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Concept in Adjustment to College

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BARRY UNIVERSITY

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Abstract

The purpose of the current study was to investigate factors that may impact college students' ability to successfully adjust to the college environment. Emotional intelligence, cognitive intelligence, and academic self-concept were expected to be associated with differences among participants' adjustment to college scores. Participants included 93 first-year college students (61 female, 32 male) at an ethnically diverse university in South Florida. Results indicated that for participants born abroad, emotional intelligence was a significant predictor of college adjustment, after accounting for the effects of cognitive intelligence and academic self-concept. For participants born in the United States, emotional intelligence did not account for any additional variance in college adjustment. Implications from these findings suggest emotional intelligence may be an important factor when adjusting to college in a foreign country.

The Role of Emotional Intelligence, IQ, and
Academic Self-Concept in Adjustment to College

A survey of recent high school graduates found that 95% of high school students planned on attending and graduating from college (Culver & Herr, 2007). However, data from the U.S. Census Bureau indicate that one out of every four new college students will drop out during the first year (Planty, Kena, & Hannes, 2009). This number is startling, considering the mounting importance of a college education in the workforce. Of full-time workers 25 years and older, those with a four-year college degree earned 62% more than those with only a high school diploma. Additionally, two-thirds of individuals with a four-year college degree were given full health benefits in their entry-level jobs, compared to only one-third of entry-level workers who had only a high school diploma (U.S. Census Bureau, 2004). With a 25% first-year drop-out rate and an ever-increasing need for a college degree, it is important to learn more about what is occurring during the first year of college that is leading so many students to leave.

Research indicates that the ability to successfully adjust to the college environment may be an important factor in the graduation rates (Gall, Evans, & Bellerose, 2000). College adjustment encompasses the social, psychological, emotional, physical and academic stressors students face when transitioning from high school to college, and the students' abilities to cope with them (Hiester, Nordstrom, & Swenson, 2009). In the first year, new college students must acclimate to a novel environment, budget expenses, forge new social ties, adjust previous friendships and family relationships, and perform to rigorous academic standards (Parker, Hogan, Eastabrook, Oke, & Wood, 2006). Identifying the factors that affect adjustment to college would be

influential in decreasing the number of college dropouts and in understanding the predictive characteristics of collegiate success.

Cognitive intelligence (IQ), a standardized measure of cognitive ability, is one factor that has been consistently linked to successful college adjustment, particularly to academic adjustment (Chamorro-Premuzic & Furnham, 2006; Farsides & Woodfield, 2002; Neisser et al., 1996). Academic self-concept, a combination of a belief in one's academic ability and peer evaluations of one's academic ability, is a second often researched predictor of college adjustment (Chevalier, Gibbons, Thorpe, Snell, & Hoskins, 2009; Choi, 2005; Kornilova, Kornilov, & Chumakova, 2009). However, IQ and academic self-concept do not account for students' entire success or lack of success in college (Farsides & Woodfield, 2003). Therefore, researchers have begun assessing other factors that could affect college adjustment, including personality variables, peer relationships, ethnicity, financial support, parental attachment, the distance the college is from home, social support, and motivation for higher learning (Bryan & Simmons, 2009; Dennis, Phinney, & Chuateco, 2005; Gall, Evans, & Bellerose, 2000; Heister, Nordstrom, & Swenson, 2009; Li & Zhou, 2009).

One fairly new construct that has become a variable of interest in the college adjustment literature is emotional intelligence (EI). In brief, EI is the ability to process information about emotions of the self and others and the ability to use the information in decision-making processes (Mayer, Salovey & Caruso, 2008). Recent studies have identified links between EI and academic achievement, as well as between EI and college retention, two aspects of adjustment to college (Adeyemo, 2007; Parker, Summerfeldt, Hogan, & Majeski, 2004). Therefore, EI may also impact college

adjustment as a whole. By assessing EI's impact on not only academic achievement, but also on the social, psychological-emotional, and institutional commitment aspects of college adjustment, one can gain a better understanding of the role of EI in college adjustment. Thus, the purpose of the proposed study is to evaluate EI as a contributor to college adjustment, and to determine if EI can account for additional variation not explained by the variables of IQ and academic self-concept.

The following review will begin with the theoretical underpinnings of academic self-concept, which include Albert Bandura's Social Cognitive Theory and self-efficacy. There will then be an historical overview of IQ covering how IQ was defined according to each major theorist (e.g., Galton, Spearman). In addition, there will be a discussion of the theoretical underpinnings of EI, which include theories of multiple intelligences as well as theories on the relationship between cognition and emotion. A discussion on the conceptualization of EI and the models and approaches of EI that have been proposed since its inception will follow. Finally, there will be a review of the literature on academic self-concept, IQ, and EI's role in adjustment to college.

Theoretical Underpinnings of Academic Self-Concept

Albert Bandura's Social Cognitive Theory

According to Bandura's social cognitive theory, a triadic relationship between personal, behavioral, and environmental factors influences behavior. Furthermore, each of those factors has a bi-directional, reciprocal influence on one another; personal factors interact with behavior, behavior interacts with the environment, and the environment interacts with personal factors. For example, although future goals affect one's choice in behaviors, the behaviors and their consequences will also affect one's beliefs about what

one can achieve, which will also be affected by one's biological makeup (e.g., temperament) and so on. Therefore, even though Bandura used the term reciprocal determinism to describe this triadic relationship, the influence the factors have on one another is not equal, and the factors do not impact each other simultaneously. The relationship among these three factors is specific to each individual, the type of behavior being measured, as well as the environmental context in which the behavior is taking place (Bandura, 1994).

Whereas behaviorist theories viewed environmental contingencies and biology as the sole determinants of future behaviors, Social Cognitive Theory added a cognitive component that mediated the stimulus-response pathway (Bandura, 1994). In this sense, the consequences one experiences after a behavior is performed impact one's cognitive expectations of what may occur if that behavior is performed in the future. Thus, according to social cognitive theory, humans have a unique ability to form cognitive expectations that allow them to predict potential outcomes and cognitively experience potential consequences before actually engaging in any behavior. The human mind dictates reality, what information is encoded into memory, and behaviors. Social cognitive theory also holds that humans learn vicariously by observing the rewards and consequences of others' behaviors, and they are able to incorporate that information into their cognitive expectations (Bandura, 1994).

One important concept that is central to social cognitive theory is self-efficacy. Self-efficacy is defined as one's self-perceptions of what one is capable of, which influence future goals, perseverance in reaching those goals, and the activities that promote them. Self-efficacy is integral to the forming of cognitive expectations, a main

tenent of social cognitive theory, and is implicated in people's abilities to self-reflect and self-regulate their future actions.

How self-efficacy develops. Self-efficacy impacts performance because the perception of self-efficacy, or what people believe an individual is capable of, influences cognitive functioning. Bandura (1986) termed this aspect of self-efficacy as *perceived self-efficacy* or *self-efficacy beliefs*. Perceived self-efficacy is formed by previous mastery experiences, vicarious experiences, social persuasion, and physiological states (Bandura, 1982). Bandura theorized that mastery experiences were the most influential because the experiences were based on actual life, where patterns of failures and successes influence what people believe they are capable of. Vicarious experiences, for example, when children learn from their parent's behaviors, are also important because an individual can be inspired by the successes of others or can be fearful because of the failures of others. Social persuasion influences perceived self-efficacy through the verbal persuasion and behavioral cues of external sources, that both indicate what an outside source believes about one's ability. Bandura did note that the amount of influence social persuasion has on an individual is also dictated by the source of the information, and whether the individual respects the source. Physiological states impact an individual's perceived self-efficacy particularly during stressful experiences when arousal is heightened, and somatic signs are interpreted as warning signals from the body that accomplishing this task may not be a viable option. Physiological responses such as increased heart rate, sweating, nausea, and fatigue may be interpreted as signs that the body is giving up, or may induce anxiety in an individual, thus affecting perceived self-efficacy.

What perceived self-efficacy affects. Perceived self-efficacy can have an effect on behavior, effort, perseverance, resiliency, levels of anxiety, and anticipated outcomes. More broadly, Bandura (1993) has found that perceived self-efficacy has an effect on four major psychological processes: cognitive processes, motivational processes, affective processes, and selection processes.

Perceived self-efficacy affects cognitive processes in a few different ways. First, it affects cognitive goal-setting because perceived self-efficacy influences self-appraisal of ability. Therefore, the higher the perceived self-efficacy is, the higher the goal-setting and dedication to that goal will be. Second, perceived self-efficacy impacts the cognitively visualized scenarios that occur prior to making a decision. Because most decisions are first planned cognitively, perceived self-efficacy can have a large impact on the content of those visualizations. For example, if an individual has a high perceived self-efficacy, he or she may visualize scenarios that are positive and that indicate future success. However, an individual with a low self-efficacy may only be able to visualize situations where he or she fails or falls short of the goal. Because a major component of thought is predicting future scenarios and developing ways to control the environment, having low self-efficacy can instill self-depreciation that is difficult to overcome (Bandura, 1993).

Perceived self-efficacy also helps regulate motivational processes, and three specific types of cognitive motivators have been theorized: causal attributions, outcome expectancies, and cognized goals. Causal attributions, which are what one views as the cause of one's failures, are affected by perceived self-efficacy. Whereas someone who has a high-perceived self-efficacy may attribute academic failures to low effort on a

particular task, someone who has a low perceived self-efficacy may attribute academic failure to a lack of intelligence, or overall ability. The cognitive motivator, outcome expectancies, implies that motivation is regulated by the kinds of outcomes that an individual imagines will result after a specific plan of action. Perceived self-efficacy affects these outcome expectancies because it determines whether the person will even attempt to carry out the plan of action. Perceived self-efficacy can limit motivation to carry out behaviors that will produce positive results, because of the belief that it will be impossible to carry out the behavior. Cognized goals include the motivation that goes into creating challenging goals and the impact that achieving or not achieving has on the individual. By setting a challenging, yet realistic goal, one can increase the motivation that is needed to achieve the goal. By having one's satisfaction be determined by meeting the goal, one can direct the behavior and develop incentives to keep on track until the goal is met. This process of cognized goals is influenced by perceived self-efficacy because of its effects on the difficulty of the goals chosen, the effort extended, whether an individual sticks with the goal, and whether an individual lets failure lead to self-depreciation. In sum, those with a high perceived self-efficacy will set realistic goals, be effortful in achieving them, will persevere through the challenges, and not let failure control future goal-setting (Bandura, 1993).

