An Exploration of Multidimensional Perfectionism, Academic Self-Efficacy, Procrastination Frequency, and Asian American Cultural Values In Asian American University Students

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

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2009

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Abstract

Since the 1980s, the academic achievements of Asian American students have been presented as evidence that this group represents a “model minority” whose hard work and dedication set an example that should be followed by other racial/ethnic minority groups. A prevalent explanation for their educational successes highlights the influence of Asian American cultural values; however, this theory obscures considerable ethnic diversity within this group and differences in educational attainment and achievement. In order to provide a more balanced understanding of the educational experiences of Asian American students, it is important to explore other variables related to academic functioning and their associations with Asian American values. The current study examined cultural values in relation to other variables related to academic functioning and achievement: multidimensional perfectionism, academic self-efficacy, and procrastination.

Measures of multidimensional perfectionism, academic self-efficacy, academic procrastination, Asian American cultural values, and social desirability were administered to 316 self-identified Asian or Asian American students in a large Midwestern university. Although the study of perfectionism has expanded this construct’s conceptualization to encompass both positive and negative qualities, few studies have examined the validity of measures of multidimensional perfectionism in diverse samples. Therefore the factor structure and psychometric properties of the Almost
Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) were assessed, and results of this study provide empirical support for the use of the APS-R and its subscales in research on perfectionism in Asian American students. Furthermore, cluster analysis was used to classify participants as adaptive perfectionists, maladaptive perfectionists, or non-perfectionists based on their level of personal standards and concerns about their performance not meeting their expectations. One-way analysis of variance among the groups found that types of perfectionists differed in their confidence in their capabilities to successfully perform academic tasks, self-reported frequency of procrastination, and endorsement of Asian American cultural values. Adaptive perfectionists reported less frequent procrastination, greater confidence in their abilities to master academic tasks, and lower endorsement of Asian American cultural values. In contrast, maladaptive perfectionists indicated that they had less confidence in their abilities to successfully perform academic tasks, were more likely to delay initiation or completion of such tasks, and reported higher adherence to Asian American cultural values.

These results provide support for the conceptualization of perfectionism as a multifaceted construct with both positive and negative qualities and suggest that cultural values are related to one’s expectations and standards for performance. By examining variations in participants’ perfectionism, academic self-efficacy, procrastination frequency, and adherence to Asian American cultural values, this study highlights individual differences within this group and provides evidence that the model minority image is a stereotype that does not apply to all Asian American students.
These results are discussed in detail herein. Implications of the findings along with the limitations of the study are presented. Recommendations of future research are also described.
Dedication

This work is dedicated to Tone.
Acknowledgements

I wish to give my thanks and appreciation to my advisor, Pam Highlen. Her encouragement and guidance have sustained me throughout graduation school and the dissertation-writing process.

I am extremely grateful to my parents for their unfailing support and encouragement, especially during times when I doubted myself and my abilities to succeed in graduate school. They have communicated their love and confidence in me through words and gestures, and I have so much appreciation for all that they have done and continue to do for me.

I am thankful for all of the amazing people I encountered during my internship at the University of Texas who provided their guidance, support, and encouragement. I am especially grateful to Mark Zentner and Greg Keilin for challenging me to take risks and approach, rather than avoid, difficult situations. Thank you for pushing me to grow not only as a professional, but as a person.

I thank Dr. Michael Mahometa for his statistics prowess and guidance through the data analysis process. He tolerated countless meetings and questions with patience and good humor, and without his assistance I would not have been able to complete this dissertation.
Finally, I am grateful to my husband, who has been my best friend, cheering section, sounding board, personal assistant, and more. Thank you for your love and patience, especially through the difficult times we endured this past year. My ability to successfully complete this dissertation, internship, and graduate school is a reflection of your unwavering support and faith in me.
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CHAPTER 1

Introduction


Standardized test results and educational attainment statistics lend support to the image of Asian American students as high achieving. Data from the 2008 Scholastic
Aptitude Test (SAT) indicate that test-takers who identified as Asian, Asian American, or Pacific Islander had mean scores on the critical reading, mathematics, and writing portions of the exam that were higher than the overall mean scores for all test-takers combined, regardless of ethnicity. This group of students had the highest mean scores on the mathematics portion (581) in comparison to White (537), American Indian or Alaskan Native (491), Black or African American (426), Mexican or Mexican American (463), Puerto Rican (453), or Other Hispanic, Latino, or Latin American (461) test-takers. Additionally, although White test-takers had the highest mean scores on critical reading (528) and writing (518), these scores were closely followed by those of Asian, Asian American, and Pacific Islander test-takers (513 and 516, respectively; College Board, 2008).

Furthermore, Asian American students are overrepresented in higher education. Results of the 2007 U.S. census indicated that non-Hispanic Whites reported the highest percentage of adults with at least a high school diploma (89%) compared to Asians (85.8%), Blacks (80.1%), and Hispanics (60.6%). However, compared to all other racial groups, Asians reported the highest percentage of individuals with undergraduate and graduate education. Sixty-eight percent of Asians reported having at least some college experience, 49% reported having a bachelor's degree or more education, and 20% reported holding an advanced degree (U.S. Bureau of the Census, 2008). In comparison, 59% of non-Hispanic Whites reported having some college education, 39% reported having at least a bachelor's degree, and 11% held an advanced degree. Approximately 46% of Blacks and 32% of Hispanics reported having some college education, 17% of
Blacks and 12% of Hispanics held at least a bachelor's degree, and 6% of Blacks and 4% of Hispanics held an advanced degree.

Numerous hypotheses and arguments have been presented in an attempt to account for these differential achievement patterns and the relative educational success of Asian American students. Early theories suggested that genetic differences in intelligence or cognitive functioning were responsible for the variance in achievement scores among racial/ethnic groups (Fong, 2002). Such arguments contended that Asian Americans were genetically superior in intelligence compared to other groups, resulting in higher scores on intelligence and achievement tests. Due to lack of sound empirical support, such arguments have been rejected in favor of theories that emphasize the influence of cultural values that prioritize education, hard work, and a sense of obligation to family (Fong, 2002; Sue & Okazaki, 1990).

A significant body of empirical evidence suggests that Asian cultural values have a significant influence on the academic behavior of Asian American students. Researchers argue that Asian cultural values emphasizing the importance of learning and educational attainment influence Asian American parents' expectations for their children and their parenting behavior (Schneider & Lee, 1990; Steinberg, Dornbusch, & Brown, 1992). Asian American parents have demonstrated that they hold higher educational expectations and aspirations for their children compared to parents from other racial/ethnic groups (Peng & Wright, 1994; Schneider & Lee, 1990). They are more likely to expect their children to pursue undergraduate and graduate degrees (Kao, 1995), achieve higher grades and test scores (Steinberg et al., 1992), and devote more time to studying and doing homework (Schneider & Lee, 1990). Asian American parents have
also expressed their commitment to their children's educational attainment by taking time to teach children basic reading, writing, and mathematical skills prior to entering school (Schneider & Lee, 1990); paying from private lessons in music, language, and computer science (Schneider & Lee, 1990); and committing funds to pay for future educational pursuits (Kao, 1995).

Although interviews with students, data from standardized test scores, and educational attainment statistics support the image of Asian American students as "superachievers," this information is in danger of reinforcing the "model minority" stereotype of Asian Americans as the smart, hard-working, successful minority group that should be emulated by other racial or ethnic minority groups. Although the model minority stereotype emphasizes the educational and occupational achievements of Asian Americans, it obscures the diversity of their histories and experiences and the reality that many individuals do not conform to this image (Zia, 2001). Recently, the National Commission on Asian American and Pacific Islander Research in Education released a report debunking many of the popular "fictions" perpetrating the model minority myth. The report includes information on the wide range of Asian American and Pacific Islander (AAPI) standardized test scores, increasing enrollment of AAPI students in two-year community colleges, ethnic diversity within the AAPI population, and differences in immigration history and economic capital among different ethnic groups. The authors emphasize the importance of developing a more balanced understanding of the AAPI experience rather than highlighting only accomplishments and successes. Additionally, they call attention to the need to better understand the psychological consequences of the model minority myth, including the pressure and distress that students may experience as
a result of parents and educators’ expectations that they exemplify the model minority (National Commission on Asian American and Pacific Islander Research in Education, 2008).

Many Asian American students have reported that they are aware of high expectations for their educational success and that these expectations have a significant influence on their academic performance. Students have indicated that they worked hard in school in order to fulfill their parents' expectations for their achievement (Fong, 2002; Okagaki & Bojczyz, 2002). Additionally, Asian American students have indicated that their academic efforts were motivated by a sense of responsibility and/or guilt as a result of sacrifices their parents had made in order to provide them with educational opportunities (e.g., immigrating to the United States; Lee, 1994; Schneider & Lee, 1990). As a result of both internal and external pressure to succeed and fears of not meeting their own and others’ expectations, some students have reported experiencing feelings of anxiety, guilt, shame, and unhappiness (Lee, 1994; Lee & Ying, 2001).

Thus, the drive to achieve in the academic arena seems to have both positive and negative outcomes for Asian American students. While they have achieved much success in their academic endeavors, this success may come at the cost of their psychological well-being. Asian American students’ feelings of anxiety and shame may be the product of their fears of not fulfilling their own or others’ expectations for their academic performance. In this manner, high expectations and standards, while not inherently harmful, may have a detrimental effect on Asian American individuals. While they are motivated to expend effort to perform to the best of their ability in order to meet their
expectations, they may also experience distress if they are at risk of not meeting these expectations.

This study responded to this call for further research on the Asian American experience by exploring associations among several variables that have been related to positive and negative aspects of academic functioning. Although the model minority myth posits that Asian culture values education and places high expectations on Asian American students, it ignores differences in adherence to these values and the potential negative impact on students' functioning. In order to demystify the model minority stereotype and its obfuscation of individual differences, variations in students' expectations, beliefs about their academic capabilities, and tendency to delay academic tasks were examined in addition to associations with cultural values. Specifically, this study examined relationships among perfectionism, academic self-efficacy, procrastination, and Asian American cultural values in Asian American college students.

Perfectionism

Like the model minority myth, perfectionism has both a positive side and a negative side as has been regarded with ambivalence in psychological research. In many areas of human performance and functioning—be it academic, career-related, or interpersonal—the pursuit of excellence is considered a desirable and valuable goal. However, in some instances the drive to excel and do one's best goes to extreme lengths and becomes the pursuit of unattainable perfection. Although perfectionism can be considered a positive trait associated with elevated personal standards and high achievement (Hamachek, 1978; Silverman, 1983), it also has a dark side, one that has been linked with a host of negative behaviors and symptoms such as depression and
anxiety (Rice & Mirzadeh, 2000; Suddarth & Slaney, 2001). How then, is perfectionism to be understood—as a positive quality to be promoted and cultivated, or a negative characteristic to be discouraged? Or is it more accurate to conceptualize perfectionism as a construct possessing both positive and negative qualities?

In order to develop a greater understanding of this multifaceted construct, various researchers have constructed multidimensional definitions of perfectionism that attempt to encompass its many qualities. For instance, Frost, Marten, Lahart, and Rosenblate (1990) described six components of perfectionism: high standards, concern over mistakes, doubts about actions, perception of parental expectations, perception of parental criticism, and emphasis on order and organization. Hewitt and Flett's (1991) definition of perfectionism focused on the interpersonal aspects of the construct and identified three dimensions, which they labeled self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. However, both of these depictions view perfectionism in a pathological light, emphasizing its self-destructive nature. In contrast, other psychologists have given equal attention to perfectionism's more positive and adaptive qualities. Hamachek (1978) distinguished between normal perfectionists and neurotic perfectionists, both types who hold high standards for themselves but differ in their focus and approach to tasks. Based on their clinical experience treating perfectionistic clients, Johnson and Slaney (1996) conceived of perfectionism as a construct involving high personal standards, a sense of order and organization, and discrepancy between one's standards and actual performance. These latter conceptualizations of perfectionism emphasize the positive aspects of perfectionism as in addition to its less desirable qualities.
While the results of numerous studies using these theories and measures of perfectionism have established a knowledge base relevant for identifying and understanding multidimensional perfectionism, these studies have been limited by their use of predominantly Caucasian samples (Slaney, Rice, Mobley, Trippi, & Ashby, 2001). The scarcity of studies examining the concept of perfectionism with racial and ethnic minority participants appears to be a disadvantage of this body of literature and limits generalizations beyond the majority group. Additional research must be conducted that includes more diverse samples and assess the reliability and validity of the existing scales among different ethnic groups. With regard to the Asian American student population, perfectionism may provide a link between Asian cultural values and academic achievement. It may be possible that Asian cultural values are associated with a general pursuit of excellence and the establishment of high standards, a pursuit that may both motivate achievement and cause distress if expectations are not met.

The present study is intended to contribute to the existing literature by examining the validity of a recently developed measure of multidimensional perfectionism and examining the associations with Asian cultural values such as collectivism, conformity, humility, family recognition through achievement, and emotional self-control. Additionally, this study will replicate and extend a study by Yao (2005) utilizing a sample composed of Asian American college students. Using Slaney et al.’s (2001) model and scale of perfectionism, Yao (2005) examined the relationships between multidimensional perfectionism and academic self-efficacy and procrastination.
Procrastination

Procrastination, defined as the needless delay of tasks to the point of subjective distress (Solomon & Rothblum, 1984), has been identified as a factor impacting the academic performance and psychological functioning of students. As with perfectionism, procrastination is regarded with some ambivalence in the psychological literature, part of which stems from the fact that procrastination is a relatively common behavior. Data combined from studies using one measure of procrastination (Lay, 1986) reveal that the scores from more than 2,000 university students are normally distributed, indicating that almost everyone procrastinates to some extent and suggesting that a moderate amount of procrastination is average and can be considered normal (Schouwenburg, 2004). However, several studies (Beswick, Rothblum, & Mann, 1988; Solomon & Rothblum 1984) of procrastination have documented that a significant number of student procrastinators report that their tendencies to delay tasks are problematic and would like to decrease the frequency of their procrastination. Therefore, procrastination is generally conceptualized as a maladaptive behavior pattern, a perspective supported by procrastination's associations with low self-esteem, self-handicapping, depression, and anxiety (Beswick, Rothblum, & Mann, 1988; Effert & Ferrari, 1989; Ferrari 1991; Ferrari, 1994; Rothblum Solomon, & Murakami, 1986; Solomon & Rothblum, 1984).

Several studies have found significant associations between procrastination and perfectionism (Ferrari, 1992; Flett, Blankstein, Hewitt, & Koledin , 1992; Frost et al., 1990; Saddler & Sacks, 1993). It has been hypothesized that perfectionists may engage in more procrastination due to their concern over their ability to create the perfect product (Johnson & Slaney, 1996). Because neurotic perfectionists often set standards for
themselves that are impossible to meet and because they would rather avoid doing
something wrong, they may be more likely to avoid activities that hold the possibility of
negative evaluation (Hamachek, 1978). Procrastination has demonstrated relationships
with various components of Hewitt and Flett's (1991) and Frost et al.'s (1990)
conceptualizations of perfectionism, including correlations with concern over mistakes,
personal standards, organization, and socially prescribed perfectionism (Flett, Blankstein,
Hewitt, & Koledin, 1992; Frost et al., 1990; Saddler & Sacks, 1993). However, no
published studies have examined the relationships among the adaptive and maladaptive
aspects of Slaney et al.'s (2001) model and procrastination. In an unpublished master's
thesis, Yao (2005) reported that adaptive perfectionists indicated that they engaged in less
procrastination compared to non-perfectionists. In contrast, maladaptive perfectionists
reported that they procrastinated more frequently than adaptive perfectionists but less
frequently than non-perfectionists. However, these differences between maladaptive
perfectionists and the other groups were not significant. The current study will expand
upon the existing literature by examining these associations for Asian American students.

Self-Efficacy

Both perfectionism and procrastination have also been studied in association with
the concept of self-efficacy, an individual's beliefs about her or his capabilities to
successfully perform a given task or behavior (Bandura, 1977, 1986). According to
Bandura's (1977) self-efficacy theory, self-efficacy beliefs operate through cognitive,
motivational, affective, and selection processes to regulate how people think, feel,
motivate themselves, and behave. Bandura hypothesized that perceived self-efficacy
influences one's choice of behavior settings and activities, how much effort one will
expend in activities, the quality of one's actual performance, and persistence in the face of obstacles (Bandura, 1977, 1986, 1994). According to studies of perfectionism, individuals who report higher adaptive perfectionism and who hold high standards for themselves but whose sense of self-worth is not contingent on meeting these expectations are likely to have higher self-efficacy. In contrast, maladaptive perfectionists, who are concerned with how they are evaluated by others and the discrepancy between their standards and performance, report lower self-efficacy (Hart, Gilner, Handal, & Gfeller, 1998; LoCicero & Ashby, 2000). However, previous studies that have examined the relationship between perfectionism and self-efficacy have utilized scales measuring general self-efficacy, a practice that does not follow Bandura's (1977) conceptualization of self-efficacy as a domain-specific phenomenon. In order to add to the already existing literature on perfectionism and self-efficacy and to conform to Bandura's theory, the present study utilizes a measure of academic self-efficacy designed to tap individuals' attitudes regarding their capabilities on school-related tasks.

Self-efficacy and procrastination have also been studied in association with each other. According to self-efficacy theory (Bandura, 1977, 1986), individuals who are less confident in their ability to successfully complete tasks will be more likely to avoid those activities rather than approach them. Thus, individuals who report low self-efficacy will be more likely to procrastinate and delay working on tasks, whereas individuals who have higher self-efficacy will be less likely to procrastinate. This relationship between procrastination and self-efficacy seems to be supported in the literature. Negative correlations between the two constructs have been observed in several studies (Ferrari, Parker, & Ware, 1992; Haycock, McCartney, & Skay, 1998). As with perfectionism, the
previous research on procrastination and self-efficacy has used global measures of self-efficacy. In order to provide a clearer understanding of the relationship between procrastination and self-efficacy in a student population, this study examined the associations between procrastination and levels of academic self-efficacy. Yao (2005) used a measure of academic self-efficacy and examined associations between this variable and multidimensional perfectionism and procrastination. The adaptive perfectionists in Yao's study reported higher levels of academic self-efficacy than both maladaptive perfectionists and non-perfectionists. In contrast, maladaptive perfectionists and non-perfectionists reported levels of academic self-efficacy that were lower than those reported by adaptive perfectionists but that were similar to each other.

Although the Yao (2005) study found significant results, several limitations applied, including the fact that the participants included were primarily Caucasian (85% of sample). As a result of this sampling bias, these findings may not generalize well to individuals from different racial or ethnic backgrounds. Thus, although this study contributed to the understanding of perfectionism in an academic setting, the need to determine the applicability of Slaney et al.'s (2001) conceptualization of perfectionism to racial and ethnic minority group members still exists. The present study was designed to examine the construct validity of the Slaney et al. (2001) Almost Perfect Scale–Revised (APS-R) using factor analysis to find support for the three hypothesized factors of the APS-R. Additionally, this study examined relationships among multidimensional perfectionism, procrastination, and academic self-efficacy and compared the APS-R scores for Asian American participants in this sample to the APS-R scores of Caucasian participants in Yao (2005). In order to increase understanding of how perfectionism
dimensions, academic self-efficacy, and procrastination may be impacted by participants' cultural backgrounds, these variables were also be studied in relation to Asian American cultural values to determine any significant patterns. I hypothesized that results of this study would demonstrate support for the validity of the APS-R and that adaptive perfectionism would be associated with higher self-efficacy and lower levels of procrastination, while maladaptive perfectionism would be associated with lower self-efficacy and greater procrastination. Additionally, I proposed that Asian American cultural values would demonstrate different degrees of association with perfectionism dimensions. Furthermore, I hypothesized that Asian American students would demonstrate significant differences in APS-R subscale scores compared to Caucasian students, with Asian American participants reporting higher scores on all dimensions.
CHAPTER 2

Review of the Literature

This section highlights research articles about the four relevant constructs of this study: Asian American academic achievement, perfectionism, procrastination, and academic self-efficacy will be reviewed. Additionally, research focusing on the interactions among these constructs (i.e. perfectionism and procrastination, perfectionism and self-efficacy, procrastination and self-efficacy) is highlighted. Finally, specific hypotheses for this study are proposed.

2.1 Asún Américan Accadmíc Acchíevément Pátnerns

As previously described, objective data from standardized tests scores and educational attainment statistics provide evidence for a pattern of high academic achievement among Asian American students. A number of different theories have been developed to account for the achievement patterns of Asian American students. Early perspectives suggested that there existed genetic differences in cognitive functioning or intelligence levels that contributed to Asian American academic achievement (Vernon, 1982). However, these arguments have lost favor due to lack of empirical support (Fong, 2002). Currently, the most popular theories focus on the influence of Asian American cultural values, particularly values that emphasize the importance of education and hard
work, the need to fulfill family obligations, and respect for elders such as parents and teachers (Fong, 2002; Sue & Okazaki, 1990).

