxiety and the anxiety disorders*. Hillsdale, NJ: Erlbaum.
- Tellegen, A., Lykken, D.T., Bouchard, T.J., Wilcox, K.J., Segal, N.L., & Rich, S. (1988). Personality similarity in twins reared apart and together. *Journal of Personality and Social Psychology, 54*, 1031-1039.
- Tellegen, A., & Waller, N. G. (1997). Exploring personality through test construction: Development of the multidimensional personality questionnaire. In S. Briggs & J. Cheek (Eds.), *Personality measures: Development and evaluation, vol. 1*. Greenwich, CT: JAI Press.
- Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology, 11*, 375–424.
- Trasler, G. (1962). *The explanation of criminality*. London: Routledge & Kegan Paul.

- Turner, J. C., Thorpe, P., & Meyer, D. K. (1998). Students' reports of motivation and negative affect: A theoretical and empirical analysis. *Journal of Educational Psychology, 90*, 758–771.
- Tuttle, H. S. (1931a). Honesty trends in children. *Journal of Educational Sociology, 5*, 233-239.
- Tuttle, H. S. (1931b). Honesty trends of elementary school children. *Religious Education, 26*, 742-747.
- Urduan, T. (1997). Achievement goal theory: Past results, future directions. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 99–141). Greenwich, CT: JAI.
- Wade, M. J., & Breden, F. (1980). The evolution of cheating and selfish behavior. *Behavioral Ecology and Sociobiology, 7*, 167-172.
- Wajda-Johnston, V. A., Handal, P. J., Brawer, P. A., & Fabricatore, A. N. (2001). Academic dishonesty at the graduate level. *Ethics & Behavior, 11*, 287-305.
- Wallace, J., & Newman, J. (1990). Differential effects of reward and punishment cues on response speed in anxious and impulsive individuals. *Personality and Individual Differences, 10*, 999–1009.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465–90.
- Watson, D., Clark, L. A. (1993). *Manual for the positive and negative affect schedule – expanded form*. (Unpublished manuscript).

- Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20, 158-177.
- Webb, E. (1915). *Character and intelligence: An attempt at an exact study of character*. Cambridge: Cambridge University Press.
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89, 411-419.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90, 202-209.
- White, W. F., Zielonka, A. W., & Gajer, E. L. (1967). Personality correlates of cheating among college women under stress of independent-opportunistic behavior. *Journal of Educational Research*, 61(2), 68-70.
- Whitley, B. E., Jr. (1998). Factors associated with cheating among college students: A review. *Research in Higher Education*, 39, 235-274.
- Whitley, B. E., Jr., & Kost, C. R. (1999). College students' perceptions of peers who cheat. *Journal of Applied Social Psychology*, 29(8), 1732-1760.
- Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review*, 12, 265-310.
- Wolfe, R. N., & Johnson, S. D. (1995). Personality as a predictor of college performance. *Educational and Psychological Measurement*, 55, 177-185.
- Wynne, E., & Ryan, K. (1993). *Reclaiming our schools: a handbook on teaching character, academics, and discipline*. New York: Macmillan.

- Yeo, S. (2007). First-year university science and engineering students' understanding of plagiarism. *Higher Education Research and Development*, 26(2), 199–216.
- Zimmerman, J. (1999). Academic dishonesty attitudes and self-reported behaviors in a university population. *Dissertation Abstracts International*, 59, 4083.
- Zuckerman, M. (1983). A biological theory of sensation seeking. In M. Zuckerman (Ed.), *Biological bases of sensation seeking, impulsivity, and anxiety* (pp. 37-76). Hillsdale, NJ: Erlbaum.