Perceived self-efficacy is also implicated in affective processes. Affective processes include an individual's ability to cope and to control negative thought patterns. Perceived self-efficacy can affect the levels of stress, anxiety, and depression experienced during threatening situations and the level of motivation to cope. High perceived self-efficacy may result in more control over arousal from stressors and over distressing

thoughts that result from stressful situations. Distressing thoughts are important to control because they can lead to high anxiety, poor coping behaviors, depression due to unfulfilled dreams, ruminating thoughts, and negative biological effects (e.g., infections, fatigue, weight gain). Therefore, if an individual has a strong perceived self-efficacy he or she may be able to be motivated to control arousal due to stress, cope with the stress, and not let negative thought patterns lead to detrimental physical, psychological or physiological effects (Bandura, 1993).

The last major process perceived self-efficacy impacts is selection process (Bandura, 1993). Overall, people are partially an outcome of their environment, and perceived self-efficacy impacts the selection processes they choose, including the types of decisions, activities, and environments they select. Individuals will not place themselves in situations they cannot cope with, but will engage in activities they believe they are capable of managing. These choices will impact perceived capabilities, hobbies, and social ties, ultimately determining an individual's life course. As a result, perceived self-efficacy's influence on the selection processes an individual chooses ultimately affects the development of the self (Bandura, 1993).

Perceived self-efficacy and academic self-concept. Bandura's theory of self-efficacy was the basis of research on a similar construct, self-concept (Bong & Clark, 1999). Self-concept borrows a cognitive component from self-efficacy related to one's perceived view of one's abilities based on past experiences. However, self-concept adds a second component, that people affectively evaluate their abilities in contrast to how others view their abilities. Therefore, self-concept is defined as a combination of the cognitive appraisal of one's abilities and the affective appraisal of one's abilities in

comparison with how others view one's abilities (Bong & Clark, 1999). Also important to this definition is the understanding of important features that help define self-concept: that self-concept is multifaceted, hierarchical, developmental, and differentiable (Marsh & Shavelson, 1985). One of the most studied features is the hierarchical nature of self-concept, which makes self-concept domain specific. The hierarchy of self-concept describes the difference between perceptions of the self as a whole and perceptions of the self in regards to a specific skill, ability, or domain in life. Therefore self-concept can be singular or it can be divided into specific self-concepts, such as academic self-concept, social self-concept, or musical self-concept. These domain-specific self-concepts are also developmental in nature, because they can be strengthened or weakened over time (Marsh & Shavelson, 1985).

Similarly, self-efficacy can refer to specific situations just like self-concept, although its original theoretical view concerned an overall self-efficacy (Bandura, 1994). However, the definition of self-efficacy does not stress the affective domain that self-concept has added. This is not to say that Bandura (1994) did not indicate that there was an impact from social comparison on self-efficacy; rather, it was that previous mastery experiences had the largest effect on self-efficacy as a whole.

Research indicates that when self-efficacy and self-concept are considered within specific domains they tend to predict performance to similar degrees (Bong & Clark, 1999). However, with the addition of an affective dimension that assesses social comparison, one may be able to have a better understanding of one's domain specific self-concept or self-beliefs because of the inclusion of societal influence. For example, in the classroom setting, not only is the student assessing his or her own abilities based on

the grades received, but also by the feedback from teachers and through comparison to fellow classmates. In fact, in Choi's (2005) study, which examined measures of generalized self-efficacy, academic self-efficacy, specific self-efficacy, academic self-concept, and course-specific self-concept in relation to end of semester term grades in undergraduate students, academic self concept and course-specific self-concept were the greatest predictors of the term grades. This lends support for the importance of domain-specific measures that include an affective component in measuring domain-specific abilities (Choi, 2005).

Theoretical Underpinnings of IQ

Galton's Theory of General Cognitive Intelligence

The first theory of a general cognitive intelligence can be traced back to Francis Galton (1883), whose study of heredity led to the formation of a biological-based theory of intelligence. Galton followed the lineage of distinguished men in Europe and found that mental abilities and personality traits were inherited. Galton defined intelligence as an inherited trait that could be measured by an individual's reaction time to cognitively demanding tasks. In fact, reaction time correlates with IQ at or above .80, which lends support for the use of reaction time as an indicator of general cognitive intelligence (Eysenck, 1982).

Galton's basic definition was also used in the conceptualization of general mental ability and what constituted "genius" on the Stanford-Binet intelligence test (Terman, 1917). Additionally, Galton was also the first to propose that general intelligence was the most important factor in an individual's success (Simonton, 2003). This statement has been echoed in current research that demonstrates general cognitive intelligence as a

strong predictor of academic success, career success, income level, as well as occupational status (Farsides & Woodfield, 2003; Judge, Klinger & Simon, 2010). In sum, Galton's early research on intelligence helped later theorists define and measure intelligence. In addition, it laid the groundwork for theories that view intelligence as a single construct.

Binet's Theory of Intelligence

Binet's theoretical view of intelligence was that intelligence was not a "thing" or concept that could be individually studied, but that intelligence was the average of all the abilities an individual possesses. Furthermore, these abilities were not only impacted by an individual's genetic heritage as Galton posited, but also by environmental factors.

Working with his longtime collaborator Theodore Simon, the Binet-Simon scale was created and then administered to 50 different children from various age groups. These 50 children were chosen by teachers who considered them to be of an average intelligence. The composite score on the Binet-Simon scale was later termed an intelligence quotient (IQ) (Stern & Whipple, 1914). The composite score indicated the child's mental age, which then was compared to the child's chronological age. By comparing the two ages one could determine whether the child was functioning at a satisfactory intellectual level (Binet & Simon, 1916).

Although this scale seemed to be distinguishing children with mental deficiencies from children with normal intellectual functioning quite well, Binet noted that there were many limitations to the use of the Binet-Simon scale because of the nature of intelligence. Binet argued that intelligence was multifaceted and difficult to study quantitatively, and suggested that future researchers try to establish qualitative measures of intelligence. In

addition, Binet noted that the trajectory of intellectual development was not always the same for each child due to environmental factors (Binet & Simon, 1916).

After the creation and application of the Binet-Simon scale in France, other countries became interested in using the scale. In America, Lewis Terman revised the Binet-Simon scale in order to make it a more valid and reliable scale that could be used with a wide range of ages and intellectual levels (Becker, 2003). The result was the Stanford-Binet intelligence test, which has gone through four revisions and now measures not only general intelligence but also fluid reasoning, quantitative reasoning, visual-spatial processing, working memory, nonverbal IQ as well as verbal IQ (Becker, 2003).

Spearman's Two-Factor Theory of Intelligence

With influence from Galton, Charles Spearman developed the most influential theory of general intelligence called the Two-Factor Theory of Intelligence. With the use of factor analysis Spearman (1904) determined that scores on various measures of intelligence were positively correlated with one another, providing evidence for a general factor of intelligence that is implicated in any test of intelligence. As a result, although mental tests may be diverse (e.g., spatial, verbal) they all measure something similar in varying degrees (Spearman, 1904).

Spearman (1904) found two factor loadings for each intelligence score, one general factor and a second factor related to the specific aspect of intelligence being measured (e.g., vocabulary in a verbal intelligence test). The first factor was a general intelligence, denoted by *g*, and defined as a general mental energy associated with cognitive processes separate from other mental abilities (e.g., memory). This mental energy differs in each individual, and may be elicited to different degrees depending on

the task required. The second factor was specific abilities, denoted by s , and defined as a measurement of specific aspects of intelligence such as spatial, verbal or artistic.

Spearman's research led him to the conclusion that g predicted success on tasks that required a high mental ability (e.g., learning a language) better than tasks which required specific skills (e.g., distinguishing between music notes). However, no matter what the task was, overall g predicted both types of tasks better than chance alone. In essence, Spearman theorized that intelligence was one construct, g , and that specific mental abilities were all positively correlated because to varying degrees they all had g in common.

Theoretical Underpinnings of EI

Theories of Multiple Intelligences

One of Spearman's most adamant critics was L.L. Thurstone, who alleged that intelligence could not be measured by g alone. Thurstone (1938) set out to disprove Spearman's g theory by developing and administering 56 different tests that covered an extensive variety of abilities to 240 participants at the University of Chicago to assess the number of factors found in each test. Seven independent factors emerged, which were termed primary mental abilities. The discovery of these primary mental abilities led to the creation of Thurstone's Theory of Primary Mental Abilities. The primary mental abilities included word fluency, verbal comprehension, spatial visualization, number facility, associative memory, reasoning and perceptual speed (Thurstone, 1938).

Due to criticism for using such a homogeneous sample, students with similar IQ's at The University of Chicago, Thurstone (1938) replicated his study with a heterogeneous sample of eighth-grade students with varying levels of intelligences. Results indicated

that the seven proposed primary mental abilities loaded accordingly, but the abilities were not as independent from one another as first hypothesized. In fact, many of the factors correlated to a degree, such as spatial with verbal reasoning. Thurstone (1938) explained these intercorrelations as evidence for a second-order general factor, *g*. Therefore, Thurstone's research demonstrated that there were multiple primary mental abilities, but that there was an underlying general intelligence factor as Spearman hypothesized. Thus, the existence of primary mental abilities paved the way for future researchers to develop hierarchical theories of intelligence as well as theories of multiple intelligences.