Schneider and Lee (1990) examined Asian American academic achievement using a model combining both a macro- and micro-level analysis. At the macrolevel, the authors studied the economic and cultural history of Asian Americans in their country of origin and the country to which they immigrated. At the microlevel, analysis included the process of interactions among the children and their parents, teachers, and peers. Compared to Caucasian parents, Asian American parents had higher expectations and standards for their children's academic performance. Asian American parents also emphasized the importance of education and assisted their children in the pursuit of academic excellence by structuring learning opportunities outside of the traditional classroom. Many parents demonstrated involvement in their children's educational performance by teaching them basic reading, writing, and mathematical skills prior to the children entering school. Additionally, parents gave children extra homework assignments, limited time spent in leisure activities (e.g., watching television and playing with friends), and paid for private tutoring lessons (e.g., in music, language, computer science).

Results of Schneider and Lee's interviews with Asian American children revealed that most children were aware of their parents' high expectations for their academic achievement and also associated good performance with their parents' happiness, honor, and/or pride. Asian American students' high academic expectations and achievement were further reinforced by their teachers, who often had positive attitudes toward Asian American students. Teachers demonstrated the tendency to perceive these students as
diligent, industrious, quiet, and respectful—perceptions that reinforce the image of Asian Americans as the “model minority.” Additionally, Asian American students’ high academic expectations and performance were reinforced by their peer groups. The majority of Asian American students were placed in honors-level classes where students tended to motivate each other more and distract each other less compared to students in regular-level classes. Based on these findings, the researchers concluded that “Asians do well in school because their parents expect it, their teachers expect it, and their peer group expects it” (p. 374).

Schneider and Lee proposed that Asian American parents’ expectations and involvement with regard to their children’s educational attainment are the product of a culture which emphasizes academic achievement as a means of self-improvement, self-esteem, and family honor. As an alternate explanation for the emphasis on education, the authors suggest that Asian parents may be aware of or have experience with occupational discrimination and view education as a strategy to overcome this unequal treatment.

Parental expectations and involvement also emerged as significant factors contributing to the academic achievement of Asian American students in a study conducted by Peng and Wright (1994), who examined the family backgrounds and home environments of Asian American eighth-grade students. With regard to home environments and educational activities, results indicated that Asian American parents spent less time discussing school experiences and plans with their children compared to Black parents and White parents. In other words, there was less direct communication between Asian American parents and children regarding the children’s experiences in school. Additionally, contrary to expectations, Asian American parents did not provide
their children with direct assistance with schoolwork more frequently than other parents. While these results alone might portray Asian American parents as uninvolved or uninterested in their children's educational pursuits, further examination shows that these parents demonstrate their emphasis on academic achievement in other ways.

Implicitly or explicitly, Asian American parents set higher expectations for their children's academic performance compared to parents from other racial groups. Eighty percent of the sample of Asian American parents in Peng and Wright's study expected their children to obtain at least a bachelor's degree, compared to 62% of White parents, 58% of African American parents, and 50% of Hispanic parents. Asian American parents also provided more extracurricular learning experiences to their children than did other minority group parents—Asian American children attended more lessons and classes outside of regular school (e.g., language, art, and music) and participated in more enrichment activities (e.g., visiting museums, libraries). Overall, results of Peng and Wright's analysis indicate that differences in home environments and educational activities are significant factors contributing to student academic achievement: students whose families emphasize and encourage learning are more likely to exhibit high achievement. Additionally, the factors of home environments and educational activities account for a significant proportion of the differences in academic achievement scores between Asian American and other minority students.

Steinberg, Dornbusch, and Brown (1992) focused on the Asian American students themselves in addition to external influences affecting their achievement behavior. The researchers assessed adolescents' beliefs regarding education and the likelihood of school success. Results of their study revealed that the extent to which students believed that
doing well in school resulted in obtaining the kind of job they wanted was related to the amount of effort they exerted in school and their actual academic performance. Interestingly, the degree to which students believed that there were negative consequences associated with academic failure was found to be a better predictor of their effort and performance than the extent to which they believed that positive consequences result from academic success. There were no ethnic differences in the extent to which adolescents endorsed the belief that getting a good education would help them obtain a desirable job; however, compared to adolescents in other racial/ethnic groups, Asian American students were more likely to endorse the belief that not getting a good education would have negative job consequences. In other words, Asian American adolescents were distinguished from other students not by their belief that educational success will result in positive job outcomes but by their relatively stronger belief that educational failure will have negative job consequences.

Additionally, results of the Steinberg et al. (1992) study indicated that Asian American students devoted more time to their studies, were more likely to credit their academic accomplishments to hard work and effort, and were more likely to indicate that their parents held high standards for their academic performance compared to adolescents in other racial/ethnic groups. More specifically, Asian American students reported spending twice as much time on homework per week than did other students and were more likely to believe that their parents would react with anger if they received less than an A-grade. The researchers also examined parental and peer influence on adolescents' academic achievement. They found that Asian American parents were less actively involved in their children's education compared to any other group of parents, consistent
with the results of Peng and Wright's (1994) study. However, Asian American students reported receiving the highest level of peer support for academic achievement. The majority of Asian American students were involved in peer groups that encouraged and reinforced academic success. Asian American students regularly provided each other with studying and tutoring assistance, activities and support which may compensate for the relatively lower involvement of their parents. Thus, Asian American students were motivated to succeed academically by their own beliefs about occupational success, their desire to fulfill parental expectations, and reinforcement from their peers.

Although many Asian American students have excelled academically, this high achievement may come at a psychological price. Anecdotal accounts of Asian American students indicate that individuals are motivated to succeed in large part due to parental pressure or a sense of responsibility or guilt as the result of familial sacrifices (Lee, 1994; Schneider & Lee, 1990; Steinberg et al., 1992). Lee (1994) conducted fieldwork consisting of participant observations and interviews in order to gain greater understanding of the actual students behind the model minority image. A number of Asian American participants in this study reported that their parents had instilled in them the value that educational achievement was key to achieving success and social mobility in the United States. Many students indicated that their parents and families had immigrated to the United States in search of educational opportunities for their children. As a result of these sacrifices, many students felt a sense of guilt and obligation which motivated them to succeed academically. However, although these students accepted the value of hard work and effort, many also seemed to accept that their potential would not always be realized due to occupational discrimination. Rather than challenge
discrimination, these individuals changed their expectations to fit the limitations and opportunities presented to them.

Lee’s (1994) research also revealed that the model minority myth also has consequences for Asian American students’ well-being and their identities. In addition to the pressure placed on them by their own aspirations and their parents’ expectations, students also reported that they felt pressure to conform to the model minority stereotype from teachers and peers. A number of Asian American students indicated that the stereotype placed pressure on them to succeed by establishing boundaries for acceptable behavior (i.e., high academic achievement). Lee suggested that students may have feared that they would be rejected or considered unacceptable if they did not meet these expectations. Due to their efforts to perform up to their own and others’ expectations for academic achievement and their fears of falling short of these expectations, many students reported experiencing anxiety, depression, shame, and embarrassment.

Lee and Ying (2001) studied both Asian American students’ attitudes and behaviors toward academic achievement by examining 153 essays written by Asian Americans adolescents and young adults for an essay contest. The researchers recorded positive, negative, and mixed attitudes and embracing, rejecting, or mixed behavior toward academic achievement. Positive attitudes included those that valued academic achievement and/or studying hard in school; negative attitudes devalued academic striving and/or resented external pressure and expectations to succeed; and mixed attitudes had both positive and negative qualities. Embracing behavior included the pursuit of academic success by working hard in school and/or planning to pursue higher education; rejecting behavior included refusing to study, not attending classes, and/or not
pursuing higher education; and mixed behavior was simultaneously embracing and rejecting the pursuit of academic achievement. They found that while a significant proportion of Asian American adolescents in this sample (42.5%) held positive attitudes toward academic achievement, the majority of essay writers held non-positive views (13.1% negative, 44.4% mixed). All 65 adolescents reporting positive attitudes demonstrated embracing behavior toward academic achievement, exemplifying the Asian American model minority image. However, it is interesting to note that of the 88 adolescents with non-positive attitudes, 62 (70.5%) exhibited behavior which embraced academic achievement while 26 (29.5%) demonstrated rejecting or mixed behavior. Solely on the basis of their behavior, these individuals might be considered model minority students, as they appear to seek academic success. However, they also expressed anxiety, guilt, shame, unhappiness, and dissatisfaction as the result of possibly unrealistically high expectations set by themselves or others to excel academically. Thus, while on the outside these students may appear successful and accomplished, they may be suffering from psychological distress as the result of pressure to succeed.

Although the cultural theory has gained popularity and support, not all researchers agree with the argument that traditional Asian cultural values are the primary contributor to Asian American academic achievement. Sue and Okazaki (1990) pointed out that such arguments ignore the heterogeneity of the Asian American group, the lack of empirical research identifying specific cultural factors associated with achievement, and the influence of social context and the limited opportunities for Asian Americans in non-educational fields. Sue and Okazaki proposed an alternate model to explain the educational achievements of Asian Americans, which they labeled Relative
Functionalism. Relative Functionalism posits that academic achievement is the product of both cultural values (i.e., ethnicity) and Asian Americans' social status in American society (i.e., minority group standing). The authors propose that to the extent that opportunities for upward mobility in non-educational arenas (e.g., politics, entertainment, sports) are limited for Asian Americans, education becomes a more attractive and functional avenue for mobility. Relative Functionalism highlights the interaction of cultural values such as an emphasis on educational attainment and achievement and the limitations or opportunities presented by the social environment.

In their writings on Relative Functionalism, Sue and Okazaki propose that cultural values are only weakly correlated with academic achievement, inasmuch as values are too globally or too vaguely defined or are not directly related to achievement. They suggest that a better model would focus on the relationship between culture and some mediator variable (e.g., motivation, effort) which would demonstrate a more robust relationship with educational achievement. Perfectionism, or a general striving for excellence and the possession of high personal standards, is one such personality variable which has been associated with academic achievement and which may also be related to Asian American cultural values. Perfectionism may provide a link between cultural values and Asian American students' academic achievement, including both the positive (i.e., academic success) and negative (i.e., anxiety, guilt) aspects. The present study examined the relationship between Asian American cultural values and multidimensional perfectionism in addition to replicating a previous study which also investigated associations among perfectionism, academic procrastination, and academic self-efficacy.
2.2  **Perfectionism**

Based on clinical experience treating perfectionist clients, a number of psychologists have characterized perfectionism as a negative, dysfunctional trait. For instance, Pacht (1984) considered the pursuit of perfection an undesirable, debilitating goal associated with various forms of psychopathology, including depression and anxiety. According to Pacht, imperfections are the qualities that give people character, charm, and vitality. In other words, imperfections are the characteristics that make us human. Without these flaws, human beings would be ‘cold, sterile, and indeed, unlovable’ (p. 386). To Pacht, perfectionism is a ‘no-win scenario’ in which individuals set for themselves impossibly high standards of achievement and experience frustration when they ultimately and inevitably fail to reach their unattainable goals.

Burns (1980) also focused on a unidimensional, dysfunctional conceptualization of perfectionism, defining perfectionists as ‘people who strain compulsively and unremittingly toward impossible goals and who measure their own worth entirely in terms of productivity and accomplishment’ (p. 34). According to Burns, this drive is destructive, self-defeating, and associated with a number of problems including decreased productivity, impaired health, low self-esteem, mood disorders, and anxiety. By his definition, perfectionism is clearly an irrational and destructive pattern that needs to be addressed and resolved with counseling or risk causing irreparable damage to the perfectionist.

A number of researchers and practitioners have also elaborated on the concept of perfectionism by conceptualizing it as a multidimensional construct involving both personal and interpersonal aspects. Frost, Marten, Lahart, and Rosenblate (1990)
integrated several definitions of perfectionism (Burns, 1980; Hamachek, 1978; Pacht, 1983) and created an instrument to measure the different dimensions of the construct. Based on these previous theories of perfectionism, Frost and colleagues identified six defining components of perfectionism: excessively high standards, concern over making mistakes, doubts about the quality of one's actions or performance, perception of high parental expectations, perception of parental criticism, and emphasis on precision, order, and organization. The researchers developed a new instrument—the Multidimensional Perfectionism Scale (FMPS)—which is composed of separate subscales assessing each of the six dimensions. This study also found significant correlations between scores on the newly developed FMPS and scores on the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) and scores on the Depressive Experiences Questionnaire (Blatt, D’Afflitti, & Quinlan, 1976). These results seem to provide support for the idea that perfectionism is negative, dysfunctional quality.

Hewitt and Flett (1991) devised their own multidimensional definition of perfectionism, with greater focus on the interpersonal aspects of perfectionism. The authors described three dimensions of the construct: Self-Oriented Perfectionism, Other-Oriented Perfectionism, and Socially Prescribed Perfectionism. According to the authors, Self-Oriented Perfectionism involves the setting of high standards for oneself and strict evaluation of one's behavior. Individuals high in this dimension are motivated to attain perfection in their endeavors and to avoid failure. Other-Oriented Perfectionism involves the expectations an individual holds for other people—essentially, perfectionistic behavior directed outward rather than inward. This type of perfectionist is concerned with holding unrealistically high standards for significant others and evaluating their performance
based on these elevated expectations. The third dimension of perfectionism, Socially Prescribed Perfectionism, describes an individual's need to live up to the standards and expectations created by significant others who evaluate her or him and exert pressure on her or him to be perfect. In order to assess these dimensions, Hewitt and Flett created a new Multidimensional Perfectionism Scale (HMPS) with subscales corresponding to each dimension. According to Hewitt and Flett's model, all three dimensions of perfectionism are considered maladaptive and are associated with various forms of psychopathology.

However, not all views of perfectionism consider it in an entirely negative or dysfunctional light. Hamachek (1978) was among the first psychologists to make a distinction between positive and negative types of perfectionism. Based on his clinical experience with patients, he identified two different groups of perfectionists, whom he described as normal perfectionists and neurotic perfectionists. According to Hamachek, normal perfectionists hold high standards for themselves and value order and organization. These individuals derive a sense of pleasure and satisfaction from their efforts, but their self-esteem is not contingent on adherence to these requirements. In contrast, neurotic perfectionists set unreasonably high standards that are often impossible to meet and are never satisfied with their efforts, resulting in decreased self-esteem and self-worth.

A qualitative study conducted by Slaney and Ashby (1996) suggested that having high standards for performance and neatness and efficiency are essential components of perfectionism, and proposed that these characteristics are not inherently pathological. Many participants in this study evaluated their perfectionism positively and none were
willing to let go of it. However, almost all of the participants in their study reported that they experienced some level of distress due to their perfectionism and almost a third of the sample had been labeled a perfectionist by a counselor or had entered counseling to address their perfectionism. This discrepancy between individuals' positive evaluation of perfectionism and the amount of distress that they experienced seems to suggest that there is some ambivalence toward perfectionism. While there are benefits associated with striving toward perfection, there may also be psychological costs.

In light of the Slaney and Ashby (1996) findings, Slaney and Johnson (1996) attempted to develop a new model of perfectionism and a scale measuring the possession of high personal standards and order without conveying the message that these dimensions were necessarily pathological or problematic. The end result of their efforts was the Almost Perfect Scale, which was revised by Slaney, Rice, Mobley, Trippi, and Ashby in 2001. The new scale and definition of perfectionism involves three components: high personal standards, order or organization, and discrepancy, which is defined as the perceived difference between one's standards and expectations and one's actual performance. According to this view of perfectionism, high standards and order represent the more adaptive aspects of perfectionism, whereas discrepancy is the defining aspect of maladaptive perfectionism. This discrepancy component may be a key contributor to procrastination behavior; therefore this definition of perfectionism devised by Slaney and his colleagues was used in this study.

Scores on the subscales of the Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001) have also been used to distinguish between groups of perfectionists. Rice and Slaney (2002) used cluster analysis of APS-R to identify groups of adaptive
perfectionists, maladaptive perfectionists, and non-perfectionists. The perfectionist
groups were identified by their relatively higher scores on the Standards and Order
subscales. Furthermore, adaptive perfectionists and maladaptive perfectionists were
distinguished by their significantly different scores on the Discrepancy subscale.
Adaptive perfectionists were characterized by high standards in the absence of concerns
about their ability to reach these standards. In contrast, maladaptive perfectionists were
characterized by high personal standards in combination with the perception that they
lack the ability to achieve their standards. Consistent with the hypothesis that adaptive
perfectionism is associated with more positive outcomes (Slaney, Rice, & Ashby, 2002;
Slaney et al., 2001), adaptive perfectionists reported higher grade point averages and self-
esteem scores and lower scores of depression and anxiety in comparison to maladaptive
perfectionists. Non-perfectionists reported lower scores of positive adjustment compared
to adaptive perfectionists, but these results were not significantly different from those of
maladaptive perfectionists. Overall, the results of this study indicate that any differences
between adaptive perfectionism and maladaptive perfectionism can be attributed to
differences on the Discrepancy subscale.

Recent studies have examined the relationships among the different measures of
perfectionism and have combined scale items attempted to identify higher-order factors
representing the positive and negative aspects of perfectionism. Frost, Heimberg, Holt,
Mattia, and Neubauer (1993) combined the Frost (1990) MPS and the Hewitt and Flett
(1991) HMPS and then used factor analysis to identify two distinct factors of
perfectionism. One factor was composed of the Personal Standards, Organization
subscales of the FMPS and the Self-Oriented Perfectionism and Other-Oriented
Perfectionism subscales of the HMPS. This factor was thought to represent the positive aspects of perfectionism and was called the Personal Strivings factor. A second factor composed of the Concern over Mistakes, Parental Criticism, Parental Expectations, and Doubts about Actions subscales of the FMPS and the Socially Prescribed Perfectionism subscale of the HMPS represented the more negative side of perfectionism, and was called Maladaptive Evaluations Concerns factor.

A second study conducted by Suddarth and Slaney (2001) looked at the associations among the FMPS, the HMPS, and the Almost Perfect Scale-Revised (APS-R) and attempted to identify higher-order factors. Principal-components factor analysis of the scales yielded three factors which accounted for the majority of the variance. The first factor was composed of the Concern over Mistakes, Parental Criticism, Parental Expectations, and Doubts about Actions subscales of the FMPS, the Socially Prescribed Perfectionism subscale of the HMPS, and the Discrepancy subscale of the APS-R. This factor represented the maladaptive aspects of perfectionism. A second factor representing the adaptive dimension of perfectionism was composed of the Personal Standards subscale of the FMPS, the Self-Oriented Perfectionism and Other-Oriented Perfectionism subscales of the HMPS, and the Standards subscale of the APS-R. Finally, a third factor represented the Order/Organization factor and was composed of the Organization subscale of the FMPS and the Order subscale of the APS-R.

In order to assess the positive and negative qualities of multidimensional perfectionism, numerous studies have examined correlations with adaptive and maladaptive cognitions and behaviors. For example, although Hewitt and Flett (1991) conceptualized self-oriented, other-oriented, and socially prescribed perfectionism as
maladaptive, other researchers have found evidence that self-oriented perfectionism may have some adaptive qualities, including associations with positive affect (Frost, Heimberg, Holt, Matia, & Neubauer, 1993) and resourcefulness (Flett, Hewitt, Blankstein, & O'Brien, 1991). In order to assess the adaptive and maladaptive features of self-oriented and socially prescribed perfectionism, Klibert, Langhinrichsen-Rohling, and Saito (2005) assessed relationships with both adaptive characteristics (i.e., self-esteem, perceived self-control, and achievement motivation) and maladaptive characteristics (i.e., depression, anxiety, suicide proneness, shame, guilt, and procrastination). Results indicated that self-oriented perfectionism was positively correlated with perceived self-control and achievement motivation, whereas socially prescribed perfectionism was negatively associated with these variables. Furthermore, socially prescribed perfectionism was related to the maladaptive variables of depression, anxiety, shame, guilt, and suicide proneness. Consistent with previous research that illustrated that self-oriented perfectionism is a more adaptive form of perfectionism, nonsignificant correlations were found between self-oriented perfectionism and depression, shame, guilt, and suicide proneness. Additionally, self-oriented perfectionism demonstrated a negative relationship with procrastination.

While the extant literature has expanded understanding of perfectionism from a strictly negative, unidimensional concept to a multidimensional construct, relatively few studies have examined perfectionism in racial or ethnic minority groups and even fewer have studied the meaning of perfectionism for Asian Americans. This finding is somewhat surprising in light of evidence of Asian American students' high academic achievement patterns and of anecdotal accounts of Asian American students’
perfectionistic tendencies and behaviors (Yee, 1992). However, the few studies that have examined multidimensional perfectionism in Asian American students appear to suggest that Asian American students tend to exhibit the more dysfunctional aspects of perfectionism.