Gardner's Theory of Multiple Intelligences. In line with the research of Thurstone, Howard Gardner also challenged the position that intelligence could be derived from an IQ score. He developed the first theory of multiple distinct intelligences. However, instead of stressing the correlations between different factors that arose statistically, Gardner used biology, logical analysis, developmental psychology, experimental psychology, and psychometrics to develop a theory of multiple intelligences (Gardner, 1983). Gardner defined intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (Gardner, 1999, p. 34). In this definition culture was stressed because of the cross-cultural differences in abilities. Gardner (1999) proposed that because different cultures value different types of intelligences, the value placed on a specific skill would determine how evolved the intelligence is in that particular culture.

A broad definition of intelligence allowed Gardner to conceptualize intelligence in various ways. However, for a construct to be considered as a type of intelligence it had to meet eight different criteria that were developed through biological, psychological, and

psychometric research. The eight criteria included the possibility for brain isolation through brain injury, how the intelligence could be explained by an evolutionary standpoint, the existence of core operations (specific capabilities of that intelligence), the ability for the intelligence to be encoded through symbols, the developmental nature of the intelligence, the existence of individuals high in the intelligence (e.g., savants), support from experimental psychology, as well as from psychometric theory (Gardner, 1983).

Based on these criteria, Gardner (1983) proposed seven different intelligences: logical-mathematical intelligence, linguistic intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence. Gardner noted that although these are separate intelligences, they seldom function individually (Gardner, 1983). For example, a ballerina excels through the use of musical, bodily-kinesthetic and interpersonal intelligence.

Logical-mathematical intelligence includes the ability to use deduction, reason, logic, and to detect patterns. Linguistic intelligence is the ability to master language, both orally and through writing. These two intelligences are most linked to traditional definitions of intelligence (IQ) and school performance. Spatial intelligence is the ability to understand and manipulate the environment. This can be done through mental imagery, such as the method of loci, but is not limited to visual domains. This ability is also formed in the blind (Gardner, 1999).

Musical intelligence involves the ability to distinguish and compile musical notes, rhythms, pitches, and tones. This ability is instrumental in the performance and composition of music. Bodily-kinesthetic intelligence is the ability to make use of one's

body to create something or to solve problems. Gardner's last two intelligences are subsumed into a general personal intelligence, which includes interpersonal and intrapersonal intelligence. Interpersonal intelligence is the understanding of the behaviors, feelings, motivations, and decisions of others. Individuals high in this intelligence often enter helping professions such as psychology, counseling, teaching or spiritual advising. Intrapersonal intelligence is an understanding and regulation of ones own behaviors, feelings, motivations and decisions (Gardner, 1983).

Each of these intelligences has met Gardner's proposed eight criteria to be classified as actual intelligences and each can be measured. Gardner acknowledged that measuring these intelligences would call for intricate and long measures to truly conceptualize each construct, but that theoretically it could be done. In addition, recently Gardner (1999) has proposed an additional three intelligences: naturalistic, spiritual, and existential. After submitting these three intelligences to his eight criteria, he has found naturalistic to be the best candidate and continues to work on the definition and measurement of spiritual and existential intelligences. Gardner (1999) defines naturalistic intelligence as the ability to recognize and classify the numerous species found in the environment. These individuals include taxonomists, archeologists and marine biologists.

In conclusion, Gardner's research and conceptualization of intelligence contradicted the research of Spearman and other psychometric theories of intelligence that conceptualized intelligence as a single construct, but helped provide evidence for and expand theories like Thurstone's Theory of Primary mental abilities that proposed a number of factors of intelligence. In summary, Gardner's Theory of Multiple

Intelligences supported the basic notion that intelligence is multifaceted and cannot be defined or measured as one definitive construct.

Sternberg's Triarchic Theory of Human Intelligence. Robert Sternberg (1985) argued that tests of intelligence were not capturing all of the forms of intelligence used on a daily basis. Therefore, if one wanted to devise a measure of intelligence, that test should translate into actual life achievements. Sternberg's triarchic theory was created to incorporate past theories of intelligence, while including other aspects of intelligence previously not accounted for (Sternberg, 1985).

The Triarchic Theory of Human Intelligence defines three different representations of intelligent behavior: practical intelligence, analytical intelligence and creative intelligence. Practical intelligence involves the ability to thrive in one's environment. Individuals high in this aspect of intelligence are goal-directed, able to shape the environment if it is maladaptive for their goals, and know when to select a new environment if it cannot be shaped.

Analytical intelligence is based on Spearman's concept of *g*. Analytical intelligence includes metacomponents, performance, and knowledge acquisition, which are the mental mechanisms that influence intelligent behavior. Individuals high in this intelligence are able to solve problems, learn, plan, analyze, and compare and contrast information. Metacomponents are defined as the executive functions of the brain that manage, examine and assess the performance and knowledge acquisition components also involved in analytical intelligence. Metacomponents are used when an individual is mentally working through a problem to determine the best strategy to solve it; once this strategy is chosen, the performance component actually executes the strategy.

Performance components are defined as the fundamental processes involved in any mental act or what is involved when an individual actually carries out the problem solving strategy. These cognitive processes allow for the encoding of stimuli, the manipulation of information in short-term memory, mental comparisons of stimuli, and the retrieval of long-term memories. Knowledge acquisition is loosely defined as the faculty to learn, and encompasses components involve the learning and storage of new information. For example, this component involves the different strategies individuals use to memorize information (Sternberg, 1985).

Sternberg (1985) posited that individual differences in the application of metacomponents, performance and knowledge acquisition accounted for individual differences in intelligence. For example, an individual unskilled at coming up with and applying a problem-solving strategy will do worse than an individual who takes a while to develop and apply a strategy. This is because with the application of a strategy the individual solves the problem faster than one who employs no strategy at all.

Creative intelligence is the ability to deal effectively with novel situations, problems, and stimuli. Sternberg (1985) also referred to this as the experiential facet of his theory because it involves the innate connection the individual has with the external and internal environment. In novel situations this aspect of intelligence allows people to use creative thought processes to adjust adaptively. There are two types of abilities implicated in creative intelligence: novelty and automatization. These two skills lie on a continuum because performance on tasks can either be automatized or not automatized at all, making the tasks novel. Novelty skills help individuals deal with new situations by the application of previously learned knowledge to a new problem. Automatization skills

are implicated in tasks involving reading or writing, because these complex skills can only be performed if the operations involved have become automatic, thus requiring minimal mental effort (Sternberg, 1985).

In sum, the central feature of Sternberg's theory is the ability to adapt, both internally and also in the external environment. A second important feature is that to be successful one must employ practical, analytical, and creative skills depending on the type of environment or stimuli. The balancing of these skills and the use of them in the correct contexts will help the individual thrive (Sternberg, 1985). In conclusion, this theory encompasses a wide range of human abilities that are implicated in reasoning, decision-making and survival, while providing support for the notion that intelligence cannot be measured or conceptualized by a single score on an intelligence test. Instead, there are multiple aspects of intelligence that must be measured in different ways.

Theories of Emotion and Cognition

Although historically emotion and cognition have been viewed in opposition to one another, current theories on the relationship between emotion and thought usually have a common consensus. Whether one takes a psychoevolutionary or a developmental standpoint, each theory agrees that the relationship between emotion and cognition exists and is complex. However, as for the definition of emotion, like intelligence, it continues to be an area of controversy and confusion.

Psychoevolutionary theory. Based on decades of research, Robert Plutchik's (2001) psychoevolutionary model of emotion provides evidence for emotions as adaptive and with biological basis. One main claim of the theory is that emotions, including their evolutionary precursors, are found not only in humans but in animals as well. It was

hypothesized that by studying animal research one could gain insight into human emotions, mood states as well as personality traits. Another claim was that emotion, cognition, and behavior all interact through feedback loops. Finally, this theory posited that all emotions could be understood by using a specific model that accounted for the hundreds of different words for emotions cross-culturally (Plutchik, 2001).

The evolution of emotional expression in animals and humans. Using the work of Charles Darwin's pivotal finding that natural selection did not only apply to an organism's structure or anatomy (e.g., posture) but rather it also applied to the organism's brain and expressive behavior, Plutchik (2001) provides support for the theory through the application of animal and human observations. The adaptive qualities of emotion can be seen, for example, in the emotion of fear. The fear response is a result of natural selection because it prepares an organism psychologically and physiologically for a predator or threat to offspring. This increased arousal is adaptive because it increases the organism's awareness of the environment, thus aiding in its decision to attack or retreat. The emotion of love has also been naturally selected for as evidenced by its adaptive role in attachment between a primary caregiver and a child, mate bonding, reproduction, as well as parental investment (Plutchik, 2001).

Plutchik (2001) does concede that not all emotions are as easy to explain from an evolutionary standpoint as fear and love. This is because, whereas adaptive behaviors like finding food, fight or flight, and sex are easy to recognize and evolutionarily interpret in most species, the connections between emotions and behavioral displays are harder to detect. However, Plutchik (2001) hypothesizes that by looking at evidence from common behavioral patterns of species, including what stimulates them, the choices the organism

makes, the effects of those choices, as well as how other members of their species react to each others behaviors, one can make inferences on the role of emotions in those behavioral patterns.

Plutchik (2001) provided a broad definition of emotion to help understand the emotionally expressive behaviors of animals and humans: “a complex chain of loosely connected events that begins with a stimulus and includes feeling, psychological changes, impulses to action, and specific goal directed behavior” (Plutchik, 2001, p. 345-346). Therefore, emotions are reactions to and often are motivators for future behavior. For example, emotions are triggered during times when survival is at the forefront, like during attacks or when finding a potential mate.