Chang (1998) examined differences in perfectionism in Asian American and Caucasian American student samples using the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). The author found that Asian Americans reported greater concerns about making mistakes, parental expectations, parental criticisms, and doubts about their actions compared to a sample of Caucasian students. However, contrary to expectations, no significant ethnic differences were observed for personal standards and organization, which are considered the more positive qualities associated with perfectionism (Frost et al., 1993; Klibert et al., 2005; Suddarth & Slaney, 2001). A more recent study conducted by Castro and Rice (2003) found similar results when comparing perfectionism in Asian American students to Caucasian and African American students. Results from this study indicated that Asian Americans reported significantly greater concern over mistakes, parental expectations, parental criticism, and doubts about their actions than Caucasian and African American participants. Additionally, participants in all three ethnic groups reported comparable levels of personal standards and organization. The results of these studies suggest that Asian American students are more likely to endorse the maladaptive qualities of perfectionism than other students; however, there appear to be no differences in the rates at which different racial/ethnic group individuals report experiencing the more adaptive aspects of perfectionism.
Several recent studies have explored the impact of cultural factors on multidimensional perfectionism. Xie, Leong, and Feng (2008) examined relationships among perfectionism, independent-interdependent self-construal, collective self-esteem, and trait and social anxiety and investigated differences between students living in mainland China and Caucasian students living in the United States. For both Chinese and Caucasian students, perfectionism as measured by the HMPS (1991) accounted for a significant percentage of the variance in trait anxiety. Socially prescribed perfectionism was a significant predictor for both Chinese and Caucasians but appeared to be a significantly stronger predictor of trait anxiety for Chinese participants. Socially prescribed perfectionism significantly predicted social anxiety in an unanticipated positive direction for both groups of participants, implying that the more individuals believe that others expect perfection from them, the more social anxiety they experience. Socially prescribed perfectionism appeared to be a stronger predictor of social anxiety for Chinese participants than Caucasians; however, this difference was not statistically significant. According to the authors, these results suggest that socially prescribed perfectionism is a significant predictor of anxiety across cultures; however, it may operate in different ways and predict different types of anxiety due to an interaction between anxiety and culture.

Yoon and Lau (2008) also explored the relationship between cultural variables and perfectionism in a study that examined associations among interdependence, depression, perfectionism, and parental relations in Asian American college students. Using the Frost Multidimensional Perfectionism Scale (Frost et al., 1990) the authors found a strong correlation between maladaptive perfectionism (i.e. concerns over
mistakes and doubting one's actions) and depressive symptoms. Additionally, the authors found some evidence that interdependence appears to moderate the associations between maladaptive perfectionism and depression. Regression analyses revealed that maladaptive perfectionism was positively related to depression for students who reported higher interdependence scores; however, this association was non-significant for those who demonstrated low scores of interdependence. The authors suggest that the cultural value of interdependence, which emphasizes one's relationships, responsibilities, and obligations, may “foster vulnerability to maladaptive perfectionism and may potentially amplify the distress associated with perfectionism through a process of cultural sensitization.” (p. 97). They propose that in Asian American students, maladaptive perfectionism may reflect these enhanced relational concerns instead of a self-determined focus on personal achievements.

Several recent studies have used Slaney et al.'s (2001) conceptualization of perfectionism with a diverse sample. Slaney, Chadha, Mobley, and Kennedy (2000) examined the meaning of perfectionism and the validity of the APS in India with a sample of Asian Indian students. Results of confirmatory factor analysis indicated that the factor structure of the American sample (Johnson & Slaney, 1996) provided a good fit for the Asian Indian sample. Additionally, the factor loadings for the Asian Indian participants were similar to the results found in a sample of college students in the United States. Generally, the similarity of the cross-cultural factor structures provides support for the idea that Asian Indian university students and university students in the United States perceive perfectionism as operationally defined by the APS in similar ways.
Wei, Heppner, Mallen, Ku, Liao, and Wu (2007) investigated the associations among acculturative stress, maladaptive perfectionism, length of time in the United States, and depression among Chinese international students. Maladaptive perfectionism was measured using the Discrepancy subscale of the APS-R (Slaney et al., 2001). Maladaptive perfectionism was positively related to depression symptoms, even after the authors controlled for acculturative stress and length of time spent in the U.S. Additionally, the authors found a significant three-way interaction of maladaptive perfectionism, acculturative stress, and length of time in the U.S. Among students who had lived in the U.S. for a short time period, a significant relationship between acculturative stress and depression existed regardless of the level of maladaptive perfectionism. That is, this relationship was significant when maladaptive perfectionism was both high and low. Among students who had been living in the U.S. for a longer period, high maladaptive perfectionism exacerbated the association between acculturative stress and depression, whereas low maladaptive perfectionism buffered this relationship. Furthermore, the negative impact of maladaptive perfectionism was as strong for Chinese international students who had lived in the U.S. for a longer period of time as it was for students who had been in the U.S. for a short time, suggesting that time spent in the U.S. did not buffer the negative impact of maladaptive perfectionism on depression.

Wang, Slaney, and Rice (2007) also used the APS-R to examine multidimensional perfectionism in Chinese university students in Taiwan and associations with self-esteem, depression, anxiety, social-oriented motivation, and individual-oriented motivation. Results of confirmatory factor analysis provided support for the validity of the Chinese version of the APS-R, including the three subscales of Standards, Order, and
Discrepancy. Cluster analysis was conducted to distinguish between groups of adaptive perfectionists (high Standards and low Discrepancy scores), maladaptive perfectionists (high Standards and high Discrepancy scores), and non-perfectionists (low Standards and low Discrepancy scores). These groups were similar to groups found in previous studies conducted in the United States. Adaptive perfectionists reported higher self-esteem and lower depression and anxiety scores, whereas maladaptive perfectionists reported lower scores on self-esteem and higher scores of depression and trait anxiety. Non-perfectionists reported self-esteem, depression, and anxiety scores that fell between those of the two perfectionism groups. These results comparing perfectionist groups replicated those found in previous research using American samples (Grzegorek, et al., 2004; Rice & Slaney, 2002).

In addition to the groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists identified through cluster analysis, a fourth group emerged which included 32% of the students who participated in this study. Participants in this group reported low Standards scores and Discrepancy scores that were significantly lower than those of maladaptive perfectionists but higher than the scores of the other two groups. Paradoxically, these individuals appeared to report that they were concerned about not meeting their relatively low standards. The fourth group's scores on state anxiety, trait anxiety, self-esteem, and depression were similar to the scores demonstrated by non-perfectionists. The authors hypothesized that the high Discrepancy scores reported by individuals in this fourth cluster are the product of not meeting others' expectations and an examination of individual-oriented and social-oriented achievement motivation scores across groups provided support for this possibility. Adaptive and maladaptive
perfectionists reported significantly higher mean scores of individual-oriented motivation than the non-perfectionists and this fourth group, suggesting that perfectionists are motivated by self-directed goals and incentives. However, adaptive perfectionists, maladaptive perfectionists, and the fourth group reported significantly higher scores of social-oriented motivation compared to non-perfectionists, implying that these groups also emphasize goals and evaluative criteria defined by society, groups, or significant others. According to the study authors, the pattern of motivation scores demonstrated by the fourth group appears to be consistent with the prospect that this group's elevated Discrepancy scores may be the consequence of not meeting others' expectations. The researchers also proposed that this pattern may be related to Chinese collectivistic culture which emphasizes roles within families and groups and expects children to bring honor to their families by fulfilling parental expectations.

In summary, these studies and the various conceptualizations of perfectionism support the contention that perfectionism is multidimensional and multifaceted. Not only does it involve a number of different components, it also has both adaptive and maladaptive features. Recent literature has focused on these maladaptive and adaptive dimensions of perfectionism and their relationships with a variety of emotional and behavioral consequences, including depression, attachment, anxiety, emotional adjustment, coping, and self-esteem. However, additional research is needed to examine the meaning of perfectionism with racial and ethnic minority group participants and correlates with other behaviors. Several recent studies have measured multidimensional perfectionism in Asian students abroad and found results indicating that maladaptive perfectionism is associated with depressive symptoms, low self-esteem, and trait anxiety.
(Wang, et al., 2007; Wei et al., 2007). In comparison, adaptive perfectionism has been related to higher self-esteem and low depression and anxiety. These results are consistent with patterns observed in previous research with American participants (Rice & Slaney, 2002) and support the conceptualization of distinct positive and unhealthy aspects of perfectionism (Slaney & Johnson, 1996; Slaney et al., 2001). However, there is some evidence that perfectionism dimensions are related to cultural factors (e.g., social-oriented motivation) and perfectionism groups may be impacted by these values (Wang et al., 2007). The present study expands the research on multidimensional perfectionism in Asian American individuals and examines the relationships among perfectionism, procrastination, and self-efficacy, which have been conceptualized as cognitive and behavioral consequences of perfectionism.

2.3 Procrastination

Procrastination has also been identified as a behavioral pattern linked to academic outcomes. According to Senecal, Koestner, and Vallerand (1995), procrastination involves knowing that one is supposed to, and perhaps even wanting to, complete an academic task but failing to perform the activity within the expected time frame. More specifically examining procrastination in an academic setting, Rothblum, Beswick, and Mann (1984) defined procrastination as the tendency to postpone academic tasks which is often accompanied by problematic levels of anxiety or distress. Current research and treatment of procrastination regard it not as merely task-specific avoidance behavior but as a personality trait (Schouwenburg, 2004).

Numerous research studies have demonstrated that procrastination is a common problem among college students. Schouwenburg (2004) collected the scores of over
2,000 college and university students who were administered Lay's (1986) Procrastination Scale and examined the prevalence of procrastination in a student population. The aggregated scores indicated that almost all students procrastinate to some degree and that a moderate amount of procrastination is considered average or normal. Solomon and Rothblum (1984) were among the first researchers to examine procrastination in the academic setting and to develop a measure of procrastination that examined the frequency of and reasons for procrastination on academic tasks: the Procrastination Assessment Scale-Students (PASS). Their results indicate that procrastination represents a considerable problem for a significant proportion of college students. Forty-six percent of their sample reported that they nearly always or always procrastinate on writing a term paper, 28% procrastinate on studying for exams, and 30% delay reading weekly assignments. Participants were also asked about the extent to which their procrastination tendencies posed a problem for them. Twenty-four percent reported that procrastination was nearly always or always a problem when writing a term paper, 21% said it was a problem when studying for exams, and an additional 24% said it was a problem when doing weekly reading assignments. The majority of students (ranging from 55 to 65%) reported interest in reducing their procrastination on these tasks.

In addition to assessing the frequency of academic procrastination, Solomon and Rothblum's (1984) scale assessed participants' reasons for engaging in procrastination. Factor analysis of their items revealed two factors: Fear of Failure and Task Aversiveness. The fear of failure factor tapped into items related to anxiety about meeting others' expectations, concerns about meeting one's own standards, and lack of self-confidence. This factor accounted for 49% of the variance in procrastination scores. The
second factor, task aversiveness, tapped items reflecting unpleasantness of the task and lack of energy or laziness. Aversiveness of the task accounted for 18% of the variance in participant scores.

Frequency patterns of students' reasons for procrastination revealed two distinct groups of procrastinators. First, Solomon and Rothblum identified a relatively homogeneous group of students who indicated that their procrastination was driven by fear of failure. Individuals in this group procrastinated because of concerns about poor performance or not meeting their own or others' expectations. This fear of failure factor was significantly correlated with depression, irrational cognitions, and anxiety. Negative correlations were found with punctuality and organized study habits, self-esteem, and assertion. The second group of procrastinators consisted of a large and relatively heterogeneous group of students who reported engaging in procrastination due to aversiveness of the task. This factor was significantly correlated with depression and irrational beliefs and negatively correlated with punctuality and organized study habits. Aversiveness of the task did not demonstrate significant correlations with anxiety or assertion and only had a small association with self-esteem. These patterns of results suggest that students who procrastinate because of aversiveness of the task can be differentiated from students who procrastinate out of fear of failure because the latter are more likely to report high anxiety and low self-esteem. The authors conclude that procrastination does not merely represent a lack of study habits and time management but rather involves a complex interaction of cognitive, behavioral, and affective components.

As a follow-up study to the initial development of the PASS, Rothblum, Solomon, and Murakami (1986) examined affective, cognitive, and behavioral differences between
low and high procrastinators. Remarkably, more than 40% of their sample reported that they nearly always or always procrastinate on exams to the point of experiencing distress. Additionally, academic procrastination was found to be associated with behavioral outcomes: individuals who reported a relatively high level of procrastination also tended to delay on self-paced quizzes and performed less well academically compared to their counterparts who reported engaging in less procrastination. High procrastinators also appeared to suffer from greater anxiety; this group reported greater test anxiety, state anxiety, and were more likely to report experiencing physical symptoms of anxiety. High procrastination was also related to dysfunctional cognitive patterns, including the tendency to attribute success to external and unstable factors, negative appraisal, lower self-efficacy and less self-control. In sum, the results of Rothblum et al.’s study reveal that procrastination is not only associated with cognitive and affective dimensions, but also has a negative impact on academic performance.

Beswick, Rothblum, and Mann (1988) conducted further analysis of the psychological correlates of procrastination in college students. The authors assessed relationships with self-esteem, irrational thinking, and indecision by administering a series of questionnaires and assessing the time taken to complete three separate assignments. They reported that a significant proportion of their subjects indicated strong tendencies to procrastinate on academic tasks. Specifically, 31% of their sample reported that they always or nearly always procrastinated when studying for exams and 46% reported that they always or nearly always procrastinated when writing term papers. Additionally, students who reported and demonstrated tendencies to procrastinate on academic tasks tended to perform more poorly, reflecting either hastily completed work
or the possibility that students who are less capable are more likely to postpone tasks. Correlational analyses revealed a small but significant correlation between self-reported procrastination and irrational beliefs. Self-reported procrastination and delay in submitting a term paper assignment demonstrated significant negative correlations with self-esteem but positive relationships with anxiety and depression.

Lay's (1986) research further explored the association between procrastination and maladaptive constructs by examining procrastination's relationships with disorganization and poor coping with stressful projects. Results of this study revealed that individuals who reported high scores for procrastination tended to score low in organization and high in neurotic disorganization. However, in contrast to the results found by Rothblum et al. (1986) and Beswick et al. (1988), procrastination was not related to GPA and exam grade, suggesting that the procrastinator's tendency to be disorganized, particularly at the cognitive level and in everyday activities, did not appear to negatively affect academic performance. However, although procrastination did not appear to detract from performance, it did seem to impair coping with stressful tasks and productivity. Low procrastinators and high procrastinators appeared to react and cope with such projects with dramatically different approaches. When faced with stressful assignments, low procrastinators tended to view these tasks as more challenging and engrossing, as having more positive impact, and also spent more time on these activities. Individuals characterized as high procrastinators did not exhibit these cognitive and behavioral patterns. In comparison to low procrastinators, high procrastinators tended to devote more time to enjoyable projects than stressful projects, behavior that is consistent with
Ellis and Knaus's (1977) theory that procrastinators are reluctant to perform stressful or unpleasant tasks in the process of accomplishing their goals.

Furthermore, two distinct types of procrastination have been identified and explored: decisional procrastination and behavioral procrastination (Effert & Ferrari, 1989; Ferrari, 1994). Decisional procrastination can be described as the purposive delay in making decisions within some specific time frame. By delaying tasks, individuals manage to avoid testing their abilities and require others to make decisions in their place, allowing them to attribute any ensuing failure to someone else's poor planning or decision making. In contrast, behavioral procrastination involves delaying or avoiding tasks in order to protect a vulnerable sense of self-esteem. These types of procrastinators base their sense of self-worth on their ability to successfully perform tasks. If these individuals can successfully avoid completing tasks, this ability is never tested and they can maintain an image of high task ability.

In addition to distinguishing between these two types of procrastination, Ferrari (1994) examined the relationships between the two and with other cognitive correlates. He found that decisional and behavioral procrastination were significantly correlated with each other and with interpersonal dependency, self-defeating behavior patterns, and low self-esteem. Further analyses revealed that interpersonal dependency significantly predicted decisional procrastination while self-esteem was a significant predictor of behavioral procrastination. Thus, while both forms of procrastination are similar in that they both involve delaying tasks to protect a fragile self-image, they seem to be predicted by different factors. The results of Ferrari's (1994) study suggest that individuals who are
indecisive and have avoidant motives for delaying actions tend to rely on others to make
decisions for them.

The relationships among academic procrastination, self-handicapping, behavioral
delay, and test performance were further explored by Beck, Koons, and Milgrim (2000).
Results of this study indicated that individuals who reported higher levels of academic
procrastination also tended to demonstrate high self-handicapping scores. Additionally,
these tendencies to procrastinate in academic situations and engage in self-handicapping
were involved in the behavioral consequences of situational procrastination, amount of
time spent studying, and exam performance. Individuals who were inclined to engage in
procrastination and self-handicapping spent less time studying, delayed longer on exam
preparation, spent less time studying, and performed more poorly on exam compared to
their counterparts who were not as prone to procrastination or self-handicapping. These
results support Ferrari’s (1991b, 1992) findings that individuals procrastinate as a means
of self-handicapping on academic tasks such as preparing for an exam. However, Beck et
al. found that the effects of self-handicapping and academic procrastination on exam
performance were mediated by ability level. Participants with low SAT scores (400-936)
performed poorly on the exam regardless of their procrastination tendencies or lecture
attendance. Participants with mid-range SAT scores (937-1044) performed well on the
exam if they attended lectures regardless of procrastination tendencies. Finally,
participants with high SAT scores (1045-1290) performed well on the exam if they either
did not delay studying or attended class lectures or both. Individuals in this group
performed poorly if they both procrastinated and failed to attend class. Thus, the
relationship between academic procrastination and performance may not be as direct as previously thought.

2.4 **Perfectionism and Procrastination**

Several of the leading proponents of perfectionism have hypothesized that a relationship exists between perfectionism and procrastination. In his initial description of normal and neurotic perfectionism, Hamacheck (1978) noted that while perfectionism is not necessarily a negative trait, it can be self-defeating when the fear of not performing up to one's standards results in delays in starting projects or activities. Hamachek also claimed that rates of procrastination varied by type of perfectionist. According to Hamachek, while normal perfectionists concentrate on their strengths and performing to the best of their ability, neurotic perfectionists focus on their deficiencies and try to avoid making mistakes. These avoidant tendencies may lead neurotic perfectionists to engage in more frequent procrastination. Johnson and Slaney (1996) also hypothesized that procrastination would be a problem experienced by perfectionists and reasoned that 'because perfectionists want to produce the perfect painting, novel, or manuscript, they often delay starting or finishing because the final product will never be quite perfect' (p. 31). In their qualitative study of perfectionist clients, Slaney and Ashby (1996) reported that almost all of the participants who described themselves as neat and orderly also reported that they engaged in procrastination.

In their book entitled *Procrastination*, Burka and Yuen (1983) devote a section to 'the search for perfection' (p. 19), which they associate with fear of failing to meet one's standards. According to the authors, individuals who equate their self-worth with their abilities and performance accomplishments are more likely to procrastinate in order to
provide an explanation for any performance that falls short of genius and to preserve their belief that they are brilliant. For these individuals, the fear of being perceived by themselves or others as lacking ability is so powerful and aversive than they would rather be seen as lazy or disorganized rather than inadequate or unworthy. Procrastination serves a function by easing this fear of failure by providing a reasonable excuse for any perceived inadequacies.

A weak but significant relationship was found between perfectionism and procrastination in a study conducted by Ferrari (1992). When compared to non-procrastinators, procrastinators reported significantly more perfectionism, protectiveness, public and private self-consciousness, and self-handicapping. Procrastinators who scored high in unidimensional perfectionism tended to demonstrate high scores on social self-handicapping, self-presentation, and social anxiety. Procrastinators who indicated lower scores of perfectionism demonstrated high scores on only one measure of self-presentation. Based on this pattern of results, Ferrari postulated that perfectionism serves a different purpose for procrastinators and non-procrastinators. Procrastinators may display perfectionistic tendencies in an attempt to impress others with their efforts, while non-procrastinators may consider perfectionism a means of demonstrating their skills and abilities.

Additional studies have extended the research on perfectionism and procrastination by using multidimensional conceptualizations of perfectionism rather than a unidimensional model. The authors of the Frost et al. (1990) Multidimensional Perfectionism Scale (FMPS) examined the relationship between perfectionism and procrastination during the process of developing the scale. They found that although
overall perfectionism was not associated with procrastination frequency, it was significantly correlated with the degree to which subjects perceived their procrastination as problematic, as assessed by the Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum 1984). When the correlations between the subscales of the FMPS and the subscales of the PASS were examined, results indicated differential relationships among the dimensions. Concern over Mistakes was positively correlated with the extent to which procrastination was perceived as a problem, but not with the frequency of procrastination. The Personal Standards and Organization subscales were both negatively correlated with the frequency of procrastination, while the Parental Expectations and Criticism subscales were positively correlated with procrastination frequency and the extent to which subjects perceived it as problematic. Thus, individuals who demonstrated high scores on the more positive dimensions of perfectionism seemed to experience less procrastination while those who reported higher levels of the negative aspects of perfectionism appeared to experience more problematic procrastination.

Several studies found a link between procrastination and the Socially Prescribed Perfectionism dimension of the HMPS (Hewitt & Flett, 1991). Flett, Blankstein, Hewitt, and Koledin (1992) examined the relationship between perfectionism and procrastination in college students using two measures of perfectionism and two measures of procrastination. The results of the analysis of the Multidimensional Perfectionism Scale (Hewitt & Flett, 1991) revealed that Self-Oriented Perfectionism and Other-Oriented Perfectionism were not significantly correlated with frequency of procrastination. However, a significant relationship was observed between Socially Prescribed Perfectionism and procrastination. Additionally, these dimensions of perfectionism were
associated with the Fear of failure reason for procrastination of the Procrastination Assessment Scale-Students (Solomon & Rothblum, 1984). In contrast to these results, scores on the unidimensional Burns Perfectionism Scale (Burns, 1980) were significantly correlated with procrastination scores and with the frequency of academic procrastination, the extent to which procrastination was perceived as problematic, and fear of failure.