Evidence for emotionally expressive behavior and its adaptive nature can also be seen through Charles Darwin’s research. Darwin found that expressive behaviors help humans as well as animals communicate information about the environment to other members of their species (as cited in Plutchik, 2001). For example, animals produce specific vocal tones or movements to indicate they have found food, which differ from the behaviors and vocal tones used to indicate danger. Darwin stated that these expressive behaviors are implicated in survival because, without the display and mutual understanding of expressive behaviors, the members of species are limited in the ability to communicate with one another, thus impacting their chances of survival. In addition, Darwin found evidence of expressive behaviors in insects that produce different stridulations (noises made by rubbing different body parts together) for anger, love, and fear (as cited in Plutchik, 2001).

In conclusion, Plutchik (2001) states that the existence of adaptive expressive behaviors provides evidence for the evolutionary standpoint that cognitive functions evolved for biological as well as emotional needs of a species. This is because cognitive functions help the species predict the future by eliciting emotions that alert the organism to take action.

The feedback process of emotion and cognition. As previously demonstrated, an organism makes a prediction based on limited information from the environment in order to decide if the future is to bring food, danger, or a potential mate; depending on that prediction an organism will either hide, run, fight, eat, or mate. This thought process is intricate and can include taking in sensory input, evaluating it, encoding vital information, and comparing the new information to existing memory storages (Plutchik, 2001).

To better understand the chain of events implicated in emotions, one must view the relationship between emotion and cognition as a feedback process and not as a linear relationship. That is, sometimes cognition can affect emotion and sometimes emotion can affect cognition through feedback processes. For example, although it is common for cognition to be at the beginning of a feedback process, it is not uncommon for feeling or arousal states to later influence cognition (Plutchik, 2001). Damasio (1994) showed that when an animal crosses paths with another species it unconsciously evaluates the features (e.g., size, color, speed) of that animal for dangerousness. Signals are then quickly sent to the amygdala, which is the primary structure that processes emotional reactions, then to the prefrontal cortex, which plans the future behavior. In this scenario, emotional

aspects of the brain are stimulated unconsciously before any conscious display of feelings or behaviors associated with that emotion (Damasio, 1994).

After emotion influences thought or vice versa, the feedback system continues with the impulses to action that commonly follow emotions. These impulses to action can include the constriction of muscles, an increased heart rate, increased perspiration and facial expressions. Next in the feedback system are actual actions like fighting, yelling, running, and crying. However, it must be noted that because the relationship between emotion and cognition is complex, sometimes impulses to action do not result in actual actions. This can be due to fear of revenge, failure or embarrassment (Plutchik, 2001).

If the call to action results in an actual behavior, the behavior often will bring the organism back to a state of homeostasis that preceded the stimulus or environmental condition that started the emotion-cognition feedback system. For example, when a child loses a primary caregiver, the feedback system produces mournful behaviors such as crying or yelling. Often by engaging in these behaviors the child will attract social support from other family members, which will help the child back to equilibrium (Plutchik, 2001).

This complex feedback system was named “The Behavioral Homeostatic Negative-Feedback System” (Plutchik, 2001, p. 348). In this system, emotion is not just a feeling but a chain of events made of various feedback loops, determined by whether emotion and action influences cognition or whether cognition is influencing feeling.

A model for emotions. In order to incorporate the various things one knows about emotions from an evolutionary perspective, Plutchik (2001) has devised a circumplex

model for emotions that is similar to the models used to understand colors as well as to conceptualize personality. This model consists of eight basic emotions that are conceptualized as four bi-polar pairs and primary dyads that are mixtures of the basic emotions. In addition, this model includes a third dimension to account for the intensity of emotions.

This model was devised based on centuries of research and theories on what the basic emotions are. In the disciplines of psychology, philosophy and even biology, various conceptualizations on what makes an emotion basic have been proposed. After examining this research Plutchik (2001) came to the conclusion that it is nearly impossible to come to a clear consensus because of the different theories used to determine the basic emotions, such as the use of factor-analysis, cross-cultural findings, as well as child development research. Plutchik (2001) chose a psychoevolutionary model that uses evidence from evolutionary insights and empirically valid data on displays and definitions of emotions to determine the basic emotions.

Plutchik (2001) stated that although there are hundreds of different words for emotions depending on the language and culture they come from, the majority can be divided into emotion families based on the similarity of the word meanings. To account for the emotions that do not fall into those families one must look to the model used to explain colors. On the color wheel there are primary colors, their complementary opposites as well as secondary colors. To produce a secondary color, two of the primary colors must be mixed. Using this same logic one can show that there can be combinations of basic emotions that result in an emotion that has characteristics of both basic emotions. For example, when mixing the emotions of joy and acceptance, the

emotion of love is created. Plutchik (2001) terms these mixtures primary dyads and states that their existence accounts for emotions that do not fall into the basic emotion families.

Based on this psychoevolutionary theory of emotions, the eight basic emotion families, conceptualized as four bi-polar pairs, include joy-sorrow, anger-fear, acceptance-disgust, and surprise-expectancy. The primary dyads include disapproval (sorrow and surprise), awe (fear and surprise), submission (fear and acceptance), love (joy and acceptance), optimism (joy and expectancy), aggressiveness (anger and expectancy), contempt (anger and disgust) and remorse (disgust and sorrow). Finally, Plutchik's (2001) third dimension of emotion, intensity, ranked expressions of the eight emotion families from low to high intensity. The emotion family of joy begins with serenity followed by joy then ecstasy; sorrow begins with pensiveness followed by sorrow then grief; anger begins with annoyance followed by anger then rage; and fear begins with boredom followed by fear then terror. In addition, the emotion family of acceptance begins with trust followed by acceptance then admiration; disgust begins with boredom followed by disgust then loathing; surprise begins with distraction followed by surprise then amazement; and expectancy begins with interest followed by expectancy then vigilance (Plutchik, 2001).

In conclusion, this psychoevolutionary theory of emotions provides evolutionary support for the relationship between emotion and cognition across diverse species, outlines a behavioral homeostatic negative-feedback system that explains the complex relationship between emotion and cognition, and provides a model that helps place the hundreds of different words of emotions into eight emotion families.

Developmental Theory of Emotions

One developmental theory of emotion is The Perceptual Motor Theory of Emotion posited by Howard Leventhal (1982), who proposed the mechanisms involved in emotional experiences. According to this theory, emotion is defined as an experience, one that mimics perceptual experiences that are private to the individual experiencing them, experiences that can only be measured by viewing the indicators of the perception. Emotional indicators include verbal, behavioral, expressive, and autonomic responses. Taken individually, no one indicator can define what an emotion is, because emotion is really a hypothetical construct that exists but cannot be directly observed.

This theory is developmental in nature and proposes a hierarchy of how humans process emotional information from birth to adulthood. In addition, with the application of this theory one can gain insight into the relationship between emotion and cognition. The emotional processing system is conceptualized in three stages and with three hierarchical levels that connect stimuli to emotional experience. The first stage is the reception stage, which includes receiving, interpreting, and encoding information that constructs an emotional experience. The second stage is the planning and action stage, during which the individual must handle the emotional experience. For example, does the individual overtly display the emotion or try to keep it in? The third stage is the appraisal stage, in which the individual evaluates the emotional experience. Here one must determine whether the emotional experience was adaptive or whether it helped meet a goal (Leventhal, 1982).

This stage system is quite simple to conceptualize, but it is not complete without an understanding of its hierarchical organization. The hierarchical property is important

because it shows that emotional processing and emotional experiences are the result of multiple levels of processing, which often act together to produce emotional output. The three levels of emotional experience include sensory-motor processing, schematic processing, and conceptual processing (Leventhal, 1982).

Sensory-motor processing. This is the first type of emotional processing that is observed in humans. Sensory-motor processing is conceptualized as an innate emotional processing that is seen in infant facial and behavioral reactions to the human face or the mother's voice. According to Leventhal (1982), the variety of infant reactions (i.e., laughter, crying, disgust) provides evidence for innate basic emotions and their associated experiences. These early infant emotional reactions are quite simple and are in line with Piaget's research, which demonstrated that all sensory motor reactions have motor meanings (Piaget, 1954). In infants, motor-based feelings are not fully developed, nor are all sensory motor reactions. Infants have not yet formed concrete associations between emotions and specific objects nor do they understand how to cope with their motor-based feelings. This is because, developmentally, the child lacks the memory structures necessary to associate the emotional states to. In conclusion, Leventhal (1982) views sensory motor processing of emotional states similar to other motor reflexes, because there is no association formed between emotional states, complex environments, or coping behaviors.

Schematic processing. This type of processing is formed by the repetition of sensory motor emotions, which the child begins to associate with specific stimuli. This leaves the child with memories that include his or her perception and reaction to the stimuli. Initially these are encoded as separate concrete memories because the child is

trying to encode not only pivotal information about the environment but also a detailed record of the specific emotion elicited. Leventhal (1982) calls this a “motor memory of expressive and autonomic reactions” (p. 825).

After repeated exposure to emotionally stimulating events the child begins to form emotional schemas. A schema is defined as a collection of stimulus-response conditions. Whenever a stimulus shares similar aspects to previous emotionally stirring stimuli, specific emotional schemas are elicited. Therefore, those concrete memories collectively become average emotional schemas over time (Leventhal, 1982).

Once again, there is a developmental nature of the emotional schemas. Early schemas are often based highly on perception and existing concrete memories. During this phase the child is still scanning the environment consciously for stimuli that are similar to stimuli that previously elicited intense emotions. Over time, the schemas become more ingrained, automatic, operational and less reliant on perception. Leventhal (1982) compares this schematic development to a child moving from Piaget’s preoperational to the concrete operational stage of development.

Evidence for the existence of schematic emotional processing can be found in mental imagery’s role in emotion. For example, when a therapist employs systematic desensitization to help a patient overcome a fear of dogs, the therapist may use pictures of dogs or have the patient imagine petting a dog to help the patient overcome the fear. Once the patient is comfortable with these things, the therapist may then bring in an actual dog. In this scenario the schematic imagery of the dog and its related emotion are altered first in the mind in order to change the schematic association of fear with dogs. Additional evidence is found from individuals who experience phantom pain in an

amputated body part. The existence of this phenomenon suggests that emotions can be stored in an individual's perception and schematic representation of that body part, which are evident even after it is removed (Leventhal, 1982).

Conceptual processing. Conceptual processing involves the storage of past emotionally relevant information so that it can be accessed in the future and actual display of emotions. Conceptual processing uses propositional memory networks to encode memories, which are much more abstract than emotional schemas. Information that is stored by propositional memory networks is often not severely altered with the introduction of novel emotional experiences. Usually specific content is ignored because the experience only has to be abstractly tied to the previous emotional experiences. As a result, only the pivotal information about the emotional situation is conceptually processed and encoded in propositional storage (Leventhal, 1982).

Memories stored using conceptual processing are created when an individual reflects on past emotional experiences. This reflection can include why the situation occurred, the feelings associated with it, whether the individual was wrong or right, and the ramifications of the decisions made. The result of the reflection creates a memory about the situation as a whole instead of just a memory of the event that has not been thought through. Leventhal (1982) stated that processing information this way is implicated in the ability to control emotions. By mentally reviewing emotional expressions one is able to re-experience the emotions and practice how to control them so that in future situations one will be able to evaluate the situation and respond maturely.

Emotion and cognition. According to the perceptual motor model, there are limited times when emotional processing systems give rise to emotions without any

cognition. In addition, there are limited times when cognition and perceptive processes do not follow emotion. For example, it is only during early infancy that infants experience emotions without any prior cognitive experiences that could account for their knowing when to express the emotion. Once the child begins to use schematic or conceptual processing, emotion and cognition are completely intertwined. This is because the child is now storing emotionally relevant experiences and is also producing emotional responses to stimuli characteristic of previous experiences. Therefore, in almost any situation, emotion is supplemented with cognition. Emotion can be the result of cognitive processes, or can elicit cognition through higher order memories, like schematic and conceptual memories (Leventhal, 1982).

Conceptualizing Emotional Intelligence

It was out of the research on models of multiple intelligences, emotion's integral relationship with cognition, and the evolutionary importance of emotions, that the conceptualization of emotional intelligence (EI) emerged (Bar-On, 2006, Salovey and Mayer, 1990, Schutte et al., 1998). The notion that intelligence is multifaceted, that one test cannot capture all the intelligences being used in daily life, lent support for EI to be considered an actual intelligence. The findings that emotion, cognition, and behavior are intertwined, that emotional understanding is adaptive (e.g., love and attachment), and that emotional schemas impact decision-making, supported the role of EI in daily life. It supported the idea that someone who is skilled at emotional understanding, both in self and others, may thrive more in aspects of life than others who lack emotional abilities.

The First Conceptualization of EI

The first articles proposing a model of EI appeared in scientific journals during the early 1990's. Salovey and Mayer (1990) were arguably the first pioneers in the field of EI, and during the first few years of its conception were the dominant researchers on the topic. Salovey and Mayer conceptualized EI using Edward Thorndike's social intelligence and Howard Gardner's intrapersonal and interpersonal intelligences. Thorndike's definition of social intelligence, the ability to understand and manage others, was incorporated into the working definition of EI with a focus on understanding and managing other's emotions. However, Salovey and Mayer also added in the ability to understand and manage emotions of the self. Gardner's interpersonal and intrapersonal intelligences, specifically the aspect of knowledge about the self and others' feelings, impacted Salovey and Mayer's (1990) conceptualization of EI. Incorporated into the working definition were the intrapersonal abilities to access a wide range of emotions, discriminate amongst emotions, label them, and use one's knowledge of one's emotions to guide behavior. The interpersonal abilities to monitor the emotions of others and to use that understanding to predict their future behavior was also added to the working definition of EI.

As a result of this theoretical research, Salovey and Mayer (1990) defined and divided EI into three main branches: appraisal and expression of emotions, regulation of emotion, and utilization of emotion. Under appraisal and expression was the ability to appraise and express verbal and nonverbal displays of emotion in the self and in others. This was considered emotionally intelligent behavior because the more accurate an individual is at perceiving and responding to emotions, the better he or she is at

expressing those emotions to others and responding appropriately to internal feelings. These skills require a high level of internal emotional processing, and are vital to adaptive social functioning. Additionally, these emotional skills have evolutionary importance (e.g., detecting nonverbal displays of fear), as was discussed by Plutchik (2001).

Regulation of emotion was divided into regulating emotion in the self and in others. Individuals experience emotions in the setting they occur in, as well as in a reflective sense. This reflective aspect of emotional understanding allows individuals to assess, monitor, and then regulate their own emotions. In addition, it allows individuals to reflect on the emotional outbursts of others, in order to help others regulate their emotions in the future. This is considered emotionally intelligent behavior because the consistent reflection and regulation of emotions can lead to more adaptive emotional states. Regulation of emotions can help reinforce positive emotions in the self and can even motivate others' towards reaching their goals through the reinforcement of positive emotions.

Utilization of emotion includes flexible planning, creative thinking, motivation, and direction of attention. This aspect of EI occurs when individuals use their ability to perceive, control, and manage emotions in problem solving. Utilization of emotions is important because of the effect emotions have on future plans, memory organization, and on behavior. Flexible planning is considered emotionally intelligent behavior because those who have access to a wide variety of emotions, and reflect on the emotions experienced, tend to have the ability to generate a variety of cognized outcomes. They

can visualize different choices and the emotions they would experience in a decision-making scenario.

Creative problem solving is considered emotionally intelligent behavior because of the role emotions have in the problem-solving strategies one employs. As with forming memories, the mood state people are in has an effect on the features of a problem they focus on, or the method they choose to solve it. Those in a positive mood state may engage in creative problem solving because they are more open to different routes to solve a problem. Those in a negative mood state may be discouraged from employing a novel strategy due to fear of failure. The impact of emotion on attention is considered emotionally intelligent behavior because strong emotions can redirect attention to a more immediate issue, or a more important stimulus. Emotions can help individuals prioritize their attention, and assign their resources accordingly. Finally, motivation can be considered emotionally intelligent behavior because emotions can impact levels of persistence. For example, an individual experiencing anxiety may use the anxiety to motivate himself or herself to prepare heavily for the next exam. Or an individual may use his or her positive mood to instill confidence, which will help persistence during difficult challenges.

Therefore, according to Salovey and Mayer (1990), EI was a term that included various abilities: differentiating between emotions, monitoring one's emotions, perceiving others' emotions accurately, using the emotion based information to guide behavior, and accurately judging displays of emotion. Emotionally intelligent individuals are at an advantage at problem solving; EI influences how the problem is identified and the way it is solved. These individuals are in tune with their emotions, use them to guide

decisions, and are respectful of the internal experience within themselves and in others. In addition, emotionally intelligent individuals are well adjusted; they use their awareness of feelings in themselves in others and their openness to both positive and negative emotions, to regulate their affect accordingly. They understand that experiencing negative emotions (e.g., failure) is sometimes necessary to reach higher goals, and that helping others requires great emotional strength.

After their conceptualization of EI, Mayer, DiPaolo, and Salovey (1990) aimed to show that having a high EI was adaptive; that individuals high in EI had high social functioning. To test these claims the authors studied 139 adult participants' abilities to perceive emotions in faces, colors, and designs. The data were then compared to the participants' abilities to empathize with other individuals, as well as to various personality characteristics. One of the main hypotheses was that those who scored high in accurate perception of emotions in various stimuli would have higher empathy. Empathy was used as an outcome variable based on the idea that one must be able to perceive the emotions experienced in others in order to be empathetic. Thus, those who are emotionally skilled, demonstrated by their emotion perception, should be more empathetic, and to be empathetic suggests one has high social functioning. Results indicated that empathy was most closely related with high scores on perception of emotion in faces, colors and designs. This data lent support the importance of emotionally intelligent behavior in social functioning.

Mayer and Salovey's Ability-Based Model

In the next few years Mayer and Salovey modified their first conceptualization of EI into a more specific definition of EI, and in 1997 released the complete theory. EI was

defined in four branches: (1) the ability to accurately perceive and express emotion, (2) the ability to use emotion during thought processes, (3) the ability to understand emotions, emotional language and the signals expressed by emotions, and (4) the ability to regulate emotions in one's self and in others to encourage emotional and intellectual growth. In this conceptualization, EI is a set of interrelated abilities, and these abilities account for differences in the accuracy of using emotions. For example, the more accurate an individual's understanding and use of emotions is, the better the individual is at using his or her emotional understanding during problem-solving in a variety of areas.

The first branch, perception, appraisal, and expression of emotion, is the foundational emotional ability that is pivotal to the remaining three branches. This ability takes form in infancy, when infants learn to identify and distinguish the emotions experienced in their body responses, feelings, and thoughts. As they develop into mature adults, they learn to not only identify emotions within themselves, but also to perceive emotions in other individuals, and in abstract settings (e.g., artworks, language). They also learn to express emotions and the needs associated with them and to label emotions. Finally, the ability to distinguish between honest and dishonest displays of emotions is learned (Mayer & Salovey, 1997).

In the second branch, using emotion to facilitate thought, the ability to perceive and express emotions is implicated in thought processes. Emotions can be used as alerts (e.g., a baby crying to alert need for food) or to direct attention to something important (e.g., feeling concern over impending homework assignments directing you towards completing them, over other activities). Emotions can also help individuals understand the frame of reference of others. For example, when reading a story, one can imagine

how a character is feeling based on the characteristics they are displaying (e.g., affect, body posture). The moods one is experiencing in the moment can also effect the perspective one takes for solving a problem. That is, the ability to shift between moods can help facilitate multiple points of view on a situation or problem.