Furthermore, the associations among multidimensional perfectionism, procrastination, and depression were investigated by Saddler and Sacks (1993), who also used the HMPS (1991). Their analysis found support for a significant relationship between Socially Prescribed Perfectionism and procrastination and indicated that Self-Oriented Perfectionism was not related to procrastination. However, contradictory to the findings of Solomon and Rothblum (1984), procrastinators in this study did not seem to procrastinate due to low self-confidence or perfectionistic standards for their performance. These results suggest that academic procrastinators are concerned with the standards they perceive that others hold for them, how they believe they are evaluated, and their beliefs regarding how they are pressured to be perfect by others.

Saddler and Buley (1999) examined factors that predicted academic procrastination, including goal orientation, self-efficacy, and perfectionism. Their results indicated that intrinsic goal orientation, self-efficacy for learning and performance, and Other-Oriented Perfectionism were not significant predictors of procrastination. However, a model that included test anxiety, Self-Oriented Perfectionism, Socially Prescribed Perfectionism, control of learning beliefs, and extrinsic goal orientation did account for a significant amount of variance in procrastination scores. Additionally,
individuals who demonstrated low scores on Self-Oriented Perfectionism tended to
demonstrate higher scores of procrastination. That is, individuals who did not hold high
standards for themselves tended to procrastinate more, a finding that was both
unexpected and inconsistent with previous research on perfectionism and procrastination
(Flett et al., 1992; Saddler & Sacks, 1993). The results of this study suggest that
individuals who procrastinate on academic tasks tend to have concerns about negative
evaluations of their performance and hold low personal standards for achievement.

In a study of the perfectionistic tendencies of graduate students, Onwuebuzie
(2000) also found evidence for a significant association between perfectionism and
procrastination. Overall academic procrastination as measured by the PASS (Solomon &
Rothblum, 1984) was positively correlated with Socially Prescribed Perfectionism
(Hewitt & Flett, 1991). When the relationship between perfectionism and the reasons for
procrastination was analyzed, the author found that fear of failure was positively
associated with Socially Prescribed and Self-Oriented Perfectionism, whereas task
aversiveness was not significantly related to any of the perfectionism subscales. Based on
this pattern of associations, Onwuebuzie hypothesized that the social context in which
procrastination is exhibited is more influential than the interpersonal context. These
results point to the possibility that perfectionism may be a cause of procrastination—‘In
other words, it is likely that academic procrastinators are overly concerned about the
standards that others hold for them, how they believe they are evaluated, and the extent to
which they are expected by others to be perfect’ (p. 108).
2.5 *Academic Self-Efficacy*

An additional variable that has been linked separately to both perfectionism and procrastination is self-efficacy. Bandura (1986) defined self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance” (p. 391). Personal achievements depend not only on skills and abilities but also self-beliefs of efficacy to use those skills effectively. An individual who possesses the same knowledge and ability may demonstrate poor, sufficient, or extraordinary performance depending on fluctuations in self-efficacy beliefs (Bandura, 1993). Poor performance may result when individuals lack the necessary skills or when they possess the skills but lack the self-efficacy to use them.

According to Bandura’s theory, self-efficacy expectations impact behavior through cognitive, motivational, affective, and selection processes (Bandura, 1977, 1989). For instance, self-efficacy influences choice of behavioral settings. Individuals are more likely to approach challenging situations and settings that they perceive themselves as capable of handling successfully, whereas they are more likely to avoid activities that they judge to be beyond their coping skills (Bandura, 1989). Perceived self-efficacy can also impact both the initiation and persistence of behavior. Individuals’ beliefs in their capabilities to cope or be successful in a given situation shape the goals they set for themselves and their commitment to those goals (Bandura, 1989, 1994). Individuals who are characterized by high self-efficacy are more inclined to visualize success scenarios which function as positive guides for performance. Those who perceive themselves low in self-efficacy more often construct failure scenarios that damage performance by directing focus to what could go wrong. These expectations of success or failure can also
affect the amount of effort individuals expend in these situations and their persistence in the face of obstacles and negative experiences. Individuals who are confident in their capabilities to accomplish certain tasks will exert greater effort in the face of any challenges or obstacles, whereas individuals who have doubt in their capabilities are more likely to decrease their efforts or prematurely terminate their attempts and accept of a mediocre solution (Bandura, 1977, 1986, 1989).

In summary, ‘Efficacy beliefs help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove in the fact of adverse situations—the higher the sense of efficacy, the greater the effort, persistence, and resilience’ (Pajares, 1996, p. 544). Bandura’s theory of self-efficacy has generated numerous studies investigating these relationships between self-efficacy and initiation of behavior, performance, and persistence. Due to the large number of studies that have been conducted on these associations with self-efficacy and its relative significance in the present study, only a few key studies focused on academic self-efficacy will be reviewed.

A number of studies of students' academic functioning have found support for Bandura's contention that perceived self-efficacy mediates the effects of skills or other beliefs on performance by influencing persistence, perseverance, and effort (Bandura, 1993; Bandura & Schunk, 1981; Bouffard-Bouchard, 1990; Lent, Brown, & Larkin, 1984; Lent, Brown, & Larkin, 1986). The relationships between Bandura's conceptualization of self-efficacy and academic performance and persistence were examined by in a study conducted by Lent, Brown, and Larkin (1984). Results of their study indicated that students' beliefs in their capabilities to fulfill educational
requirements were related to their actual class performance and persistence in college. Students who reported higher self-efficacy strength ratings regarding their ability to complete educational requirements for technical and scientific majors achieved higher grades and persisted in their majors longer in comparison to students who reported relatively lower self-efficacy.

Lent, Brown, and Larkin (1986) replicated and extended their previous (1984) study by performing regression analysis using self-efficacy, high school rank, and math PSAT score to predict college grade point average (GPA) in science and technical courses, persistence in a technical major, and range of perceived technical and scientific career options. Consistent with the results of their previous study, subjects who reported higher self-efficacy achieved higher grades and persisted in the college of technology longer than did students who reported relatively lower self-efficacy. Regression analysis indicated that self-efficacy for academic milestones and educational requirements contributed a significant amount of variance beyond math PSAT score and high school rank in predicting GPA in science or technical courses. Self-efficacy also accounted for significant variance in the prediction of the persistence in the college of technology, beyond the contribution of high school rank. Additionally, self-efficacy added unique variance to the regression equation predicting range of perceived technical and scientific career options. The results of this series of regression analyses suggest that independent of interests, mathematical ability, and past achievement, self-efficacy aids the prediction of grades in technical and scientific courses, retention, and range of perceived career options. Results of correlational analyses conducted in this study also provided support for the discriminant validity of self-efficacy. Nonsignificant correlations were found
between self-efficacy scores and general self-esteem and career indecision, suggesting that self-efficacy does not simply reflect global self-confidence or career choice certainty.

Multon, Brown, and Lent (1991) used a meta-analysis technique to study the relationship between self-efficacy and academic performance and persistence. Results of their analysis revealed that self-efficacy was significantly and positively associated with both academic performance and persistence across a variety of student samples. Self-efficacy beliefs accounted for approximately 14% of the variance in students' academic performance and approximately 12% of the variance in academic persistence. However, significant heterogeneity among effect size estimates found in the studies included for analysis indicated that the relationship between self-efficacy and performance and persistence may differ across types of samples, measures, and study designs. Differences in effect sizes may have been influenced by factors such as the time period during which self-efficacy and performance were assessed, students' achievement status, subject age, and types of performance measure used. In general, results of Multon et al.'s meta-analysis provide support for Bandura's theory of self-efficacy and its relation to academic performance and persistence.

Few studies have been conducted that have focused specifically on self-efficacy in Asian Americans. Eaton and Dembo (1997) compared the motivational beliefs and achievement levels of Asian American students and non-Asian students. In both honors and regular-level classes, Asian American students exhibited higher levels of achievement than did non-Asian students. However, assessment of students' motivational beliefs revealed that Asian American students reported higher levels of fear of failure and lower levels of general self-efficacy than did their non-Asian counterparts. Fear of
academic failure was the greatest predictor of the academic achievement behavior of Asian American students; in contrast, this factor least explained the performance of non-Asian students. Eaton and Dembo proposed that Asian American students' relatively high levels of fear of failure may be due to parental pressure to succeed academically and the shame and criticism that may result from such poor performance. The finding of Asian American students' lower self-efficacy is noteworthy in relation to this group's higher levels of academic achievement. While previous studies have linked lower self-efficacy with cognitive, affective, and motivational deficits (Bandura, 1986), Asian American students may experience a different scenario. The authors suggest that these results may indicate that Asian American students have higher goals and standards for their academic performance, which then motivate them to apply greater effort to accomplish their goals. Alternative explanations offered for the relationship between self-efficacy and Asian American achievement include traditional Asian cultural values of modesty and self-effacement and the tendency of non-Asians to overestimate their own capabilities relative to their actual performance. Eaton and Dembo note that the concept of self-efficacy, which was developed in an American framework emphasizing individual achievement and personal responsibility, may not be appropriately applied to different populations or may demonstrate relationships with other constructs that are significantly different from those seen in European American samples.

Some evidence has been found indicating that acculturation and Asian American students' adherence to European American cultural values are associated with general self-efficacy. Kim and Omizo (2005, 2006) examined Asian American college students' levels of behavioral acculturation to U.S. cultural norms, behavioral acculturation to
Asian cultural norms, general self-efficacy, cognitive flexibility, collective self-esteem, acculturative stress, and attitudes toward seeking professional psychological help. European American values included those regarding autonomy, sexual freedom, and child-rearing practices. Results of this study revealed that Asian American students’ behavioral acculturation to European American cultural norms was positively related to general self-efficacy, cognitive flexibility, and the public dimension of collective self-esteem. The authors suggested that these findings may indicate that Asian American college students who have a high level of engagement with European American norms perceive themselves to possess the increased capability to cope with novel situations, the competence to effectively handle the demands of such situations, and also believe that others perceive the Asian American group favorably.

2.6  

Perfectionism and Self-Efficacy

Burns (1980) proposed that perfectionists’ irrational and self-defeating cognitive patterns undermine their sense of self-efficacy. Perfectionists consider themselves inefficient and incompetent based on a fantasy that truly successful people are able to reach their goals with few errors and with little effort or psychological distress. Because perfectionists’ limited coping efforts do not measure up to this fantasy, they feel inferior and incapable of achieving their goals. This lack of confidence and sense of incompetence and helplessness seems to be consistent with Bandura's conceptualization of low self-efficacy (Bandura, 1977, 1986).

The literature regarding these topics suggests that individuals who report higher levels of the adaptive components of perfectionism also report higher levels of self-efficacy. Hart, Gilner, Handal, and Gfeller (1998) examined the relationship between
scores on the Burns Perfectionism Scale (BPS; Burns, 1980) and the Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991) with scores of general self-efficacy. Total perfectionism scores on the HMPS and BPS were not significantly related to self-efficacy. However, despite a lack of a significant correlation between HMPS total score and self-efficacy, further analysis found significant correlations between the three subscales of the MPS and self-efficacy. Scores of Self-Oriented Perfectionism and Other-Oriented Perfectionism were negatively correlated with self-efficacy. In contrast, Socially Prescribed Perfectionism was positively correlated with self-efficacy. Based on their scores on each of the perfectionism measures, participants were also divided into high and low perfectionism groups. Analysis of these groups revealed that total scores on either the BPS or HMPS did not discriminate high and low perfectionism scorers on the self-efficacy scale. That is, the self-efficacy scores of individuals who were high in perfectionism were not significantly different from the self-efficacy scores of those in the low perfectionism group. However, Hart et al. found that the separate subscales of the HMPS did discriminate on the self-efficacy variable. For the Self-Oriented and Other-Oriented Perfectionism subscales, individuals who scored high in these dimensions of perfectionism had self-efficacy scores significantly below those of participants who scored low in these dimensions. However, a different pattern emerged when Socially Prescribed Perfectionism was considered; participants who demonstrated high scores on this subscale had self-efficacy scores significantly above those who were low in socially prescribed perfectionism. The results of this study seem to provide further support for the idea that perfectionism can be adaptive or maladaptive.
A study conducted by LoCicero and Ashby (2000) also examined the relationship between perfectionism and general self-efficacy. The authors identified perfectionists and non-perfectionists using the Almost Perfect Scale-Revised (APS-R; Slaney, et al., 2001) and also used scores on the Standards, Order, and Discrepancy subscales to distinguish between adaptive and maladaptive perfectionists. The authors found that subjects in these groups reported significantly different levels of self-efficacy. Adaptive perfectionists demonstrated higher scores on the Self-Efficacy Scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982) than non-perfectionists, whereas the self-efficacy scores of maladaptive perfectionists did not differ significantly from the scores of non-perfectionists. Differences were also observed between adaptive and maladaptive perfectionists, with adaptive perfectionists reporting higher levels of general and social self-efficacy. Thus, these results are not consistent with Burns's (1980) contention that perfectionists have low levels of self-efficacy. However, the results of this study seem to provide further support for the contention that perfectionism may be adaptive or maladaptive and the importance of distinguishing between different types of perfectionists.

Stoeber, Jutchfield, and Wood (2008) investigated relationships among perfectionism, self-efficacy, self-criticism, and aspiration level and the impact of positive or negative performance feedback. Perfectionism was measured using the Striving for Perfectionism Scale (Stoeber & Rambow, 2007). Correlational analysis revealed that perfectionistic striving was significantly and positively correlated with generalized self-efficacy and aspiration level. Additionally, perfectionistic striving predicted increases in aspiration level after participants received positive feedback about their successful
performance on a test administered and scored by the researchers. These results imply that individuals who strive for perfection have greater confidence in their capabilities, have higher aspirations about upcoming tasks, and raise their aspirations by selecting a more difficult task than they had previously chosen. Conversely, self-criticism was negatively correlated with generalized self-efficacy prior to performance feedback and reduction in aspiration level regardless of the type of feedback received, suggesting that individuals who tend to criticize themselves are less confident about their capabilities to cope with adversity and become even more pessimistic after experiencing failure. The results of this study indicate that perfectionistic striving is associated with positive characteristics, processes, and outcomes, and represents the positive aspect of perfectionism.

Stoeber et al. (2008) also note that their analyses revealed that perfectionistic striving and self-criticism were significantly and positively correlated, suggesting that individuals who strive for perfection have strong tendencies to be critical of themselves. They hypothesize that the combination of perfectionistic striving and self-criticism may contribute to a distinct response following success or failure. Because perfectionistic striving is associated with higher aspirations and generalized self-efficacy, individuals may be more likely to choose more difficult tasks that have higher risks of failure. Experiencing success would result in an increase in aspiration level; however, failure would lead to a decline in self-efficacy but no change in aspiration level. If this pattern were to continue, it may result in increasing incongruity between one's aspirations and confidence in one's capabilities which may increase the discrepancy between expectations and one's ability to reach these expectations. This hypothesized pattern is consistent with
Slaney et al.’s (2001) conceptualization of the Discrepancy factor that appears to represent the maladaptive dimension of perfectionism.

Van Yperen and Hagedorn (2008) explored associations among the Standards and Discrepancy subscales of the Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001), perception of others' high standards, and generalized self-efficacy. Correlational analyses revealed that the Discrepancy subscale of the APS-R was negatively related to generalized self-efficacy and positively related to psychological distress. In contrast, the Standards subscale was not significantly associated with psychological distress. Results of hierarchical regression analyses revealed significant interactions among discrepancy, generalized self-efficacy, and psychological distress. When discrepancy was high, the predicted value of psychological distress was higher when one had low personal standards and others' expectations were higher compared to cases in which others' expectations were low or when both the individual and others had high standards. Furthermore, when discrepancy was high, the predicted value of generalized self-efficacy was significantly lower when an individual had low personal standards and others had high expectations. Additional analyses indicated that generalized self-efficacy was a significant predictor of psychological distress and mediated the relationship between discrepancy and distress. According to the authors, the results of their study suggest that high standards alone do not contribute to distress and that individuals' perception that they are not meeting their high standards leads to unhealthy responses. Moreover, it appears that the relationship between discrepancy and psychological distress is particularly robust when individuals have low personal standards but perceive that others have high
expectations for them. Among these individuals, discrepancy also appears to significantly undermine their general confidence in their abilities, contributing to greater distress.

2.7 Procrastination and Self-Efficacy

While perfectionism has been viewed as a contributing factor to self-efficacy, procrastination has been studied as a behavioral consequence of self-efficacy. According to Bandura's self-efficacy theory, self-efficacy beliefs determine an individual's choice of activities, how much effort she or he will expend, and how long she or he will persist (Bandura, 1977). According to Bandura's model of self-efficacy, individuals high in self-efficacy are expected to be more likely to choose to engage in activities rather than avoid them, work harder in those activities, and persist longer when difficulties are encountered. Because procrastination can be interpreted as a type of avoidance behavior, higher levels of self-efficacy should be associated with low levels of procrastination, while lower levels of self-efficacy should be associated with more procrastination.

This proposed relationship was observed in a study conducted by Ferrari, Parker, and Ware (1992) in which a negative correlation between frequency of procrastination and self-efficacy was observed. Low levels of general self-efficacy were related to greater procrastination tendencies. The authors suggested that one interpretation of this result may be that frequent procrastinators believe they have little mastery over their own behavior. Results also indicated that self-efficacy was negatively correlated with the reasons for procrastination and with task aversiveness as a primary reason (Solomon & Rothblum, 1984). Multiple linear regression with MBTI type and self-efficacy entered as predictor variables and procrastination as the dependent variable found that only general self-efficacy was a significant predictor of the frequency of procrastination, reasons for
procrastination, and task aversiveness. Results of this study suggest that self-efficacy may be a significant predictor of academic procrastination.

Haycock, McCartney, and Skay (1998) developed their own measure of general self-efficacy for their study and examined the relationship between scores on this new instrument with scores of procrastination. Their analysis found that procrastination had a significant but negative relationship with self-efficacy level, cumulative self-efficacy strength, and average self-efficacy strength. When anxiety and self-efficacy were entered as predictor variables in multiple linear regression analysis with procrastination as the dependent variable, cumulative efficacy strength emerged as a significant and inverse predictor of procrastination. That is, individuals who reported stronger efficacy expectations tended to also report lower levels of procrastination. In sum, these results suggest that individuals who were less confident in their ability to succeed and who were more focused on completing their work quickly and without much effort had a greater tendency to procrastinate.

Wolters (2003) examined procrastination from a self-regulated learning perspective, including its relationship with self-efficacy. He found that students who reported greater self-efficacy and a goal orientation of mastery also reported less procrastination. Additionally, work-avoidance orientation and self-efficacy emerged as the two greatest predictors of procrastination. In sum, these results suggest that students who were less confident in their ability to succeed and who were more focused on completing their work quickly and without much effort had a greater tendency to procrastinate.
However, evidence has also been found suggesting that self-efficacy for academic
tasks is weakly associated with procrastination. Klassen, Krawchuk, and Rajani (2008)
explored relationships among procrastination, academic self-efficacy, self-regulation,
self-efficacy for self-regulation, and academic performance. According to the authors,
self-efficacy for self-regulation involves an individual's beliefs about her or his
capabilities to use various learning strategies, resist environmental distractions, plan and
organize tasks, and complete schoolwork (Klassen, 2007; Zimmerman, Bandura, &
Martinez-Pons, 1992). Results of correlational analysis revealed that procrastination was
inversely related to GPA, academic self-efficacy, self-regulation, and global self-esteem.
The strongest inverse relationship was found between self-efficacy for self-regulation and
procrastination, suggesting that students who indicated stronger beliefs in their
capabilities to regulate their learning environment were the least likely to procrastinate.
Furthermore, results of hierarchical multiple regression analysis revealed that GPA and
academic self-efficacy were not significant individual predictors of procrastination when
self-efficacy for self-regulation was entered; however, self-regulation and self-esteem
remained significant contributors to the prediction of procrastination. After accounting
for all variables, self-efficacy for self-regulation was the strongest individual predictor of
procrastination. In this study, academic self-efficacy was a weak predictor of
procrastination, whereas self-efficacy for self-regulation emerged as a significant
influence on academic procrastination.

2.8 Perfectionism, Self-Efficacy, and Procrastination

A study conducted by Yao (2005) examined the relationships among dimensions
of perfectionism, academic self-efficacy, and procrastination on academic tasks. The
study found significantly different levels of academic self-efficacy, frequency of procrastination, and reasons for engaging in procrastination among groups of Adaptive perfectionists, Maladaptive perfectionists, and Non-perfectionists. Specifically, Adaptive perfectionists reported less procrastination than did Non-perfectionists, while Maladaptive perfectionists on average reported engaging in procrastination more frequently than Adaptive perfectionists but less frequently than Non-perfectionists. However, these differences between Maladaptive perfectionists and the other groups were not significant, suggesting that while maladaptive perfectionism has been found to be destructive in previous studies (Rice & Slaney, 2002; Slaney, Rice, & Ashby, 2002), it may not be damaging with regard to more frequent procrastination in university students.