The third branch, understanding emotions, emotional language, and the signals expressed by emotions, utilizes the abilities of the first two branches. This branch contains the ability to understand the relationship among emotions and the words used to express emotions, interpret the meanings behind emotions, understand complex emotions, as well as how to transition from one emotion to another. For example, the emotion of sadness can be interpreted in many different ways. Sadness may be due to death of a loved one, due to loss of a sporting event, or due to a failing grade in school. The ability to understand that sadness can convey different things can help individuals inquire into the cause of sadness and respond in appropriate ways.

The fourth branch, regulation of emotions in one's self and in others to encourage emotional and intellectual growth, is an umbrella branch that utilizes all of the abilities discussed to promote growth. Emotionally intelligent individuals are able to experience pleasant and unpleasant emotions and know the importance of analyzing those experiences. They can reflect back on their emotional experiences, comment on the rationality of their choices, what influenced their emotional patterns, and discuss changes they can make in the future.

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002) is one of the most widely used, well-known tests of EI. The MSCEIT was designed to measure the four theoretical branches of EI: perceiving

emotions, using emotions to facilitate thought, understanding emotions (e.g., changes in emotions), and managing emotions. Thus, this measure can provide an overall EI score, or can be factored into the aforementioned branches. In this measure, participants engage in a variety of tasks, such as designating the emotion present in a picture, rating how much a particular emotion would be helpful in a certain situation (e.g., tension, surprise and joy when meeting in-laws), and reading vignettes and deciding which emotion best describes the vignette.

Schutte Emotional Intelligence Scale (SEI; Schutte et al., 1998) is a short, self-report measure that was developed based on Mayer and Salovey's model of EI. Schutte et al. (1998) aimed to create a valid and reliable measure of EI that could be used easily and quickly for research purposes. Schutte et al. began with 62 items stemming from Mayer and Salovey's model and then subjected those items to factor analysis, which resulted in 33 items. These items measured: "appraisal and expression of emotion in the self and others, regulation of emotion in the self and others and utilization of emotions in solving problems" (p. 175). For example, participants are asked to indicate their agreement with the following statements, "when I am in a positive mood, solving problems is easy for me" or "by looking at facial expressions, I recognize the emotions people are experiencing."

Goleman's Model of EI

Societal interest in EI began to mount during the mid-1990's with Daniel Goleman's influential book *Emotional Intelligence*. Goleman's book used the model first conceived by Salovey and Mayer in 1990, while adding other traits he found important in regards to their utility in leadership. Goleman (1995) viewed EI as a large assortment of

emotional competencies and expertise that compel performance. Examples of emotional competencies included trustworthiness, adaptability, innovation, communication, and teamwork abilities. Goleman posited that EI competencies were not innate capacities, but were learned and could be modified through education. However, Goleman did concede that people are born with a general emotional ability that will determine their capacity to learn EI competencies.

Due to the book's huge commercial success, the public's view of what emotional intelligence ranged from the ability to control emotions (knowing and managing) to eclectic traits of self-control, empathy, and delay gratification. In addition, Goleman's claims that EI matters more than IQ, and that those with high IQ's often falter due to their low EI, not only influenced the public's view of EI but also influenced the scientific study of EI. Researchers were now studying a variety of traits, grouping them together as EI, and were drawing conclusions that were not based on the original conception of EI proposed by Salovey and Mayer. These discrepancies on what EI is, and what it is not, led researchers in the field to conceptualize their own definitions and measurements of emotional intelligence (e.g., Bar-On). While Mayer and colleagues viewed emotional intelligence as a set of abilities that must be measured through ability-based measures, other researchers saw it as a term for a mix of traits that could be measured through self-report (e.g., optimism, self-esteem, and happiness).

The Emotional Competencies Inventory-2 (ECI-2; Goleman, Boyatzis, & McKee, 2002). The ECI-2 was created to measure the four main constructs of EI (with corresponding sets of competencies) posited by Goleman (1995): self-awareness (reading emotions correctly, using gut instincts to guide decisions), self-management (control of

emotions and impulses, adaptiveness), social awareness (understanding social networks, sensing and reacting correctly to others emotions) and relationship management (controlling conflict, inspiring and influencing others).

Bar-On Model of Social-Emotional Intelligence

Bar-On's model of social-emotional intelligence was theoretically influenced by Darwin's work on the importance of emotional expression in survival. Bar-On (2006) viewed emotional expression and recognition as emotionally and socially intelligent behavior due to its adaptive quality throughout history (e.g., in communication). In addition, Bar-On was influenced by Thorndike's conceptualization of social intelligence, Gardner's interpersonal and intrapersonal intelligences, as well as the research on alexithymia, the inability to recognize, understand, and describe emotions. Bar-On viewed the research on alexithymia as crucial to the understanding of emotional-social intelligent behavior, because of the social and emotional effects of alexithymia: social exclusion and chronic dysphoria. Bar-on posited that alexithymia and emotional intelligence were on a continuum, with alexithymia at the pathological end of the spectrum.

As a result, this theoretical research led Bar-On (2006) to define EI as "a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how well we understand and express ourselves, understand others and relate with them, and cope with daily demands, challenges and pressures" (p.14). To Bar-On EI was not only a set of abilities, as was posited by Mayer and Salovey (1997), but included related facilitators, personality traits, and competencies. According to Bar-On, the ability to identify and convey emotions is influenced by other related competencies, including

emotional awareness and assertiveness.

In Bar-On's theory of EI, the interrelated emotional and social competencies, skills, and facilitators can be divided under five major components of EI. The five main components of EI included the ability to identify, comprehend and convey emotions and feelings (intrapersonal ability), the ability to comprehend others feelings and relate to them (interpersonal ability), the ability to manage and control emotions (stress management), the ability to handle, modify, adjust and resolve problems of personal and interpersonal natures (adaptability), and the ability to create positive affect and be motivated (general mood).

Competencies related to intrapersonal ability include self-regard, emotional self-awareness, assertiveness, independence and self-actualization (e.g., striving for personal goals). Individuals skilled in this ability have a strong understanding of their selves and their emotions. They are not afraid to express themselves and are not emotionally dependent on others. They understand the importance of emotional understanding, and use their emotions in a non-destructive way. Interpersonal ability, which is intertwined with intrapersonal ability, consists of the competencies of empathy, social responsibility, and establishing interpersonal relationships. These individuals can understand the emotions of others, and actively contribute to the well-being of others. They possess a basic social consciousness and are respectful and accepting of the differences between themselves and others. These skills allow them to form constructive relationships with others, which are mutually satisfying.

The ability of stress management includes the competencies of stress tolerance and impulse control. Individuals with this ability are able to control their emotions and

impulses in a variety of settings. During stressful events, they are able to cope with stress adaptively and do not allow their emotions to direct themselves towards destructive coping mechanisms. The ability of adaptability includes the competencies of reality testing (e.g., being objective with one's feelings), flexibility, and problem solving. Individuals with these skills are able to externally validate their emotions in a non-objective manner. When experiencing an event, they think it through and try to determine what they are feeling, whether it is justified, what others are experiencing around them, and what they should do next. It is the ability to have clarity in a situation, to not let emotions get the best of one, and to use the clarity in decision making. Finally, general mood consists of optimism and happiness. These individuals enjoy life, have a positive outlook on life even during adversity, and are satisfied with who they are. These skills allow the individual to form relationships with ease, not let negative events dictate influence reasoning, and help keep the individual motivated towards achievement.

In conclusion, Bar-On (2006) posited that individuals high in these EI skills are able to understand and express themselves, deal with daily hassles adaptively, and understand and identify with others. They are emotionally and socially aware of themselves, know their strengths and weaknesses, and can express their feelings and thoughts empathetically. Interpersonally, they have awareness of the emotions of others, respond to them accordingly, and are able to create collaborative, reciprocally pleasing relationships. In essence, being emotionally and socially intelligent suggests that one can “manage personal, social and environmental change by realistically and flexibly coping with the immediate situation, solving problems and making decisions” (p. 4). To accomplish this they must control their emotions so that the emotions are working with

them, while staying optimistic and motivated.

The Bar-On Emotion Quotient Inventory (EQ-I; Bar-On, 1997). The EQ-i was created as a self-report measure of EI that specifically measures the ability to thrive when faced with environmental constraints and demands. This measure identifies 10 major components of EI: self-regard, emotional awareness, assertiveness, stress tolerance, impulse control, reality testing, flexibility, problem solving, empathy and interpersonal relationships. It also measures 5 factors that influence and assist EI: optimism, self-actualization, happiness, social responsibility and independence.

Conclusion

With research of EI only spanning the last 20 years it is a fairly new construct. Models and approaches have emerged that vary in their definitions and measurements of EI. For the purposes of this paper, each model or approach that was presented discussed the conceptualization, definition, and measurements that have been created to measure EI. Each of the aforementioned models and approaches has had their share of support and criticism in the literature, whether it is with regard to their definitions, validity, measurement, or scoring methods (McEnrue & Groves, 2006). However, whatever differences exist between the models and approaches discussed, the important part is that they all have been found to predict various areas of life success (e.g., Adeyemo, 2007). For a review of the support and critiques of the models/approaches and their measurements see Landy (2005) or Mayer, Roberts, and Barsade (2008).