However, examination of reasons for engaging in procrastination found that Maladaptive perfectionists differed from both Adaptive perfectionists and Non-perfectionists in their self-reported reasons for engaging in procrastination. Maladaptive perfectionists indicated that they procrastinated on academic tasks due to Fear of Failure at higher rates than did the other groups. These individuals may be more likely use procrastination as a means to avoid tasks that test their abilities and that may potentially find them lacking. The study also found that Adaptive perfectionists were significantly less likely to report procrastinating due to task aversiveness and laziness in comparison to Maladaptive perfectionists and Non-perfectionists. However, both Maladaptive perfectionists and Non-perfectionists endorsed this reason for procrastination at similar rates.

With regard to differences in academic self-efficacy, Adaptive perfectionists reported higher levels of academic self-efficacy than both Maladaptive perfectionists and
Non-perfectionists. In contrast, Maladaptive perfectionists and Non-perfectionists reported levels of academic self-efficacy that were lower than those reported by Adaptive perfectionists but that were similar to each other. Thus, while a number of studies (Rice & Slaney, 2002; Slaney et al., 2001) have found that maladaptive perfectionists is problematic or harmful, this study suggested that this may not be the case with academic self-efficacy for university students.

2.8 Summary and Hypotheses

Numerous articles have examined the academic achievement patterns of Asian American students and investigated internal and external factors that may contribute to a pattern of high achievement. A prevalent theory highlights Asian cultural values as the primary contributors to this pattern of achievement; however, this theory relies on a great deal of speculation and little empirical evidence identifying the specific cultural values associated with achievement (Sue & Okazaki, 1990). In order to further develop the understanding of Asian American academic achievement and functioning, Asian cultural values were examined in relation to another construct associated with high achievement: perfectionism. Recent research and theories of perfectionism have expanded the conceptualization of perfectionism from a unidimensional construct with negative implications for psychological functioning (Blatt, 1995; Burns, 1980; Pacht, 1984) to a multidimensional concept, with both adaptive and maladaptive qualities (Frost et al., 1990; Hewitt & Flett, 1991; Slaney et al., 1996, 2001). However, few studies have examined the validity of these new definitions and measures with diverse samples. The present study contributes to the existing literature by exploring the multidimensional nature of perfectionism for Asian American college students using the Almost Perfect
Scale-Revised (APS-R; Slaney et al., 2001). Additionally, this study replicated a previous study (Yao, 2005) which related adaptive and maladaptive perfectionism as defined by the APS-R to procrastination and academic self-efficacy.

The present study examined the validity of the APS-R for Asian American college students and explored the factorial equivalence of the APS-R for this population. A second purpose of this study was to determine if the relationships among perfectionism, procrastination, and academic self-efficacy are similar to the previous results for a majority sample (Yao 2005). Additionally, cluster analysis of the APS-R was conducted among Asian American participants to distinguish groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists. Following classification of perfectionist groups, ANOVA was used to explore differences in academic self-efficacy, procrastination, and Asian American cultural values among groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists.

The following hypotheses were tested:

1. Evidence for the validity of the APS-R and its three subscales will be demonstrated through confirmatory factor analysis, reliability analysis, and test-retest reliability using a sample of Asian American participants.

2. Cluster analysis will identify groups of perfectionists (adaptive perfectionists and maladaptive perfectionists) and non-perfectionists that are not significantly different for Asian American students and Caucasian students.

3. Adaptive perfectionists will report less frequent procrastination and higher academic self-efficacy in comparison to maladaptive perfectionists and non-perfectionists. Maladaptive perfectionists will report more frequent
procrastination and lower self-efficacy than adaptive perfectionists and non-perfectionists.

4. Asian American cultural values will demonstrate different patterns of associations with multidimensional perfectionism. Higher scores on the perfectionism subscales will be associated with greater adherence to Asian cultural values.

5. Correlational analysis will demonstrate that the Standards dimension of perfectionism is associated with lower levels of procrastination and higher academic self-efficacy, whereas the Discrepancy dimension is associated with higher levels of procrastination and lower academic self-efficacy.
CHAPTER 3

Method

3.1 Participants

Participants were 316 individuals who self-identified as Asian or Asian American. The majority of participants in this sample were undergraduate students enrolled in an introductory psychology course at a large Midwestern university. Recruitment consisted of posting the experiment on the Research Experience Program website with a description of the participant prerequisites (e.g. identifies as Asian or Asian American) and general nature of the study. The study was titled Asian American Student Survey and participants were informed that the purpose was to collect data about their attitudes about themselves and their performance, their beliefs about their capabilities to perform academic tasks, their tendencies to procrastinate on academic tasks, and their adherence to Asian American cultural values. Participation partially fulfilled a course requirement, but can still be considered voluntary because alternate options were available in lieu of research participation. Additionally, data from 16 participants (5% of sample) were obtained via on-line collection by sending an e-mail message to Asian American college student organizations (e.g. Asian American Association, Chinese American Student Association, Pilipino Student Association) explaining the purpose and nature of this study and soliciting participants. Individuals from student organizations were informed that
they could choose to participate in a lottery drawing for a prize of a $25 gift card by submitting their email addresses following completion of the study.

The sample included 160 female (50.6%) and 156 male (49.4%) undergraduate students. Ages of participants ranged from 16 to 41 years, with a mean age of 19.26 (SD = 2.03). The majority of the participants (61.1%) were in their first year of college, with 19.6% sophomores, 9.2% juniors, 8.9% seniors, and 0.6% graduate or professional students. Additionally, 0.6% of the participants did not indicate their academic standing.

A total of 288 (91.1%) of the participants identified their race as only Asian or Asian American. Participants were also permitted to select multiple categories to describe their racial identity. Nineteen individuals (6.0%) identified as Asian/Asian American and Caucasian, four individuals (1.3%) identified as Asian/Asian American and African American, and four individuals (1.3%) identified their race as Asian/Asian American and Pacific Islander. One participant listed ethnicity as ‘other’ and did not elaborate this response. When asked about the specific ethnic groups to which they belonged, 20.9% of participants identified as Asian Indian, 24.1% as Chinese, 20.3% as Korean, 6.3% as Taiwanese, 5.1% as Filipino/Filipina, 4.1% as Vietnamese, 4.1% as Japanese, 1.6% as Pakistani, and 1.3% as Malaysian. This sample also included small numbers of Cambodian (0.9%), Laotian (0.9%), and Thai (0.6%) participants. Individuals were given the option of identifying with multiple ethnic groups, and several indicated ethnic group pairings including Chinese and Vietnamese (3.2%), Chinese and Taiwanese (1.9%), Chinese and Japanese (1.6%), Chinese and Thai (0.6%), Chinese and Indonesian (0.6%), and Laotian and Thai (0.6%).
Participants were also asked to indicate their generational status. A total of 33.2% identified as first generation, 14.9% as 1.5 generation, 45.9% as second generation, 1.6% as third generation, 3.2% as fourth generation, and 1.3% as fifth generation. The mean number of years in residence in the United States was 13.34 ($SD = 7.07$) with a minimum of zero years and a maximum of 25 years in residence.

3.2 Instruments

Five instruments were administered to participants, including the Asian American Values Scale-Multidimensional, the Almost Perfect Scale-Revised, the Procrastination Assessment Scale-Students, the Academic Self-Efficacy Scale, and the Marlowe-Crowne Social Desirability Scale. Additionally, participants completed a brief demographic questionnaire prior to the administration of the other instruments. Because the on-line survey host did not allow variations in instrument organization, instruments were presented in a predetermined order: demographic questionnaire, Almost Perfect Scale-Revised, Procrastination Assessment Scale-Students, Academic Self-Efficacy Scale, Asian American Values Scale-Multidimensional, and Social Desirability Scale. The order of administration was determined by the significance of the measure to this study’s hypotheses. Because this study focused on finding evidence for the validity of the Almost Perfect Scale-Revised for use with Asian American students, this measure was presented prior to the other instruments.

3.2.1 Perfectionism

The Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) was used to assess levels and dimensions of perfectionism. The revised version of the Almost Perfect Scale consists of 23 items designed to assess both adaptive
and maladaptive components of perfectionism (Appendix G). The APS-R contains three subscales for High Standards (7 items), Order (4 items), and Discrepancy (12 items). Sample items include ‘I expect the best from myself’ (High Standards), ‘I like to always be organized and disciplined’ (Order), and ‘My performance rarely measures up to my standards’ (Discrepancy). Participants respond to the items using a 7-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (7). Each subscale is scored independently by summing the individual item values. Total scores for the entire instrument range from 23 to 161. Total scores for the subscales range from 7 to 49 for Standards, 4 to 28 for Order, and 12 to 84 for Discrepancy. Higher scores on the subscales indicate higher levels of standards, order, and discrepancy. Total score for overall perfectionism and subscale scores were used in the current study.

Groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists were identified using cluster analysis. The procedure used in this study was based on procedures used by researchers who have used cluster analysis to identify perfectionists in previous studies (Grzegorek, et al., 2004; Rice & Mirzadeh, 2000; Rice & Slaney, 2002). Consistent with these previous studies, a two-step procedure using hierarchical and nonhierarchical analyses was performed.

Coefficient alphas for the High Standards, Order, and Discrepancy subscales were reported as .85, .86, and .92, respectively (Slaney, et al., 2001). Ashby and Rice (2000) reported similar reliability coefficients of .84 for Standards, .85 for Order, and .93 for Discrepancy. Test-retest correlations were reported to be adequate over a period of three weeks: .72 for Standards, .80 for Order, and .83 for Discrepancy (Grzegorek, Slaney, Franze, & Rice, 2004). Construct validity for the scale was established by comparing
scores on the individual subscales with selected subscales of the Hewitt and Flett (1991) Multidimensional Perfectionism Scale (HMPS) and the Frost et al. (1990) Multidimensional Perfectionism Scale (FMPS). The Standards subscale was significantly correlated with the Self-Oriented Perfectionism subscale of the HMPS ($r = .55$) and the Personal Standards dimension of the FMPS ($r = .64$). Discrepancy was significantly correlated with both Self-Oriented and Socially Prescribed Perfectionism ($r = .23$ and .45, respectively) from the HMPS and Concern over Mistakes and Doubts about Actions ($r = .55$ and .62, respectively) from the FMPS.

3.2.2 *Procrastination*

Because this study used a sample of college students, academic functioning was the main area of focus. In order to assess the procrastination tendencies of participants, Solomon and Rothblum’s (1984) Procrastination Assessment Scale—Students (PASS) was administered. The 52-item PASS (Appendix H) consists of two parts assessing (a) the self-reported frequency of procrastination and the extent to which procrastination results in distress; and (b) cognitive-behavioral reasons for procrastination.

The first section of the PASS consists of 18 items assessing the prevalence of procrastination in six academic activities: writing a term paper, studying for exams, keeping up with weekly reading assignments, academic administration tasks, attendance tasks, and school activities in general. Examples of academic administration tasks include getting an ID card, registering for classes, and filling out forms. Attendance tasks include making an appointment with a professor and meeting with your advisor. Participants rate the degree to which they procrastinate on a task using a 5-point Likert scale. The scale ranges from *Never Procrastinate* (a) to *Always Procrastinate* (e). Participants also
indicate the extent to which procrastination on the task is considered a problem, from *Not At All a Problem* (a) to *Always a Problem* (e). Finally, participants report to what degree they want to decrease their tendency to procrastinate on the task, from *Do Not Want To Decrease* (a) to *Definitely Want To Decrease* (e). The PASS is scored by assigning a numerical value to the scale for each question such that a = 1, b = 2, c = 3, d = 4, and e = 5. The first two questions of each of the six procrastination areas are then summed to provide a total score ranging from 12 to 60. A higher score is more indicative of self-reported procrastination.

Several researchers have reported coefficient alphas for procrastination frequency as .75 (Ferrari, 1989), .71 (Brownlow and Reasinger, 2000), and .84 (Onwuegbuzie, 2000). Ferrari (1989) also assessed test-retest reliability of the PASS over a six-week interval, and reported a correlation coefficient of .74 for prevalence. Convergent validity was established through measuring significant relationships with problem avoidance ($r = .32$; Bridges & Roig, 1997), self-handicapping ($r = .53$; Beck, Koons, & Milgrim, 2000), and behavioral delay ($r = .25$; Milgrim, Marshevsky, & Sadeh, 1995).

### 3.2.3 Academic Self-Efficacy

According to Bandura’s original model of self-efficacy, the construct is domain-specific, and therefore a specific scale is required to measure self-efficacy in the academic area. Thus, academic self-efficacy of participants was assessed using a revised version of Wood and Locke’s Academic Self-Efficacy Scale (ASE; 1987), found in Appendix I. The ASE is a traditional measure of self-efficacy designed to assess magnitude, or the level at which an individual believes she or he can perform, and strength, or the individual’s level of confidence that she or he can perform at that level.
(Bandura, 1977; Wood & Locke, 1987). The ASE examines seven areas of academic performance: class concentration, memorization, exam concentration, understanding, explaining, discriminating concepts, and note taking. Items include four to five levels of performance for each task area, for example concentrate for at least 50% (or 70%, 90%, or 100%) of a class period or memorize 50% (or 70%, 90%, or 100%) of the facts and concepts. Participants are required to indicate “can do” at each performance level and then indicate level of confidence judgment ranging from Totally Unconfident (0) to Totally Confident (10).

Although the original version of the ASE uses this traditional format to measure self-efficacy, the majority of current self-efficacy measures (e.g. Lent, Brown, & Larkin, 1984; Brown, Lent, & Larkin, 1989) use a Likert-scale format, which essentially combines the participant’s indication that they can perform at a certain level and their assessment of confidence at that level (Maurer & Pierce, 1998). The ASE was converted to a Likert-scale format by Maurer and Pierce (1998), who rewrote the original items as statements of personal capability such as “I can memorize 60% of the facts and concepts” and “I can memorize 70% of the facts and concepts.” A similar format was used in the current study. Participants indicated their responses using a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Each subscale was scored by combining the item responses for per subscale, with scores ranging from 5 to 25. A total scale score was obtained by combining the subscale scores, with total scores ranging from 33 to 165.

Similarity of the traditional format and the Likert-scale format was tested by assessing the reliability and predictive validity of the two formats (Maurer & Pierce,
Relationships of self-efficacy and the criteria of expected grade, grade point average, and SAT scores were not significantly different across formats. Using the Likert-scale format, Maurer and Pierce (1998) reported a Cronbach coefficient alpha of .80 for the entire ASE scale, a result which was not significantly different from the coefficient alpha of .80 found for the traditional format.

3.2.4 Asian American cultural values

The Asian American Values Scale-Multidimensional (AAVS-M; Kim, Li, & Ng, 2005) was used to measure adherence to Asian cultural values and can be found in Appendix J. The AAVS-M is a 42-item self-report measure containing five subscales assessing Collectivism (7 items, 3 reverse scored), Conformity to Norms (7 items, 1 reverse scored), Emotional Self-Control (8 items, 3 reverse worded), Family Recognition Through Achievement (14 items, 2 reverse worded), and Humility (6 items, 1 reverse worded). Sample items include ‘One should recognize and adhere to the social expectations, norms and practices’ (Conformity to Norms); ‘One’s academic and occupational reputation reflects the family’s reputation’ (Family Recognition Through Achievement); and ‘One should not express strong emotions’ (Emotional Self-Control). Participants indicate their responses to items using a seven-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (7). In order to obtain subscale scores, appropriate items are reverse scored and the scores on all of the items in each subscale are summed. The subscale scores are then added together to obtain a total score for the complete measure. Total scores for the entire instrument range from 42 to 294. Total scores on the subscales range from 6 to 42 for Humility, 7 to 49 for Collectivism and Conformity to Norms, 8 to 56 for Emotional Self-Control, and 14 to 98 for Family
Recognition Through Achievement. For the current study, the total score for Asian American values and subscale scores for the specific values were used in analyses of the relationships among the variables of interest.

Kim et al. (2005) reported coefficient alphas for the AAVS-M total and subscales (Collectivism, Conformity, Emotional Self-Control, Family Recognition Through Achievement, and Humility) of .89, .80, .79, .80, .90, and .81, respectively. Two-week test-retest reliability coefficients for the AAVS-M total and subscales (Collectivism, Conformity, Emotional Self-Control, Family Recognition Through Achievement, and Humility) were reported as .92, .73, .76, .92, .92, and .81, respectively. Concurrent validity of the AAVS-M was established by comparing total and subscale scores with scores on the Asian Values Scale (AVS; Kim, Atkinson, & Yang, 1999) and the Attitudes Toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF; Fischer & Farina, 1995). As the researchers expected, a significant positive relationship was found between the AAVS-M total scores and the AVS scores ($r = .82$). Additionally, results revealed significant negative correlations for the AAVS-M total, Emotional Self-Control, and Humility scores when compared with the ATSPPH-SF ($r = -.33$ for AAVS-M total; $r = -.46$ for Emotional Self-Control; $r = -.24$ for Humility), consistent with previous studies indicating that adherence to Asian cultural values is related to less positive help-seeking attitudes (Kim & Omizo, 2003). Discriminant validity was revealed by the lack of significant correlations found between the AAVS-M total and subscales scores and scores on the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1968).

3.2.5 Social Desirability
In order to assess the effects of socially desirable responding, the 33-item Marlowe-Crowne Social Desirability Scale (SDS; Crowne & Marlowe, 1960) was also administered to participants. This measure was used to determine if adaptive perfectionists, maladaptive perfectionists, and non-perfectionists differ in their tendencies to respond to items assessing their academic behaviors in a socially desirable manner. Additionally, any associations between socially desirable responding and Asian cultural values were examined. Items on the scale are intended to represent behaviors that are either socially desirable but uncommon of most people or behaviors that are very common but not socially approved. Sample items include ‘I always like to practice what I preach’ and ‘I never hesitate to go out of my way to help someone in trouble.’ A scoring key in which socially desirable answers are indicated was used to score participants’ responses. A higher score on the scale indicates a greater tendency to respond in a socially desirable manner.

In their initial development of the instrument, the authors obtained a Kuder-Richardson reliability coefficient of .88. A test-retest correlation of .89 was reported after a four week interval. Scores on the SDS were significantly correlated with scores on the Edwards Social Desirability Scale ($r = .35$). Crowne and Marlowe established discriminant validity by comparing the correlation coefficients between scores on the SDS and scores on the MMPI with the correlation coefficients between scores on the ESDS and scores on the MMPI. The correlations for scores on the Edwards scale were consistently higher than those for the SDS scores, which the authors interpreted as evidence that the two measures of social desirability were assessing different aspect of the construct.
3.2.6 **Demographic Questionnaire**

A brief questionnaire (Appendix F) requesting age, gender, class standing, race, ethnicity, and years spent in the United States was distributed to all participants. Participants were also asked to indicate their generational status, ranging from first to fifth generation. For this study, participants were permitted to select 1.5 generation, defined as being born outside of the United States but spending more than two-thirds of one's life living in the United States.

3.3 **Procedure**

All participants were required to complete the study online. The study was hosted online by SurveyMonkey, an internet survey software company. SurveyMonkey provided a URL and server space for the data to be stored temporarily until administration was completed. Prior to completing the surveys, the participants were shown an informed consent statement and were asked to click a box to indicate their consent. Additionally, participants were notified that they could choose to skip any question that they did not wish to answer. An indicator was placed at the bottom of each page informing participants of their progress through the study (i.e. the number of measures remaining to be completed). Following completion of the study, the participants were provided with a detailed debriefing statement which described the purpose of the study and listed the contact information of the researchers. They were also instructed to submit a specific code number in order to receive course credit for their participation.

Participants who had been solicited through campus student organizations were instructed
to submit their email addresses if they were interested in being included in a lottery
drawing and have the chance to win a $25 gift card.

Although there are strengths to the method of Internet data collection, such as
obtaining a demographically diverse sample, this method may result in erroneous data if
certain precautions are not taken (Schmidt, 1997). In order to minimize the possibility
that erroneous data would be obtained, several strategies were utilized during data
collection. Initially, e-mail addresses were screened to ensure that the same individual did
not submit the survey multiple times. Additionally, as recommended by Schmidt (1997)
and Dillon and Worthington (2003), duplicate surveys were screened by examining the
date, time, and origin of submission for each survey. In order to control for the
submission of inaccurate information, inattentiveness, and random responding, several
items were included throughout the survey as a validity check. Two items asked
participants to indicate their race (to screen out those who are not Asian American), and
participants were instructed to provide specific responses to five filler items. For
example, the instructions for one validity item read ‘Please respond ‘neutral’ to this
statement.’ Instructions for another item read ‘Please do NOT provide a response to this
statement.’ A participant’s responses were removed from the data analyses if the individual
answered two or more of the validity items incorrectly.

3.4 Data Analyses

Descriptive statistics, including means and standard deviations, were obtained for
each measure. Internal consistency reliability coefficients were also calculated.

Confirmatory factor analysis was used to determine if the data from the Asian
American sample demonstrated support for the three-factor structure of the APS-R
Cluster analysis was conducted in order to distinguish between groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists based on their scores on the Standards and Discrepancy subscales. The cluster analysis procedure used in this study was modeled after procedures used in previous studies (Grzegorek, et al., 2004; Rice & Mirzadeh, 2000; Rice & Slaney, 2002).

Following this procedure, a one-way multivariate analysis of variance (MANOVA) was conducted to determine if differences exist in Asian American cultural values, frequency of procrastination, and academic self-efficacy among groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists. One-way analyses of variance (ANOVA) were used to analyze any differences found among the groups, followed by Post hoc Tukey B tests. Correlational analyses were conducted to examine the relationships among the subscales of the APS-R, PASS, ASE, AAVS-M, and SDS. The results from the APS-R in this sample of Asian American students were compared to the results of Caucasian participants in Yao (2005).
CHAPTER 4

Results

Results are presented for a total of 316 participants who self-identified as Asian or Asian American. Originally, data was collected from 326 participants; however, the results from three participants were removed from this study because they identified their race as Caucasian rather than Asian or Asian American. Additionally, data from seven participants were removed from analyses because the participants answered two or more of the validity items incorrectly. Of the remaining 316 participants, 11 individuals completed the Almost Perfect Scale-Revised but omitted one or more of the other measures used in this study. Their data were used in reliability and factor analyses but excluded from the remainder of analyses. Total scale and subscale means were calculated and substituted for missing values.

4.1 Factor Analysis

Confirmatory factor analysis (CFA) was performed using the Amos 16.0 program (Arbuckle, 2007). Maximum likelihood was the estimation method and covariation matrices were analyzed. Model fit was informed by the comparative fit indices (CFI), the standardized root-mean-square residual (SRMR), and the root-mean-square-error or approximation (RMSEA). A generally accepted guideline for fit indices is that the CFI value should be at least .90 (Kline, 2005) to demonstrate acceptable fit of the data to the model. RMSEA values less than .05 indicate a close fit, between .05 and .08 reveal a fair
fit, between .08 and .10 are suggestive of a mediocre fit, and values above .10 indicate a poor fit to the model (MacCallum, Browne, & Sugawara, 1996). SRMR values less than or equal to .08 are preferred (Hu & Bentler, 1999).

The CFA model restricted the seven APS-R items tapping the Standards subscale to load onto a Standards factor, four items to load onto the Order factor, and 12 items to load onto a Discrepancy factor. Modification indices for regression weights were inspected and indicated a few possible changes. Changes made to the model based on modification indices did not improve the RMSEA, therefore the initial model was retained (Figure 1). The fit statistics for the model were $\chi^2 (227, N = 316) = 669.9, p<.01$, CFI =.88, SRMR = .08, RMSEA = .079 (90% Confidence Interval .072-.086). These fit indices seem to suggest that the data from this sample of Asian American participants support the hypothesized three-factor structure of the APS-R.
Figure 1: Confirmatory Factor Analysis of the APS-R Subscale Scores.
Note: S = Standards items; O = Order items; D = Discrepancy items
4.2 Reliability Analysis

Table 4.1 shows the results of the internal consistency reliability coefficient alphas for the measures of multidimensional perfectionism, academic procrastination, academic self-efficacy, Asian American cultural values, and social desirability. As shown in the Table, coefficient alphas have been reported for the three subscales of the Almost Perfect Scale-Revised (APS-R) in addition to the total scale score (Slaney et al., 2001) for this sample of Asian American college students. Additionally, coefficient alphas have been reported for the complete Asian American Values Scale-Multidimensional (AAVS-M) in addition to the five subscales. Internal consistency reliability was also calculated for the entire Academic Self-Efficacy Scale (ASES; Wood & Locke, 1987) and the individual academic tasks as well as for the Marlowe-Crowne Social Desirability Scale (SDS). Coefficient alphas for all of the measures ranged from .71 (Grades subscale of the ASES) to .94 (Total score of the ASES). Reliabilities greater than .70 are considered minimum for research purposes (Walsh & Betz, 2001).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of items</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Perfect Scale-Revised</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>23</td>
<td>.87</td>
</tr>
<tr>
<td>Standards</td>
<td>7</td>
<td>.87</td>
</tr>
<tr>
<td>Order</td>
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<td>.80</td>
</tr>
<tr>
<td>Discrepancy</td>
<td>12</td>
<td>.92</td>
</tr>
</tbody>
</table>

N = 305.

Table 4.1: Coefficient alphas for the Almost Perfect Scale-Revised, Procrastination Assessment Scale-Students, Academic Self-Efficacy Scale, Asian American Values Scale-Multidimensional, and Marlowe-Crowne Social Desirability Scale.
Table 4.1 continued

<table>
<thead>
<tr>
<th>Scale</th>
<th>Frequency</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Procrastination Assessment Scale-Students</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>12</td>
<td>.87</td>
</tr>
<tr>
<td><strong>Academic Self-Efficacy Scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>33</td>
<td>.94</td>
</tr>
<tr>
<td>Class Concentration</td>
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<td>.81</td>
</tr>
<tr>
<td>Memorization</td>
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<td>.89</td>
</tr>
<tr>
<td>Exam Concentration</td>
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<td>.81</td>
</tr>
<tr>
<td>Understanding</td>
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<td>.80</td>
</tr>
<tr>
<td>Explaining Concepts</td>
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<td>Discriminating Concepts</td>
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<tr>
<td>Notetaking</td>
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<td>.88</td>
</tr>
<tr>
<td>Grades</td>
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<td>.71</td>
</tr>
<tr>
<td><strong>Asian American Values Scale</strong></td>
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<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>42</td>
<td>.89</td>
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<tr>
<td>Collectivism</td>
<td>7</td>
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<tr>
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<td>Emotional Self-Control</td>
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<tr>
<td>Family Recognition Through Achievement</td>
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</tr>
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<td>Humility</td>
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<td>.73</td>
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<tr>
<td><strong>Marlowe-Crowne Social Desirability Scale</strong></td>
<td>33</td>
<td>.77</td>
</tr>
</tbody>
</table>

4.3 Test-Retest Analysis

A version of the survey was re-administered to 20 randomly chosen participants from the introductory psychology course approximately five weeks after the initial administration to obtain data to assess the stability of the APS-R over time. This study hypothesized that the APS-R would demonstrate adequate test-retest reliability. Coefficient alphas for the total scale, Standards, Discrepancy, and Order were .88, .87, .93, and .91, respectively. Correlational analysis of both sets of results revealed significant relationships between the total scale score and subscale scores from Time 1 and Time 2. Results are presented in Table 4.2. Additionally, a paired-samples $t$-test was conducted to examine significant differences across administrations of the scale. Results
of this analysis indicate that no significant differences occurred across times for the total scale score \((t[19] = .17, p = .87)\), Standards \((t[19] = 1.69, p = .11)\), Order \((t[19] = -1.78, p = .09)\), or Discrepancy \((t[19] = -.12, p = .91)\).

Although the paired samples \(t\)-test results and coefficients of stability were statistically significant, the correlation coefficients for the total scale, Standards, and Discrepancy were below .70, a suggested minimum value for test-retest reliability of psychological measures (Nunnally, 1978). These findings suggest that participants' scores for the total scale and Standards and Discrepancy subscales were not consistent over time and that perfectionism may not be a stable personality trait. Alternately, the inconsistency of test-retest results may be the result of using a small sample or idiosyncrasies of this sample.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
<td>(M)</td>
<td>(SD)</td>
<td>(t)</td>
<td>(r)</td>
</tr>
<tr>
<td>Almost Perfect Scale-Revised</td>
<td>113.65</td>
<td>17.38</td>
<td>113.00</td>
<td>16.81</td>
<td>.17</td>
<td>.50*</td>
</tr>
<tr>
<td>Standards</td>
<td>42.55</td>
<td>3.09</td>
<td>40.85</td>
<td>4.86</td>
<td>1.69</td>
<td>.43*</td>
</tr>
<tr>
<td>Discrepancy</td>
<td>49.50</td>
<td>15.77</td>
<td>49.85</td>
<td>14.22</td>
<td>-.12</td>
<td>.63**</td>
</tr>
<tr>
<td>Order</td>
<td>21.60</td>
<td>3.60</td>
<td>22.3</td>
<td>3.70</td>
<td>-1.79</td>
<td>.89**</td>
</tr>
</tbody>
</table>

\(N=20\).

\(*p<.05, **p<.01\)

Table 4.2 Means, Standard Deviations, and Correlations for the Almost Perfect Scale-Revised, Standards, Discrepancy, and Order across two administration periods.
4.4  *Cluster Analysis*

Cluster analysis was used on the total sample of participants in order to identify groupings of perfectionists and non-perfectionists based on their scores on the subscales of the APS-R. The procedure used in this study was based on procedures used by researchers who have used cluster analysis to identify perfectionists in previous studies (Grzegorek, et al., 2004; Rice & Mirzadeh, 2000; Rice & Slaney, 2002). Consistent with these previous studies, a two-step procedure using hierarchical and nonhierarchical analyses was performed.

Hierarchical cluster analysis using Ward's linkage method and the squared Euclidian distance measure was first performed to determine groupings. APS-R subscale scores were standardized and used throughout subsequent analyses. Within-cluster sums of squares were used to assess the internal homogeneity of the various cluster solutions. The resulting agglomeration solution provided support for either a three-cluster or six-cluster solution. Examination of the change in agglomeration coefficients yielded a 35.6% change for the three-cluster solution and a 13.8% change for the six-cluster solution. Due to the stronger support for the three-cluster solution and its consistency with theoretical expectations, this solution was used as the basis for subsequent steps in the analysis.

The three-cluster solution resulting from the previous step was incorporated into a nonhierarchical k-means cluster analysis. The centroids (i.e., the standardized APS-R subscale means) from the three-cluster solution were used as the initial starting points in the k-means cluster analysis. Three clusters were specified for the analysis, and a solution converged in 10 iterations. The nonhierarchical analysis placed 86 participants in the first
cluster (27%), 142 participants in the second cluster (45%), and 88 participants in the third cluster (28%). Cluster membership did not differ significantly by gender $\chi^2(2, N = 316) = .88, p = .65$.

Cluster labels were determined by calculating between-cluster tests of mean differences of non-standardized APS-R subscale scores. Clusters 1 and 3 were identified as groups of perfectionists by virtue of their high Standards and Order mean scores, whereas Cluster 2 was labeled the non-perfectionist group due to their relatively lower scores on these subscales. Discrepancy scores were used to distinguish between adaptive and maladaptive perfectionists. Due to their high Discrepancy scores, Cluster 1 appeared to be composed of maladaptive perfectionists, while the group with low Discrepancy scores (Cluster 3) was identified as adaptive perfectionists.

4.5 *Analysis of Variance*

The mean and standard deviation results for each scale as well as the socially desirable responding measure were calculated for all subjects and then separately for adaptive perfectionists, maladaptive perfectionists, and non-perfectionists. Data were analyzed using a one-way multivariate analysis of variance (MANOVA) in order to determine significant differences among the different groups. The between subjects factor was perfectionism cluster (adaptive perfectionists, maladaptive perfectionists, and non-perfectionists). The dependent variables were the total scale score and subscales of the APS-R (Standards, Order, and Discrepancy), total scale score and subscales of the AAVS (Collectivism, Conformity, Emotional Self-Control, Family Recognition Through Achievement, and Humility), Procrastination Frequency, Academic Self-Efficacy, and Socially Desirable Responding. It was hypothesized that adaptive perfectionists would
report higher academic self-efficacy and lower procrastination scores compared to maladaptive perfectionists and non-perfectionists. The results are presented in Table 4.3.

The overall multivariate model was significant (Wilks' $\lambda = .14$, $F(2, 304) = 44.52$). Results of separate one-way univariate analyses of variance (ANOVA) revealed significant differences on all of the dependent variables with the exception of the Collectivism subscale of the AAVS. Effect sizes for the statistically significant mean differences were estimated using partial eta squared calculations which ranged from .01 (Collectivism) to .84 (Discrepancy). Based on Cohen's (1988) criteria, these effect sizes range from small (.01-.05) to large (.14 or larger).

Tukey $B$ tests were selected as the planned comparison post-hoc tests. The post-hoc Tukey $B$ tests of the APS-R indicated that the adaptive perfectionists, maladaptive perfectionists, and non-perfectionists differed significantly from each other in APS-R total scale scores. Maladaptive perfectionists ($M = 130.76$, $SD = 11.33$) had the highest total scores compared to both adaptive perfectionists ($M = 96.21$, $SD = 9.94$) and Non-Perfectionists ($M = 107.69$, $SD = 11.05$). Regarding the subscales of the APS-R, adaptive perfectionists ($M = 42.59$, $SD = 5.73$) and maladaptive perfectionists ($M = 42.36$, $SD = 4.89$) reported significantly higher mean scores on the Standards subscale compared to non-perfectionists ($M = 39.17$, $SD = 6.64$). All three groups reported significantly different mean scores on the Discrepancy subscale. The adaptive perfectionists reported the lowest mean score ($M = 31.92$, $SD = 5.94$), maladaptive perfectionists had the highest mean score ($M = 66.74$, $SD = 7.00$), and non-perfectionists had scores that fell between those of the two perfectionist groups ($M= 48.02$, $SD = 4.76$). Mean scores for the Order subscale did not differ significantly among the three groups.
Post hoc Tukey B tests also revealed differences among the groups on the PASS. As hypothesized, adaptive perfectionists ($M = 32.46, SD = 6.33$) reported less frequent procrastination than both maladaptive perfectionists ($M = 36.52, SD = 9.12$) and non-perfectionists ($M = 35.50, SD = 7.09$). However, the mean scores of procrastination frequency for maladaptive perfectionists and non-perfectionists did not significantly differ from one another.

A similar pattern emerged upon examination of differences in scores on the ASES. Adaptive perfectionists ($M = 134.07, SD = 16.42$) reported significantly higher academic self-efficacy than both maladaptive perfectionists ($M = 119.73, SD = 19.67$) and non-perfectionists ($M = 122.45, SD = 18.76$). In contrast, the mean scores of academic self-efficacy for maladaptive perfectionists and non-perfectionists were not significantly different.

Results of Tukey B tests also revealed significant differences among the groups for the AAVS-M total scores. Maladaptive perfectionists ($M = 187.19, SD = 30.50$) reported the highest mean score for the complete scale compared to adaptive perfectionists ($M = 168.08, SD = 27.85$) and non-perfectionists ($M = 176.54, SD = 23.68$), whose mean scores differed significantly from one another. These results indicate that maladaptive perfectionists reported the highest level of adherence to Asian American cultural values in comparison to other groups. Further examination of the AAVS-M subscales revealed additional disparities among the three groups. For the Emotional Self-Control subscale of the AAVS-M, adaptive perfectionists ($M = 25.87, SD = 7.44$) reported the lowest mean score, maladaptive perfectionists ($M = 31.79, SD = 8.52$) reported the highest mean score, and non-perfectionists ($M = 29.21, SD = 7.63$) reported
a mean score that fell between those of the two perfectionist groups. These findings signify that maladaptive perfectionists tended to endorse statements related to the importance of controlling one's emotions and restricting overt expression of one's feelings at higher levels compared to adaptive perfectionists and non-perfectionists.

Furthermore, maladaptive perfectionists ($M = 70.71$, $SD = 14.44$) reported the highest mean score for the Family Recognition Through Achievement subscale compared to adaptive perfectionists ($M = 64.33$, $SD = 15.80$) and non-perfectionists ($M = 65.92$, $SD = 12.77$), whose mean scores were not significantly different from each other. Post-hoc test results for the Conformity and Humility subscales of the AAVS-M demonstrated similar patterns across groups. For the Conformity subscale, adaptive perfectionists ($M = 26.26$, $SD = 7.68$) reported a significantly lower mean score than maladaptive perfectionists ($M = 29.01$, $SD = 7.90$). However, neither group's scores were significantly different than the mean score of non-perfectionists ($M = 28.13$, $SD = 6.31$). Adaptive perfectionists ($M = 22.29$, $SD = 5.32$) also reported significantly lower Humility compared to maladaptive perfectionists ($M = 24.71$, $SD = 6.22$) but neither group's scores were significantly different from the mean score reported by non-perfectionists ($M = 23.81$, $SD = 5.40$). Mean scores of Collectivism were not significantly different among the groups. These patterns of scores indicate that adaptive perfectionists and non-perfectionists reported similar levels of adherence to values related to the importance of enhancing family status through one's accomplishments, conformity to group norms, and being humble and modest, while maladaptive perfectionists adhered to these same values at significantly higher levels than both groups.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Adaptive Perfectionists (N = 85)</th>
<th>Maladaptive Perfectionists (N = 85)</th>
<th>Non-Perfectionists (N = 135)</th>
<th>F</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Perfect Scale-Revised Standards</td>
<td>42.59 (SD = 5.73)</td>
<td>42.36 (SD = 4.89)</td>
<td>39.17 (SD = 6.64)</td>
<td>11.66**</td>
<td>.07</td>
</tr>
<tr>
<td>Discrepancy</td>
<td>31.92 (SD = 5.94)</td>
<td>66.74 (SD = 7.00)</td>
<td>48.02 (SD = 4.76)</td>
<td>771.41**</td>
<td>.84</td>
</tr>
<tr>
<td>Order</td>
<td>21.71 (SD = 4.28)</td>
<td>21.66 (SD = 3.86)</td>
<td>20.50 (SD = 3.86)</td>
<td>3.34*</td>
<td>.02</td>
</tr>
<tr>
<td>Procrastination Assessment Scale-Students</td>
<td>32.46 (SD = 6.33)</td>
<td>36.52 (SD = 9.12)</td>
<td>35.50 (SD = 7.09)</td>
<td>6.87*</td>
<td>.04</td>
</tr>
<tr>
<td>Academic Self-Efficacy Scale</td>
<td>134.07 (SD = 16.42)</td>
<td>119.73 (SD = 19.67)</td>
<td>112.04 (SD = 19.00)</td>
<td>15.33**</td>
<td>.09</td>
</tr>
<tr>
<td>Asian American Values Scale-Multidimensional Collectivism</td>
<td>29.33 (SD = 6.51)</td>
<td>30.98 (SD = 7.44)</td>
<td>29.47 (SD = 6.04)</td>
<td>1.74</td>
<td>.01</td>
</tr>
<tr>
<td>Conformity</td>
<td>26.26 (SD = 7.68)</td>
<td>29.01 (SD = 7.90)</td>
<td>28.13 (SD = 6.31)</td>
<td>3.31*</td>
<td>.02</td>
</tr>
<tr>
<td>Emotional Self-Control</td>
<td>25.87 (SD = 7.44)</td>
<td>31.79 (SD = 8.52)</td>
<td>29.21 (SD = 7.63)</td>
<td>12.22**</td>
<td>.08</td>
</tr>
<tr>
<td>Family Recognition Through Achievement</td>
<td>64.33 (SD = 15.80)</td>
<td>70.71 (SD = 14.44)</td>
<td>65.92 (SD = 12.77)</td>
<td>4.81**</td>
<td>.03</td>
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<tr>
<td>Humility</td>
<td>22.29 (SD = 5.32)</td>
<td>24.71 (SD = 6.22)</td>
<td>23.81 (SD = 5.40)</td>
<td>4.03*</td>
<td>.03</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>17.99 (SD = 6.02)</td>
<td>15.89 (SD = 4.90)</td>
<td>14.97 (SD = 4.95)</td>
<td>7.02*</td>
<td>.04</td>
</tr>
</tbody>
</table>

$N = 305.$  
*p<.05, **p<.01.

Table 4.3: Means, Standard Deviations, and Perfectionism Group Comparisons on the Almost Perfect Scale-Revised, Procrastination Assessment Scale-Students, Academic Self-Efficacy Scale, Asian American Values Scale-Multidimensional, and Marlowe-Crowne Social Desirability Scale.
4.6 Correlational Analysis

Pearson $r$ correlation coefficients among all measures and for all participants are presented in Table 4.4. As hypothesized, the Standards subscale of the APS-R demonstrated a significant positive correlation with Academic Self-Efficacy ($r = .39$, $p < .01$) and a significant negative correlation with Procrastination Frequency ($r = -.26$, $p < .01$). These results indicate that higher Standards scores were associated with higher academic self-efficacy scores and lower procrastination scores, a pattern that provides support for the argument that Standards represents the adaptive dimension of perfectionism (Slaney et al., 2001). Standards was also significantly correlated with the Family Recognition Through Achievement subscale of the AAVS-M ($r = .30$, $p < .01$). This finding implies that higher scores on the Standards subscale were related to greater adherence to the value of enhancing one's family's reputation through one's success.

Discrepancy was significantly and positively associated with Procrastination Frequency ($r = .22$, $p < .01$) but negatively correlated with Academic Self-Efficacy ($r = -.54$, $p < .01$), indicating that higher Discrepancy scores were related to more frequent academic procrastination and lower confidence in one's capabilities to successfully perform academic tasks. These results are consistent with conceptualizations of Discrepancy as the problematic dimension of perfectionism (Slaney et al., 2001). Additionally, Discrepancy was significantly correlated with several subscales of the AAVS-M, including Conformity ($r = .15$, $p < .01$), Emotional Self-Control ($r = .27$, $p < .01$), Family Recognition Through Achievement ($r = .17$, $p < .01$), and Humility ($r = .15$, $p < .05$).
Although the Order subscale was not used to distinguish between groups of perfectionists, it still remains an important dimension of perfectionism (Slaney et al., 2001) and was included in correlational analyses. Order was significantly and inversely correlated with Procrastination Frequency ($r = -.32, p<.01$) and positively correlated with Academic Self-Efficacy ($r = .33, p<.01$). These patterns of relationships are similar to those demonstrated by the Standards subscale, suggesting that Order may also represent a more positive dimension of perfectionism.