Adjustment to College Literature

The transition from adolescence to adulthood can be a stressful time, especially in the college setting where large changes occur in many life domains. College students

must adjust to changes in their social systems, living situations, academic expectations, and levels of independence. They must adjust to living on their own without consistent parental guidance, managing their own finances, balancing an academic workload, making new friends, and resisting maladaptive coping strategies (e.g., drugs and alcohol), all while trying to maintain their psychological and physical health (Gall, Evans, & Bellerose, 2000). Due to the wide array of changes and demands placed on college students, college adjustment can be defined as the social, psychological, emotional, physical or academic stressors students face when transitioning from high school to college, and the students' abilities to cope with the stressors (Hiester, Nordstrom, & Swenson, 2009).

In response to the high stress environment, many students end up dropping out of college before graduating (Gerdes & Mallinckrodt, 1994; Parker, Hogan, Eastabrook, Oke, & Wood, 2006). This is of concern, especially with the increasing importance of a college education in the workforce. For example, in 2007, the yearly earnings of an adult with a 4-year college degree were approximately \$45,000. When compared to the \$23,000 in yearly earnings of an adult with a high school diploma, there is almost a 50% decrease in pay for not attaining a college degree (Planty, Kena, & Hannes, 2009).

Research has thus focused on identifying potential factors that affect an individual's ability to adjust to the college environment. The following section will cover variables with sizeable literature supporting their impact on successful college adjustment, academic self-concept and cognitive ability (i.e., IQ). The following section will also include the available research on a proposed third variable, emotional intelligence (EI).

Additionally, it should be noted that due to the wide definition of college adjustment various measures of college adjustment, and various aspects to college adjustment have been investigated. These have included academic achievement (e.g., Choi, 2005), student retention (e.g., Parker et al., 2006), social, emotional, personal, and institutional adjustment (e.g., Martin, Swartz-Kulstad, & Madison, 1999), and physical and psychological health (e.g., Schmitt et al., 2009).

Academic Self-Concept and Adjustment

Hurtado, Han, Saenz, Espinosa, Cabrera and Cerna (2007) investigated the effects of various factors on minority students' adjustment to the first year of college. For that study, 75 academic institutions were included in the data set, which resulted in 6881 minority participants (e.g., African American, Hispanic) and 1832 non-minority participants (e.g., White, Asian). Adjustment to college was measured through self-report questions covering management of the academic environment and sense of social belonging (e.g., "How successful are you at adjusting to the academic demands of college" and "I see myself as part of this campus community"). Variables that were proposed to impact college adjustment included participant background characteristics (e.g., race, gender), family characteristics (e.g., family support), social self-concept, academic self-concept, and high school GPA.

Results indicated that for minority students, high school GPA, academic self-concept, and time management composed 34% of the variance in success in adjusting to the first-year college academic environment (Hurtado, Han, Saenz, Espinosa, Cabrera, & Cerna, 2007). High school GPA and academic self-concept were also contributors to academic adjustment for non-minority students, although to a lesser extent. In relation to

sense of belonging, an aspect of social adjustment, family support and faculty communication were significant predictors for both minority and non-minority students' adjustment. As a result, the authors concluded that students with a strong academic self-concept, a high GPA in high school, faculty communication, and time management skills had a greater chance of successfully adapting to the college environment.

That study lends support for the role of academic self-concept in adjustment to the college environment. It also shows the importance of both ability and belief in ability in academic adjustment, with a significant portion of the variance in adjustment being explained by high school GPA and academic self-concept. Additionally, that study demonstrates that a wide array of factors impact college adjustment, that no one factor can account for one's success or lack of success in college.

In another study, Awad (2007) examined the role of racial identity, academic self-concept, and self-esteem on one aspect of college adjustment, academic achievement. Participants included 313 undergraduate African American students who completed the Cross Racial Identity Scale (CRIS; Cross, 1995) as a measure of racial identity, the Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965) as a measure of self-esteem, and the Academic Self-Concept Scale (Reynolds, 1998) as a measure of academic self-concept. Academic achievement was measured by both GPA and graduate record examination (GRE) scores.

Results indicated that the best predictor of academic achievement in college, as measured by GPA, was academic self-concept. Interestingly, academic self-concept was not a significant predictor of GRE scores, which was attributed to the inherent definition of academic self-concept, a student's perception of his or her ability to handle the

everyday issues that occur in an academic setting. Awad (2007) suggested that the GRE covers concepts that a student may perceive as unrelated to their everyday scholastic life, and thus academic self-concept may not influence standardized tests covering a variety of broad concepts.

Overall, that study provides support for academic self-concept's role in adjusting successfully to the academic challenges of college, as demonstrated by GPA. These findings are also in agreement with the theoretical underpinnings of academic self-concept, a construct that is defined by an individual's belief in his or her ability in a specific academic setting. Thus, these results lend support for the role of academic self-concept in specific academic environments; an environment where a student's perception of his or her ability in a specific subject or class impacts his or her success.

Choi (2005) measured self-concept and self-efficacy at various levels of domain specificity, in order to determine if self-efficacy or self-concept was a better predictor of college academic achievement, and whether the degree of domain specificity had any effect on the construct's ability to predict end of semester course grades of 230 undergraduate students. Choi administered three self-efficacy scales: the general self-efficacy subscale of the Self-Efficacy Scale (SES; Sherer et al., 1982), the College Academic Self-Efficacy Scale (CASES; Owen & Froman, 1988) and a 17-item specific self-efficacy scale used in a study by Wood and Locke (1987). In addition, two scales were used to measure self-concept: the Academic Self-Concept Scale (ASCS; Reynolds, 1988), and a 6-item scale of course-specific self-concept (Marsh, 1992).

Results from Choi's (2005) study indicated that the degree of specificity affected the impact of self-efficacy and self-concept on end of semester grades (i.e., general self-

efficacy did not predict academic performance). Results showed that academic self-concept, specific self-concept, and specific self-efficacy were significant predictors of academic performance. These results provide support for the importance of using domain specific measures when exploring their role in academic settings. The results also provide support for the impact of an individual's academic self-concept on actual academic achievement.

Gerardi (2005) conducted a longitudinal study on academic adjustment, to assess whether standardized assessments or academic self-concept predicted cumulative GPA's at the end of eight semesters. Participants included 307 first-year college students enrolled at a technical arts college. During the first week of school, participants filled out the City University of New York (CUNY) assessment, which targets math, reading and writing abilities, as well as the Brookover Self-Concept of Ability scale (BSCA; Brookover, Thomas, & Patterson, 1964), which is designed to measure academic self-concept. Gerardi (2005) then assessed the impact of the CUNY assessment and the BSCA on the participants' eight semester cumulative GPA's.

Results indicated that academic self-concept was a better predictor of cumulative GPA's than the CUNY standardized assessment. Results from Gerardi's (2005) study provide support for the role of academic self-concept in academic adjustment to college, while also showing that it is not always cognitive ability that is the strongest predictor of academic performance.

Boulter (2002) demonstrated the importance of various domains of self-concept in college freshman academic adjustment, by administering a multifaceted self-concept measure to 265 first-year college students. Scores on the self-concept measure were then

compared to the participants' academic adjustment, measured by GPA, at the end of the first semester. Participants enrolled in a college orientation class were given the Self-Perception Profile for College Students (SPPCS; Neemann & Harter, 1986), a measure that assesses 12 domains of self-concept (e.g., creativity, social acceptance, academic ability), and a demographic questionnaire. Boulter (2002) hypothesized that students' intellectual, or academic self-concept, would be a significant predictor of academic adjustment, along with perceptions of social acceptance, and social support.

Results indicated that the student's academic self-concept was the largest predictor of academic adjustment. Other significant predictors included social support self-concept, and creative self-concept. Results from the Boulter (2002) study not only provide support for the role of academic self-concept in academic adjustment, but also lend support for the role of multiple self-concept factors in college adjustment (e.g., the importance of social self-concept)

Martin, Swartz-Kulstad, and Madison (1999) examined the effects of various psychosocial factors on the college adjustment of 60 first-year college students. College adjustment was measured by the Student Adaption to College Questionnaire (SACQ; Baker & Siryk, 1984), which targets academic, social, person-emotional, and institutional adjustment. A broad demographic questionnaire was used to assess various factors and their effects on college adjustment. This demographic questionnaire included questions related to belief in academic ability (academic self-concept), perceived social support, peer support, faculty support, as well as attitudes towards social life. For example, to assess belief in academic ability, participants were asked to rate how well they were doing in their classes, the amount of effort they were giving to their course work, amount

of time spent studying, graduation plans, and whether they believed they possessed the abilities necessary for college level academics.

Results indicated that belief in academic ability, attitudes towards the university, and perceived faculty support accounted for a significant amount of the variance in adjustment to college. Martin et al.'s (1999) results not only support the role of academic self-concept in academic adjustment, but also college adjustment as a whole (i.e., in social, personal, and institutional adjustment).

Conclusion. The literature regarding the relationship between academic self-concept and adjustment to the first-year college environment provides ample support for the role of academic self-concept in academic adjustment. The effect of academic self-efficacy on academic adjustment has been shown in both the short term as well as longitudinally (Choi, 2005; Gerardi, 2005). In addition, the importance of academic self-efficacy has been shown for both minority and non-minority students (Hurtado et al., 2007). There are even some studies that have found academic self-concept to be a better predictor of academic adjustment, when compared to cognitive abilities (Gerardi, 2005). Lastly, a study by Martin et al. (1999) provides some evidence for the role of academic self-concept in college adjustment as a whole: academic, social, personal, and institutional attachment aspects of adjustment.

Intelligence (IQ) and Adjustment

Kornilova, Kornilov, and Chumakova (2009) assessed the impact of subjective evaluations of intelligence, goal orientation/implicit theories of intelligence, psychometric intelligence (IQ), and academic self-concept, on the academic adjustment of 300 first-year undergraduate students at a Russian University. Subjective intelligence

was measured by a task created by the authors, the group estimation of intelligence task. In this task participants were asked to rank themselves against their peers, in regards to intelligence. The Implicit Inventories (Dweck, 1999) was used as a measure of goal orientation, academic self-concept, and to measures one's implicit theories of intelligence (whether one views IQ as fixed or malleable).