As hypothesized, results of correlational analysis indicated that a significant inverse relationship was found between Academic Self-Efficacy and Procrastination ($r = -.33, p<.01$). Academic Self-Efficacy was not associated with any of the AAVS-M subscales with the exception of Conformity ($r = -.11, p<.05$). There were no significant relationships found between Procrastination and the AAVS-M subscales.

Social Desirability was significantly associated with all of the variables studied. These correlations with Standards, Order, academic self-efficacy, and subscales of the AAVS-M were all positive, indicating that higher scores on these measures were related to high social desirability scores. In contrast, correlations with Discrepancy ($r = -.14, p<.05$) and Procrastination frequency ($r = -.32, p<.01$) were negative, implying that lower scores on these variables were associated with higher socially desirable responding. It is important to note that Discrepancy and procrastination are the variables representing problematic tendencies or behaviors.
<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Standards</td>
<td>.05</td>
<td>.49**</td>
<td>-.26**</td>
<td>.39**</td>
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<td>.30**</td>
<td>-.07</td>
<td>.19**</td>
<td></td>
</tr>
<tr>
<td>2. Discrepancy</td>
<td>.00</td>
<td>.22**</td>
<td>-.25**</td>
<td>.07</td>
<td>.15**</td>
<td>.27**</td>
<td>.17**</td>
<td>.15*</td>
<td>-.14*</td>
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<td>3. Order</td>
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<td>-.32**</td>
<td>.33**</td>
<td>.13*</td>
<td>.18**</td>
<td>.04</td>
<td>.20**</td>
<td>-.04</td>
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<td>4. Procrastination Frequency</td>
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<td>-.33**</td>
<td>-.09</td>
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<td>.05</td>
<td>-.05</td>
<td>-.01</td>
<td>-.32**</td>
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<td>5. Academic Self-Efficacy</td>
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<td>-.01</td>
<td>-.11*</td>
<td>-.02</td>
<td>.08</td>
<td>-.02</td>
<td>.18**</td>
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<td></td>
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<td>6. Collectivism</td>
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<td></td>
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<td>.27**</td>
<td>.39**</td>
<td>.32**</td>
<td>.33**</td>
<td>.28**</td>
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<tr>
<td>7. Conformity</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>.39**</td>
<td>.42**</td>
<td>-.10</td>
<td>.16**</td>
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<td>8. Emotional Control</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>.27**</td>
<td>.32**</td>
<td>.18**</td>
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<td>9. Family Recognition</td>
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<td></td>
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<td>.01</td>
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<td>10. Humility</td>
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<td></td>
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<td>.20**</td>
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<td>11. Social Desirability</td>
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</tbody>
</table>

N=305.
*p<.05, **p<.01.

Table 4.4: Overall Correlations Among Measures of Multidimensional Perfectionism (Standards, Discrepancy, Order), Procrastination Frequency, Academic Self-Efficacy, Asian American Values (Collectivism, Conformity, Emotional Control, Family Recognition Through Achievement, Humility), and Socially Desirable Responding for all subjects.
4.7  Group Comparisons

Data from the 288 participants who identified only as Asian or Asian American were compared to data from the 255 participants who identified as Caucasian in Yao’s 2005 study. An independent groups \( t \)-test was conducted in order to explore any significant differences between the groups on the APS-R. Results of the analysis revealed significant differences between the groups for APS-R total scores \( (t = 4.69, p < .01) \), Standards \( (t = -2.14, p < .05) \), and Discrepancy \( (t = 5.91, p < .01) \). There was no significant difference between the groups for the Order subscale \( (t = 1.54, p = .12) \). Effect sizes were estimated using Cohen’s \( d \) and ranged from .13 (Order) to .51 (Discrepancy). According to Cohen’s (1988) criteria, these effect sizes range from small (.01-.20) to medium (.30-.50). These data suggest that Asian American and Caucasian participants demonstrate significantly different patterns of perfectionism, with Asian American participants scoring significantly higher on Discrepancy and the total score and Caucasian participants scoring significantly higher on Standards.

<table>
<thead>
<tr>
<th></th>
<th>Asian/Asian American ((N = 288))</th>
<th>Caucasian ((N = 255))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SD )</td>
</tr>
<tr>
<td>APS-R Total</td>
<td>110.95</td>
<td>16.60</td>
</tr>
<tr>
<td>Standards</td>
<td>40.92</td>
<td>5.99</td>
</tr>
<tr>
<td>Order</td>
<td>21.12</td>
<td>3.89</td>
</tr>
<tr>
<td>Discrepancy</td>
<td>48.92</td>
<td>14.08</td>
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</tbody>
</table>

* \( p < .05 \), ** \( p < .01 \)

Table 4.5: Means, Standard Deviations, and group comparisons for the Almost Perfect Scale-Revised, Standards, Discrepancy, and Order for Asian American and Caucasian students.
CHAPTER 5

Discussion

The present study examined the validity of Almost Perfect Scale-Revised for Asian American students and explored relationships among dimensions of perfectionism, academic self-efficacy, and procrastination on academic tasks. Differences among groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists for these variables were also investigated. Examination of the underlying factors and the pattern of factor loadings provides support for the use of the APS-R and its subscales in research on perfectionism in Asian American students attending predominantly White universities. Confirmatory factor analysis found item loadings that were similar to the results found in previous studies which used predominantly Caucasian samples (Grzegorek et al., 2004; Rice & Mirzadeh, 2000; Rice & Slaney, 2002; Slaney et al., 2001). Additionally, results of cluster analysis identified three groups (i.e., adaptive perfectionists, maladaptive perfectionists, and non-perfectionists) that are consistent with the groups found in previous research (Grzegorek et al., 2004; Rice & Mirzadeh, 2000). As hypothesized, these results demonstrate support for the applicability of this scale and model of multidimensional perfectionism with Asian American college students.

This study also hypothesized that adaptive perfectionists, maladaptive perfectionists, and non-perfectionists would report significantly different scores of academic self-efficacy and procrastination, with adaptive perfectionists demonstrating
higher self-efficacy and lower procrastination compared to maladaptive perfectionists and non-perfectionists. The findings of this study provide support for this hypothesis.

Adaptive perfectionists reported that they engaged in less frequent procrastination and had greater confidence in their abilities to master academic tasks such as note-taking, class concentration, memorization, and explaining concepts. In contrast, maladaptive perfectionists indicated that they had less confidence in their abilities to successfully perform academic tasks and were more likely to delay initiation or completion of such tasks. These results provide support for the conceptualization of perfectionism as a multifaceted construct with both positive and negative qualities. Additionally, these findings demonstrate support for the argument that adaptive perfectionism—characterized by high Standards and low Discrepancy scores—represents the more positive, healthy dimension of perfectionism. In contrast, maladaptive perfectionism—distinguished by high Standards and high Discrepancy scores—characterizes the more negative, unhealthy dimension of perfectionism (Slaney et al., 2001).

However, while maladaptive perfectionists reported procrastination and self-efficacy scores that were significantly different from those of adaptive perfectionists, their scores were not significantly different from those of non-perfectionists. These results are not consistent with the hypothesis that maladaptive perfectionists have lower academic self-efficacy and procrastinate on academic tasks more frequently than both adaptive perfectionists and non-perfectionists. Rather, these results suggest that although maladaptive perfectionism has been found to be destructive in previous studies (Rice & Slaney, 2002; Slaney, Rice, & Ashby, 2002), it may not be as damaging with regard to
lower levels of academic self-efficacy and more frequent procrastination in university students. Rather, maladaptive perfectionism may have a similar impact as the absence of perfectionistic tendencies.

This study also explored differences in Asian American cultural values among perfectionist groups, although no specific directional patterns were proposed. Maladaptive perfectionists demonstrated the highest total scores on the Asian American Values Scale-Multidimensional as well as highest scores on the Emotional Self-Control, Family Recognition Through Achievement, Conformity, and Humility subscales. In contrast, adaptive perfectionists demonstrated the lowest total scale scores in addition to the lowest scores on these same subscales, while non-perfectionists reported scores that fell between those of the two perfectionist groups. These results suggest that Asian American participants who were classified as maladaptive perfectionists were more likely to adhere to Asian American cultural values, particularly those related to emotional restraint, conformity to social norms and expectations, being modest about one's achievements, and enhancing family status through one's accomplishments. In contrast, Asian American individuals who were categorized as adaptive perfectionists endorsed significantly lower levels of the same values.

In addition to revealing significant differences among groups of adaptive perfectionists, maladaptive perfectionists, and non-perfectionists, this study also examined correlations among the variables under investigation and hypothesized that the Standards subscale of the APS-R would be positively correlated with academic self-efficacy and negatively correlated with procrastination. Additionally, it was hypothesized that Discrepancy would be negatively associated with academic self-efficacy and
positively associated with procrastination frequency. Generally, results of correlational analysis provide support for these hypotheses. Higher Standards scores were associated with higher scores of academic self-efficacy and lower procrastination frequency. Thus, having high standards for one's performance is significantly associated with increased confidence in one's capabilities to master academic tasks and decreased procrastination frequency. In contrast, the Discrepancy subscale was significantly and positively correlated with procrastination frequency and negatively correlated with academic self-efficacy. These findings imply that having concerns about meeting one's goals or expectations is related to low confidence in one's abilities to successfully perform academic tasks and delay in performing or completing such tasks. These results also provide further support for Slaney et al.'s (2001) contention that Standards represents the positive dimension of perfectionism while Discrepancy captures perfectionism's negative quality.

Standards and Discrepancy also demonstrated different patterns of association with Asian American cultural values. Both dimensions were positively correlated with Family Recognition Through Achievement, indicating that the value of achieving academic and occupational success as means of bringing respect and praise to one's family was related to both high personal standards and concerns about one's actual performance not meeting those standards. The relationship between perfectionism dimensions and this specific value is consistent with qualitative accounts of Asian American students who associated their good performance with their parents' pride and honor and who expressed fears of failing to meet their own or others' expectation (Lee, 1994; Lee & Ying, 2001; Schnieder & Lee, 1990). Additionally, Discrepancy was
significantly related to several other Asian American cultural values, including Conformity, Emotional Self-Control, and Humility. In contrast, Standards was not significantly correlated with these values. These results imply that higher levels of concerns about not meeting one's standards for performance are associated with higher endorsement of Asian American cultural values related to conformity to social norms, maintaining control over one's emotions, and being modest or humble.

Asian American students' scores on the APS-R were also compared to the results from a sample of Caucasian students to investigate any significant differences in scores. This study hypothesized that Asian American students would report higher scores on the total scale and subscales. Results of an independent groups \( t \)-test found partial support for this hypothesis. Asian American students reported higher APS-R total and Discrepancy scores compared to Caucasian students; however, Caucasian students demonstrated higher Standards scores. No significant difference was found in scores on the Order subscale. These results indicate that Asian American students demonstrated greater concerns about disparity between their expectations and performance while Caucasian students reported higher personal standards. These results imply that cross-cultural differences in total perfectionism, Standards, and Discrepancy exist and warrant further investigation in future studies. Asian American students' higher Discrepancy scores and the significant correlations between Discrepancy and Asian American values of Family Recognition Through Achievement, Conformity, Emotional Self-Control, and Humility suggest that the Discrepancy dimension plays a significant role in the perfectionism of Asian American students.
While the general results of this study demonstrate evidence for the validity of the APS-R for use with an Asian American student sample, evidence from test-retest analysis suggests that the results of the measure may not be stable over time. Although the paired samples $t$-test results and coefficients of stability were statistically significant, the correlation coefficients for the total scale, Standards, and Discrepancy were below .70, a suggested minimum value for test-retest reliability of psychological measures (Nunnally, 1978). These results suggest that participants' scores on the APS-R may be inconsistent over time and that perfectionism may not be a stable personality trait. It is also possible that the inconsistency of these test-retest results is related to the use of a small sample ($N = 20$) or idiosyncrasies of the particular sample used. Additional research assessing the stability of the APS-R may increase understanding of multidimensional perfectionism as a consistent personality trait.

*Limitations*

Although significant patterns of results were found in this study, these findings must be interpreted with caution due to the discovery of significant correlations between socially desirable responding and the other variables under investigation. Socially desirable responding was positively related with Standards, academic self-efficacy, and Asian American cultural values, indicating that higher scores on these dimensions were related to increased socially desirable responses. Furthermore, social desirability was negatively correlated with Discrepancy and procrastination frequency, the variables representing problematic tendencies or patterns. This pattern implies that lower scores on these variables were associated with high socially desirable responding. These results suggest that participants may have over-estimated their personal standards, confidence in
their capabilities to successfully complete academic tasks, and adherence to Asian American cultural values while under-reporting their concern about any disparity between their expectations and actual performance.

Additional limitations of this study are related to the data collection and analyses procedures. First, the results described are relational in nature rather than causal; therefore it is impossible to conclude that adaptive or maladaptive perfectionism cause changes in academic self-efficacy or procrastination based on the results of this study. Second, although cluster analysis has been utilized in previous studies to classify groups of perfectionists (Grzegorek et al., 2004; Rice & Slaney, 2002), it involves judgments on the part of the researcher that contribute to a lack of precision. Third, data were collected throughout the quarter over the course of one academic year (i.e., fall quarter through spring quarter) but information regarding the time at which participants completed the study was not considered during analysis. Therefore it is impossible to know if individual's perfectionistic tendencies, perceptions of their capabilities to complete academic tasks, or tendencies to procrastinate were impacted by how much time had passed in the quarter. Additionally, information about participants' academic performance (e.g., grade point average, SAT scores) was not collected from this sample and therefore it was impossible to assess any patterns of relationships between academic achievement and the variables studied. Finally, due to the nature of the online data collection procedure, instruments could not be counterbalanced and were presented in a fixed order.

Another limitation is the fact that the participants who were studied were primarily young ($M = 19.26$, $SD = 2.03$) and in their first year (61.2%) in a large Midwestern state university. Therefore the results may not generalize well to individuals
from different age groups, students attending universities in other regions of the United States, or non-student, clinical populations.

**Implications for Counseling**

Although the external validity of this study is limited by its use of a college student sample, the results have significant implications for the treatment of Asian American college students. The results suggest that counselors working with Asian American clients who present with concerns related to perfectionism or procrastination may address these issues in a number of ways. First, it is important for counselors to recognize the diversity of Asian American students' experiences and be sensitive to the reality that not all Asian American individuals have high expectations for their performance—that is, not all Asian American students fit the model minority image.

Additionally, when students present with concerns related to procrastination, it may be important to increase students' awareness of how maladaptive perfectionism, low academic self-efficacy, and the interaction of these variables may be related to their tendencies to procrastinate on academic tasks. One possibility for reducing procrastination might involve increasing clients' self-efficacy to master specific academic tasks, which may lead to greater likelihood that these individuals will approach those activities rather than avoid them, persist for longer periods, and perform better. Alternately, a counselor might work with clients to reduce their concern for any discrepancy between their high personal standards and their actual performance. This approach emphasizes altering the client's perception of the discrepancy rather than lowering her or his standards for achievement.
Furthermore, when working with Asian American clients who identify as perfectionists, it may be important to help them explore any cultural values that are related to their perfectionistic beliefs or standards and to normalize their experiences. For example, their high expectations for themselves may be fueled by a desire to bring recognition to their family through their success and academic accomplishments. Students may benefit from exploration of the factors that influence their motivation and drive to succeed academically as well as any emotional or behaviors consequences (e.g., procrastination) that they may experience.

**Directions for Future Research**

The previously stated limitations lead to suggestions for future research. Future studies of perfectionism in Asian American students might consider controlling for socially desirable responding by performing a MANCOVA procedure or calculating partial correlations. Additionally, further studies examining the impact of generational status, socioeconomic status, and any differences between Asian American students and Asian international students may be useful to enhance understanding of perfectionism in this population. It may also be beneficial to study Asian American students in different geographic regions on the United States to determine if location and the size of the Asian American population in various cities or universities have any impact on students' adherence to Asian American cultural values or perfectionistic tendencies. Furthermore, it would be helpful to examine perfectionism in relation to participants' academic performance or achievement and their feelings of satisfaction with their performance in order to determine any impact of perfectionism on actual academic outcomes. Finally, longitudinal studies of multidimensional perfectionism may be useful in assessing the
stability of this trait over time and determine if social or environmental factors influence students' standards for their performance or concerns about meeting their expectations.

Despite the limitations of this study, significant results were obtained. The findings of the current study expand the literature by providing additional support for the validity of the APS-R in a sample of Asian American students and provide support for the three groups (i.e., adaptive perfectionists, maladaptive perfectionists, and non-perfectionists) found in previous research. While several published studies have examined multidimensional perfectionism in Asian international students or Asian students abroad, none have used the APS-R in a sample of Asian American university students in the United States. Furthermore, this study found significant differences in academic self-efficacy, procrastination frequency, and Asian American cultural values among the three groups, lending support to the contention that perfectionism is composed of distinct dimensions with positive and negative qualities. As demonstrated in the present study, these adaptive and maladaptive dimensions of perfectionism have dramatically different associations with individuals' beliefs about their abilities to perform academic tasks, their tendencies to engage in academic procrastination, and their adherence to Asian American cultural values. The significant associations between perfectionism and cultural values imply that it is important to consider the cultural context in which perfectionism occurs, as cultural values have an impact on one's personal standards and concerns about failing to meet these standards.

In addition to increasing understanding of multidimensional perfectionism in Asian American students, this study also provided insight into the experiences of real Asian American students behind the model minority myth by highlighting significant
differences in expectations among groups of perfectionists. Results of cluster analysis indicated that a substantial proportion of participants were classified as non-perfectionists due to their relatively low personal standards, a finding that conflicts with the model minority image of all Asian American students as high achievers. Furthermore, the distinction between adaptive perfectionists and maladaptive perfectionists demonstrates additional variations in the experiences of Asian American students; although both groups hold high standards for their performance, maladaptive perfectionists have significant concerns about their actual performance not meeting their expectations. This finding indicates that the possession of high personal standards can have a negative impact on Asian American students if they experience significant concerns about failing to meet these standards. These patterns of results demonstrate that like perfectionism, Asian American students are multidimensional and their experiences cannot be adequately captured by standardized test scores or educational attainment statistics. The model minority image not only obscures differences in this diverse group but the distress and decreased academic functioning that Asian American students may experience as a result of the emphasis on high standards and academic achievement.
LIST OF REFERENCES


Appendix A: Description for REP Website

This study is open to Asian/Asian American participants only. Participants will complete several online questionnaires regarding their tendencies to procrastinate, their beliefs about their capabilities to perform academic tasks, their attitudes about themselves and their performance, and adherence to Asian American cultural values. If you meet the requirements of this study and are interested in participating please sign up for a section and the experimenter will contact you within 24 hours with the web address and a code number you will need to complete the survey. You can complete the survey at home. If you have not been contacted within 24 hours please email the experimenter.
Appendix B: Email to REP Participants

Subject: REP: Asian American Student Survey

Hello!

My name is Melissa Yao, and I am a graduate student in the Counseling Psychology Ph.D. Program in the Department of Psychology at OSU. Thank you for signing up to participate in my study. The only requirements for participation are that you identify as Asian or Asian American and you are 18 years of age or older.

If you choose to participate in this study and meet these requirements, please click on the link below. The survey will take approximately 30-40 minutes to complete. Once you have completed the entire survey, you will receive 1 hour of REP experiment credit for your participation.

Please click on the URL below to participate in this study:
http://www.surveymonkey.com/s.asp?u=419702695724

You must also enter an REP student code in order to receive credit for your participation. Once you complete the study and receive your REP credit, this information will be destroyed and your responses will not be linked to your identity. When prompted, please enter REP student code: 001

Thank you very much for your time and participation! If you encounter any problems, please feel free to contact me at this email address.

Sincerely,

Melissa P. Yao, M. A.
Doctoral Candidate
Department of Psychology, The Ohio State University
Appendix C: Email to Student Organizations

Hello!

My name is Melissa Yao, and I am a graduate student in the Counseling Psychology Ph.D. Program in the Department of Psychology at The Ohio State University. Along with my advisor, Pam Highlen, I am conducting a research study exploring Asian American students’ adherence to Asian cultural values, tendencies to procrastinate on academic tasks, beliefs about their ability to perform academic tasks, and their attitudes about themselves and their performance. The only requirement for participation is that you identify as Asian American and you are 18 years of age or older.

The general purpose of this study is to better understand the relationships among Asian American cultural values and achievement-related beliefs and behavior, including academic self-efficacy, procrastination, and perfectionism. By participating and sharing your experiences, you will be contributing invaluable information that will lead to better understanding of achievement in the Asian American community.

If you choose to participate in this study, please continue to the next page. The survey will take approximately 20-30 minutes to complete. If you choose to participate, you will have the option to enter a lottery drawing in which up to 2 individuals will be selected to win $25 giftcards. The only requirement for entering this lottery is that you complete the survey and provide your e-mail address. After completing the survey, you will be asked to enter your e-mail address if you would like to participate in the lottery drawing. You are only required to provide this information if you choose to enter the drawing.

Due to the nature of Internet research, the security of the survey data during transmission cannot be guaranteed; however, you are not required to submit any identifying information. If you choose to enter your email address for the lottery, this information will be collected separately and will not be connected to your responses. Security is guaranteed once the researchers receive the survey data. Your responses will be kept strictly confidential and only I will have access to your results. If you would like further information about this study, please do not hesitate to contact me at yao.44@osu.edu. You may also contact my advisor Dr. Pamela Highlen at highlen.1@osu.edu.

The methods of this research and the plan for protection of rights of participants have been reviewed and approved by the Office of Responsible Research Practices (http://www.orrp.ohio-state.edu/), which oversees all research activities conducted at The
Ohio State University. This plan received Institutional Review Board approval on 9/7/06. This study's IRB project number is 2006E0597.

Please feel free to forward this email and link to other Asian American individuals who may be interested in participating.

Thank you very much for your time and participation!

Sincerely,
Melissa P. Yao, M. A.
Doctoral Candidate
Department of Psychology, The Ohio State University
Appendix D: Introduction to Study

Hello!

My name is Melissa Yao, and I am a graduate student in the Counseling Psychology Ph.D. Program in the Department of Psychology at The Ohio State University. Along with my advisor, Pam Highlen, I am conducting a research study exploring Asian American students’ adherence to Asian cultural values, tendencies to procrastinate on academic tasks, beliefs about their ability to perform academic tasks, and their attitudes about themselves and their performance. The only requirements for participation are that you identify as Asian American and you are 18 years of age or older.

The general purpose of this study is to better understand the relationships among Asian American cultural values and achievement-related beliefs and behavior, including academic self-efficacy, procrastination, and perfectionism. By participating and sharing your experiences, you will be contributing invaluable information that will lead to better understanding of achievement in the Asian American community.

If you choose to participate in this study, please continue to the next page. The survey will take approximately 20-30 minutes to complete. If you choose to participate, you will receive 0.5 hour of REP research experiment credit. Please answer all of the items honestly. You may skip any question you do not wish to answer. If you would like to discontinue your participation in this study, you may close your browser window to exit the survey. However, YOU MUST ENTER YOUR REP STUDENT CODE to receive credit for your participation. If you do not enter the code that you provided to you by the researcher, you may not receive REP credit for this study.

Due to the nature of Internet research, the security of the survey data during transmission cannot be guaranteed; however, you are not required to submit any identifying information. Security is guaranteed once the researchers receive the survey data. Your responses will be kept strictly confidential and only I will have access to your results. If you would like further information about this study, please do not hesitate to contact me at yao.44@osu.edu. You may also contact my advisor Dr. Pamela Highlen at highlen.1@osu.edu.

The methods of this research and the plan for protection of rights of participants have been reviewed and approved by the Office of Responsible Research Practices (http://www.orrp.ohio-state.edu/), which oversees all research activities conducted at The
Ohio State University. This plan received Institutional Review Board approval on 9/7/06.

This study's IRB project number is 2006E0597.

Thank you very much for your time and participation!

Sincerely,
Melissa P. Yao, M. A.
Doctoral Candidate
Department of Psychology, The Ohio State University
Appendix E: Consent for Participation

I consent to my participation in research being conducted by Melissa Yao and Pamela Highlen of The Ohio State University.

The investigators have explained the purpose of the study, the procedures that will be followed, and the amount of time it will take. The researchers have also explained the possible risks (e.g., confidentiality cannot be guaranteed on-line) and benefits (e.g., valuable information regarding achievement behavior of Asian American students) of my participation.

Furthermore, I understand that I may refuse to participate in this study without penalty or loss of benefits to which I am otherwise entitled. I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

Finally, I acknowledge that I have read and fully understand the consent form. I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I can contact the investigators at yao.44@osu.edu or highlen.1@osu.edu at any point with questions or concerns. I voluntarily agree to participate in this study.

For questions about my rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, I may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

If you agree with the above please indicate your agreement by checking yes to continue with the study.

____ Yes
____ No
Appendix F: Demographic Questionnaire

What is your current age? _________

What is your date of birth? (mm/dd/yyyy) __________

What is your race? (Choose all that apply)
_____ African American/Black
_____ American Indian or Alaskan Native
_____ Asian/Asian American
_____ Caucasian/White
_____ Hispanic/Latino/a
_____ Pacific Islander
_____ Other (please specify): ________________

Please indicate all of the Asian ethnic groups with which you identify:
_____ Asian Indian
_____ Cambodian
_____ Chinese
_____ Filipino/a
_____ Hmong
_____ Indonesian
_____ Japanese
_____ Korean
_____ Laotian
_____ Malaysian
_____ Singaporean
_____ Taiwanese
_____ Thai
_____ Vietnamese
_____ Other (please specify): ________________

What label do you prefer to use to describe your identity (e.g., Asian, Asian American, Chinese-American)? ______________________________________________________

What is your generational status? (check one):
_____ 1st (you were born outside of the U.S.)
_____ 1.5 (you were born outside of the U.S., but spent more than 2/3 of your life in the U.S.
_____ 2nd (you were born in the U.S., but one or both parents were born in country of origin)
_____ 3rd (you and both parents were born in the U.S., but all grandparents were born in country of origin)
_____ 4th (you and both parents were born in the U.S., but not all grandparents were born in country of origin)
_____ 5th (you, both parents, and all grandparents were born in the U.S.)
_____ Other (please specify): ______________________

How many years have you resided in the United States? __________________________

What is your gender?
_____ Female
_____ Male

If you are enrolled in a college or university, what is your academic standing?
_____ First year student
_____ Sophomore
_____ Junior
_____ Senior
_____ Graduate/Professional student
_____ Not applicable
_____ Other (please specify) ____________________

Thank you for providing information about yourself. Please continue to the next page to begin the questionnaire.
Appendix G: Almost Perfect Scale-Revised  
(APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001)

Instructions

The following items are designed to measure attitudes people have toward themselves, their performance, and toward others. There are no right or wrong answers. Please respond to all of the items. Use your first impression and do not spend too much time on individual items in responding.

Respond to each of the items using the scale below to describe your degree of agreement with each item. Fill in the appropriate number circle on the computer answer sheet that is provided.

1 2 3 4 5 6 7
Strongly Disagree Slightly Disagree Slightly Disagree Neutral Agree Agree Agree

1. I have high standards for my performance at work or at school.
2. I am an orderly person.
3. I often feel frustrated because I can’t meet my goals.
4. Neatness is important to me.
5. If you don’t expect much out of yourself, you will never succeed.
6. My best just never seems to be good enough for me.
7. I think things should be put away in their place
8. I have high expectations for myself.
9. I rarely live up to my high standards.
10. I like to always be organized and disciplined.
11. Doing my best never seems to be enough.
12. I set very high standards for myself.
13. I am never satisfied with my accomplishments.
15. I often worry about not measuring up to my own expectations.
16. My performance rarely measures up to my standards.
17. I am not satisfied even when I know I have done my best.
18. I try to do my best at everything I do.
19. I am seldom able to meet my own high standards of performance.
20. I am hardly ever satisfied with my performance.
21. I hardly ever feel that what I’ve done is good enough.
22. I have a strong need to strive for excellence.
23. I often feel disappointment after completing a task because I know I could have done better.
Appendix H: Procrastination Assessment Scale-Students
(PASS; Solomon & Rothblum, 1984)

Areas of Procrastination

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on an “a” to “e” scale according to how often you wait until the last minute to do the activity. Then indicate on an “a” to “e” scale the degree to which you feel procrastination on that task is a problem. Finally, indicate on an “a” to “e” scale the degree to which you would like to decrease your tendency to procrastinate on each task.

I. WRITING A TERM PAPER

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

<table>
<thead>
<tr>
<th>Never Procrastinate</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Nearly Always</th>
<th>Always Procrastinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Not At All a Problem</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Nearly Always</th>
<th>Always a Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Do Not Want to Decrease</th>
<th>Somewhat</th>
<th>Definitely Want to Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
<td>c</td>
</tr>
</tbody>
</table>
II. STUDYING FOR EXAMS

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

<table>
<thead>
<tr>
<th>Never Procrastinate</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>b</td>
</tr>
<tr>
<td>Sometimes</td>
<td>c</td>
</tr>
<tr>
<td>Nearly Always</td>
<td>d</td>
</tr>
<tr>
<td>Always Procrastinate</td>
<td>e</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Not At All a Problem</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>b</td>
</tr>
<tr>
<td>Sometimes</td>
<td>c</td>
</tr>
<tr>
<td>Nearly Always</td>
<td>d</td>
</tr>
<tr>
<td>Always a Problem</td>
<td>e</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Do Not Want to Decrease</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat</td>
<td>b</td>
</tr>
<tr>
<td>Definitely Want to Decrease</td>
<td>c</td>
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<tr>
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<td>d</td>
</tr>
<tr>
<td></td>
<td>e</td>
</tr>
</tbody>
</table>

III. KEEPING UP WITH WEEKLY READING ASSIGNMENTS

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

<table>
<thead>
<tr>
<th>Never Procrastinate</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>b</td>
</tr>
<tr>
<td>Sometimes</td>
<td>c</td>
</tr>
<tr>
<td>Nearly Always</td>
<td>d</td>
</tr>
<tr>
<td>Always Procrastinate</td>
<td>e</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Not At All a Problem</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>b</td>
</tr>
<tr>
<td>Sometimes</td>
<td>c</td>
</tr>
<tr>
<td>Nearly Always</td>
<td>d</td>
</tr>
<tr>
<td>Always a Problem</td>
<td>e</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Do Not Want to Decrease</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat</td>
<td>b</td>
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<tr>
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<td>c</td>
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<td>d</td>
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<td></td>
<td>e</td>
</tr>
</tbody>
</table>
IV. ACADEMIC ADMINISTRATIVE TASKS: FILLING OUT FORMS, REGISTERING FOR CLASSES, GETTING ID CARD

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

<table>
<thead>
<tr>
<th>Never Procrastinate</th>
<th>a</th>
<th>Almost Never</th>
<th>b</th>
<th>Sometimes</th>
<th>c</th>
<th>Nearly Always</th>
<th>d</th>
<th>Always Procrastinate</th>
<th>e</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Not At All a Problem</th>
<th>a</th>
<th>Almost Never</th>
<th>b</th>
<th>Sometimes</th>
<th>c</th>
<th>Nearly Always</th>
<th>d</th>
<th>Always a Problem</th>
<th>e</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Do Not Want to Decrease</th>
<th>a</th>
<th>Somewhat</th>
<th>b</th>
<th>Definitely Want to Decrease</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
</table>

V. ATTENDANCE TASKS: MEETING WITH YOUR ADVISOR, MAKING AN APPOINTMENT WITH A PROFESSOR

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

<table>
<thead>
<tr>
<th>Never Procrastinate</th>
<th>a</th>
<th>Almost Never</th>
<th>b</th>
<th>Sometimes</th>
<th>c</th>
<th>Nearly Always</th>
<th>d</th>
<th>Always Procrastinate</th>
<th>e</th>
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</thead>
</table>

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

<table>
<thead>
<tr>
<th>Not At All a Problem</th>
<th>a</th>
<th>Almost Never</th>
<th>b</th>
<th>Sometimes</th>
<th>c</th>
<th>Nearly Always</th>
<th>d</th>
<th>Always a Problem</th>
<th>e</th>
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</thead>
</table>

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

<table>
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<tr>
<th>Do Not Want to Decrease</th>
<th>a</th>
<th>Somewhat</th>
<th>b</th>
<th>Definitely Want to Decrease</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
</table>
VI. SCHOOL ACTIVITIES IN GENERAL

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

<table>
<thead>
<tr>
<th>Degree</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
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<tr>
<td>Never Procrastinate</td>
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<tr>
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17. To what degree is procrastination on this task a problem for you?

<table>
<thead>
<tr>
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18. To what extent do you want to decrease your tendency to procrastinate on this task?

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Reasons for Procrastination

Think of the last time the following situation occurred. It's near the end of the semester. The term paper you were assigned at the beginning of the semester is due very soon. You have not begun work on this paper. There are reasons why you have been procrastinating on this task.

Rate each of the following reasons on a 5-point scale according to how much it reflects why you procrastinated at the time. Mark your answers on your answer sheet.

Use the scale:

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<td>Definitely Why I Procrastinated</td>
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19. You were concerned the profession wouldn't like your work.

20. You waited until a classmate did his or hers, so that he/she could give you some advice.
21. You had a hard time knowing what to include and what not to include in your paper.

22. You had too many other things to do.

23. There's some information you needed to ask the professor, but you felt uncomfortable approaching him/her.

24. You were worried you would get a bad grade.

25. You resented having to do things assigned by others.

26. You didn't think you knew enough to write the paper.

27. You really disliked writing term papers.

28. You felt overwhelmed by the task.

29. You had difficulty requesting information from other people.

30. You looked forward to the excitement of doing this task at the last minute.

31. You couldn't choose among all the topics.

32. You were concerned that if you did well, your classmates would resent you.

33. You didn't trust yourself to do a good job.

34. You didn't have enough energy to begin the task.

35. You felt it just takes too long to write a term paper.

36. You liked the challenge of waiting until the deadline.

37. You knew that your classmates hadn't started the paper either.

38. You resented people setting deadlines for you.

39. You were concerned you wouldn't meet your own expectations.

40. You were concerned that if you got a good grade, people would have higher expectations of you in the future.

41. You waited to see if the professor would give you some more information about the paper.
42. You set very high standards for yourself and you worried that you wouldn't be able to meet those standards.

43. You just felt too lazy to write a term paper.

44. Your friends were pressuring you to do other things.
Appendix I: Academic Self-Efficacy Scale  
(ASES; Wood & Lock, 1987)

The questions in this questionnaire ask about your perceptions of your ability to perform various academic tasks, such as reading, note taking and memorization. For each of the tasks you are asked to make judgments about your ability to perform at varying levels of difficulty. Imagine that you are responding to questions regarding your capabilities in one of the classes required for your academic major program. Please respond to each of the items using the scale below to describe your degree of agreement with each item.

CLASS CONCENTRATION

The proportion of class periods for which you feel you are able to concentrate and stay fully focused on the materials being presented.

I can concentrate for at least 50% of a class period.

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I can concentrate for at least 70% of a class period.

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I can concentrate for at least 90% of a class period.

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I can concentrate for at least 100% of a class period.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

MEMORIZATION

The proportion of facts and concepts covered in the course that you feel you are able to memorize and recall on demand (e.g., exam time, in response to questions).

I can memorize 60% of the facts and concepts.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can memorize 70% of the facts and concepts.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can memorize 80% of the facts and concepts.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can memorize 90% of the facts and concepts.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can memorize 100% of the facts and concepts.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree
EXAM CONCENTRATION

The proportion of time during exams for which you feel you are able to focus exclusively on understanding and answering questions and avoid breaks in your concentration.

I can stay focused on the exam for 50% of the time.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can stay focused on the exam for 70% of the time.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can stay focused on the exam for 90% of the time.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can stay focused on the exam for 100% of the time.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

UNDERSTANDING

The proportion of facts, concepts, and arguments covered in the course that you feel you understand as they are presented in lectures, tutorials, or course materials (e.g., textbooks, assigned articles).

I can understand 50% of the concepts as presented.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree
I can understand 70% of the concepts as presented.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can understand 90% of the concepts as presented.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can understand 100% of the concepts as presented.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

EXPLAINING CONCEPTS

The proportion of facts, concepts and arguments covered in the course (i.e. in lectures, tutorials or course materials) that you feel you are able to explain clearly to others in your own words.

I can explain 40% of the concepts, etc. in my own words.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can explain 60% of the concepts, etc. in my own words.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can explain 80% of the concepts, etc. in my own words.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree
I can explain 100% of the concepts, etc. in my own words.

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DISCRIMINATING BETWEEN CONCEPTS

The degree to which you feel you are able to discriminate between the more important and less important facts, concepts and arguments covered in the course (i.e. in lectures, tutorials and course materials).

I am able to identify the most important concepts, points, etc. 50% of the time.

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I am able to identify the most important concepts, points, etc. 70% of the time.

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I am able to identify the most important concepts, points, etc. 90% of the time.

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I am able to identify the most important concepts, points, etc. 100% of the time.

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NOTE-TAKING

The proportion of the time that you feel you are able to make understandable course notes which emphasize, clarify and relate key facts, concepts and arguments as they are presented in lectures, tutorials or course materials.

I can make understandable notes for 50% of the material.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can make understandable notes for 70% of the material.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can make understandable notes for 90% of the material.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

I can make understandable notes for 100% of the material.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree

GRADES

The degree to which you feel you have the necessary skills to get various grades in this course, assuming that you try.

I can get an A in this course.

1 2 3 4 5
Strongly Disagree Disagree Neutral Agree Strongly Agree
I can get at least a high B in this course.

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I can get at least a low B in this course.

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I can get a C in this course.

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Appendix J: Asian American Values Scale – Multidimensional (AAVS-M; Kim, Li, & Ng, 2005)

INSTRUCTIONS: Use the scale below to indicate the extent to which you agree with the value expressed in each statement.

1 = Strongly Disagree
2 = Moderately Disagree
3 = Mildly Disagree
4 = Neither Agree or Disagree
5 = Mildly Agree
6 = Moderately Agree
7 = Strongly Agree

_____1. One should recognize and adhere to the social expectations, norms and practices.
_____2. The welfare of the group should be put before that of the individual.
_____3. It is better to show emotions than to suffer quietly.
_____4. One should go as far as one can academically and professionally on behalf of one’s family.
_____5. One should be able to boast about one's achievement.
_____6. One's personal needs should be second to the needs of the group.
_____7. One should not express strong emotions.
_____8. One’s academic and occupational reputation reflects the family’s reputation.
_____9. One should be able to draw attention to one's accomplishments.
_____10. The needs of the community should supercede those of the individual.
_____11. One should adhere to the values, beliefs and behaviors that one’s society considers normal and acceptable.
12. Succeeding occupationally is an important way of making one’s family proud.
13. Academic achievement should be highly valued among family members.
14. The group should be less important than the individual.
15. One’s emotional needs are less important than fulfilling one’s responsibilities.
16. Receiving awards for excellence need not reflect well on one’s family.
17. One should achieve academically since it reflects on one’s family.
18. One’s educational success is a sign of personal and familial character.
19. One should not sing one’s own praises.
20. One should not act based on emotions.
21. One should work hard so that one won’t be a disappointment to one’s family.
22. Making achievements is an important way to show one’s appreciation for one’s family.
23. One’s efforts should be directed toward maintaining the well-being of the group first and the individual second.
24. It is better to hold one’s emotions inside than to burden others by expressing them.
25. One need not blend in with society.
26. Being boastful should not be a sign of one’s weakness and insecurity.
27. Conforming to norms provides order in the community.
28. Conforming to norms provides one with identity.
29. It is more important to behave appropriately than to act on what one is feeling.
30. One should not openly talk about one’s accomplishments.
31. Failing academically brings shame to one’s family.
32. One should be expressive with one's feelings.
33. Children's achievements need not bring honor to their parents.
34. One need not sacrifice oneself for the benefit of the group.
35. Openly expressing one's emotions is a sign of strength.
36. One’s achievement and status reflect on the whole family.
37. One need not always consider the needs of the group first.
38. It is one’s duty to bring praise through achievement to one’s family.
39. One should not do something that is outside of the norm.
40. Getting into a good school reflects well on one’s family.
41. One should be able to brag about one’s achievements.
42. Conforming to norms is the safest path to travel.
Appendix K: Social Desirability Scale
(SDS; Crowne & Marlowe, 1960)

Listed below are statements concerning your attitudes, traits, and tendencies. Read each item and decide whether the statement is true or false as it pertains to you.

1 = TRUE
2 = FALSE

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.
19. I sometimes try to get even, rather than forgive and forget.
20. When I don't know something I don't at all mind admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrongdoings.
25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.

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27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.
32. I sometimes think when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.
Appendix L: Debriefing Statement

Thank you for participating in this study! You have completed a study composed of several questionnaires which assess your adherence to Asian cultural values, tendencies to procrastinate on academic tasks, beliefs about your ability to perform academic tasks, and your attitudes about yourself and your performance.

The primary purpose of this study is to expand and enhance the existing research findings regarding Asian American culture and achievement. The results of this research will hopefully lead to a better understanding of how Asian American cultural values influence one’s expectations and standards, beliefs about one’s capabilities, and behavior related to achievement.

Because the questionnaires are personal in nature and deal with sensitive topics, it is possible that you may have developed some concerns during the course of this study. If this is the case, please feel free to contact the researchers (yao.44@osu.edu, highlen.1@osu.edu) or a local counseling center. For OSU students, Counseling and Consultation Services (4th floor of the Younkin Success Center; 292-5766) provides psychological services to students at the university. For non-OSU students, you may also contact your university’s counseling center or the researchers with questions/concerns.

If you have any further questions about this study, please do not hesitate to contact the researchers.

Again, thank you for assisting with this research. Your participation is greatly appreciated.

Sincerely,
Melissa P. Yao, M.A. (yao.44@osu.edu)
Pamela Highlen, Ph.D. (highlen.1@osu.edu)