Psychometric intelligence was measured by the IST-70 (Amthauer, 1973), a popular Russian measure of IQ. The IST-70 measures general, verbal, math and spatial IQ. Academic self-concept was further measured through agreement or disagreement with seven self-report questions (e.g., You often have to force yourself to start doing another academic task). Finally, academic adjustment was measured by the cumulative GPA of the participant's first three semesters.

Results indicated a significant relationship between general IQ, verbal IQ, mathematical IQ and academic adjustment (Kornilova, Kornilov, & Chumakova, 2009). Results also indicated that academic self-concept and subjective evaluations of intelligence were significantly related to academic adjustment. The combination of IQ and academic self-concept accounted for 75% of the variation in academic adjustment. Results from that study showcase the importance of IQ, including general IQ, verbal IQ, as well as math IQ in academic adjustment to the college environment. In addition, these results provide evidence that the combination between academic ability and belief in one's academic ability can have a significantly large impact on one's academic achievement.

Schmitt et al. (2009) engaged in a comprehensive longitudinal study that assessed the role of various cognitive and non-cognitive predictors on 12 aspects of college

adjustment. The 12 aspects of college adjustment included knowledge and mastery of general principles, continuous learning and intellectual interest and curiosity, artistic and cultural appreciation, appreciation for diversity, leadership, interpersonal skills, social responsibility and citizenship, physical and psychological health, career orientation, adaptability and life skills, perseverance, and ethics and integrity.

Participants included 2771 undergraduate students from 10 U.S. colleges. They completed the predictor measures during the first semester of freshman year, and then filled out various outcome measures during the last semester of senior year. Cognitive predictor measures included high school GPA and SAT/ACT scores (as a measure of IQ). Non-cognitive predictor measures included a 112 multiple-choice question biodata questionnaire that measured the participant's background characteristics, and a Situation Judgment Test (SJT; Drzakowski et al., 2004). In the SJT participants are presented with typical college scenarios and are given a few behavioral response choices to choose from. Participants then indicate which behavior they are most likely to engage in and which behavior they are least likely to engage in. Outcome measures included average number of class absentees, cumulative college GPA, a self-report questionnaire asking how well participants felt they performed on the 12 aspects of college adjustment, and participant graduation statuses.

Results from Schmitt et al's (2009) study indicated that IQ was a significant predictor of cumulative academic adjustment over four years. Interestingly, the non-cognitive predictors, the SJT test and the biodata questionnaire, best predicted a majority of the other 12 aspects of college adjustment (e.g., adaptability, artistic and multicultural appreciation, leadership, and responsibility), as well as class absenteeism. However, IQ

still significantly predicted graduation status, absenteeism, and various domains of college adjustment (e.g., adaptability, health, ethics, knowledge, responsibility and perseverance), although to a lesser degree than the non-cognitive variables. These results highlight the impact of IQ not only on academic adjustment to the first year of college, but also to the cumulative GPA's of the participants after four years. Results also showed that although IQ is a strong predictor of other domains of college adjustment, non-cognitive factors tend to predict these domains to a more significant degree. All in all, these results support the role of IQ in various domains of college adjustment, but mostly in academic adjustment.

Rhode and Thompson (2007) examined the role of mental abilities in predicting the academic achievement of 71 freshman undergraduate students. Participants completed measures that targeted working memory, processing speed, spatial ability, and general cognitive ability (IQ). To measure working memory, the Operation Span Task (OST; Conway, Conwan, Bunting, Therriault, & Minkoff, 2002) was used, which contains math problems followed by unrelated words. Participants decided whether the math problems are correct, and at the end of the problem set recall the unrelated words. Processing speed was measured through four timed tasks. For example, The Finding A's Task (Ekstrom, French, Harman, & Dermen, 1976) contained a 41-word set, and participants were given 60 seconds to circle as many words that contained the letter A as possible.

Spatial ability was measured by three tasks that required participants to mentally manipulate and rotate different objects (Rhode & Thompson, 2007). DeFries, Plomin, Vandenberg, and Kuse's (1981) Spatial Relations Task, Card Rotation Task, and Paper Form Board Task were used to target spatial ability. In the Paper Form Board Task

participants are presented with a whole picture and the same picture in pieces. The participants must then mentally figure out how to piece together the picture again. IQ was measured by Raven's Advanced Progressive Matrices Set II (Raven, Raven, & Court, 1998a) and The Mill Hill Vocabulary Scale Form A and B (Raven, Raven, & Court, 1998b). Finally, academic achievement was measured by the Wide Range Achievement Test III (WRAT III; Wilkinson, 1993), as well as the participants' cumulative GPA and SAT scores.

Results indicated that IQ, or general intelligence, was a better predictor of academic achievement than were specific cognitive abilities. These results support the impact of IQ on first-year college students' academic achievement, while also showing that IQ, when measured as a whole, is a better predictor of academic achievement than a single aspects of IQ (e.g., working memory).

Chamorro-Premuzica and Furnham (2006) assessed the role of IQ and self-assessed intelligence on the academic adjustment of 184 British undergraduate students over a 2-year period. Participants first were asked to give their self-assessed intelligence. A day later the participants took a psychometric measure of IQ, and were then asked to give their self-assessed intelligence again. Self-assessed intelligence was attained by providing the participants with a chart of the normal distribution of intelligence, along with a key (e.g., 55 and below indicate mild retardation), and then asking the participants to estimate their intelligence on the chart. IQ was measured with the Wonderlic Personnel Test (Wonderlic, 1992). Academic adjustment was based on three measures of academic performance: seminar performance (seminar leaders rated each participant

weekly on attendance, subject matter, motivation, written expression, participation and oral expression), 12 essay grades, and 8 exam grades.

Results indicated that psychometric IQ correlated higher with exam performance, essay performance, and overall seminar performance, when compared to both tests of subjective assessments of intelligence. In addition, IQ accounted for 15% of the variance in exam performance (which rose 3% with the addition of self-assessed intelligence), 10% of the variance in seminar performance (which rose 9% with the addition of self-assessed intelligence) and 9% of the variance in essay performance (which rose 2% with the addition of self-assessed intelligence). Results from this study indicate a strong relationship between IQ and actual performance (essay and test grades) as well as with teacher ratings of performance. The results also show that psychometric tests of IQ are stronger predictors of academic achievement when compared to self-report measures of IQ.

Farsides and Woodfield (2003) measured the impact of personality, IQ, and motivation on 432 University of Sussex undergraduate students who had successfully adjusted to college, as evidenced by the completion of their undergraduate degree. Participants filled out the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1989), and the AH5 Group Test of High Intelligence (Heim, 1968), which measures both spatial and verbal intelligence. Various outcome measures were attained from school records, including absences, tutorial report grades (to measure motivation), as well as the formal assessments given at the end of the completion of each university year (an assessment specific to the University of Sussex).

Results indicated that verbal IQ was a significant predictor of academic standing at graduation, and also was significantly correlated with a majority of the formal assessments given at the end of each academic year. In addition, when IQ and motivation were entered into a hierarchical regression formula, the variables predicted 11% of the variance in final academic standing. When personality variables were entered into that equation, 16% of the variance was accounted for. These results support the impact of IQ on academic adjustment in college, but also highlight an important point, that IQ alone cannot account for one's entire success in college. Other important factors like motivation and personality also play a role.

Busato, Prins, Elshout and Hamaker (2000) measured the effect of learning style, personality, IQ, and achievement motivation on the longitudinal academic success of 409 first-year students at the University of Amsterdam. Participants were given various measures to fill out during freshman "testweek" which is held every year at the university. Measures included the ILS, a learning styles inventory (Vermunt, 1994), the 5PFT measure of personality (Elshout & Akkerman, 1975), the Record Motivation Test (Hermans, 1976) and a series of ability tests developed from Guilford's (1967) structural model of IQ. The IQ tests included vocabulary, verbal analogies, number series, number speed, and embedded figures. Finally, academic success was measured by amount of study points accumulated after one, two, and three years at the university (attained from university records). Each study point equals 40 hours of work; for example to attain a Ph.D. a student must accumulate 168 study points.

Results from that study provided support for IQ's relationship to academic success, as it was the strongest predictor of the participants' study points at each of the

three years. Out of the other proposed variables, only academic motivation and conscientiousness were significantly related to academic success. Results from the Busato et al. (2000) study add to the literature supporting the role of IQ in academic achievement and academic adjustment to the college setting, a claim that has been made since the 1950's in the first studies on college attrition (for a review see Pentages & Creedon, 1978).

Conclusion. As shown, research examining the role of IQ in adjustment to college primarily focuses on the academic adjustment of the students. These studies have shown that IQ accounts for a large percentage of the variance in first-year college academic achievement as well as cumulative achievement after four years of study (Busato et al., 2000; Farsides & Woodfield, 2003). However, Schmitt et al. (2009) also have shown that IQ affects other aspects of college adjustment including perseverance, adaptability, physical and psychological health, ethics, integrity, intellectual interest, and social responsibility.

In addition, the importance of using psychometric tests of IQ has been demonstrated, as subjective tests of IQ failed to show incremental validity in predicting academic achievement (Chamorro-Premuzcia et al., 2006). Kornilova et al.'s (2009) study also showcased the profound effects IQ can have on academic achievement when academic self-concept is taken into consideration, with 75% of the variance in academic achievement being accounted for by the two variables. However, results from Farsides and Woodfield (2003) help make clear that other variables besides IQ also have an effect on academic success in college.

Emotional Intelligence (EI) and Adjustment

Barchard (2003) assessed the predictive ability of EI on the academic achievement of 150 undergraduate students. Participants included 94 female and 56 male students, who were primarily in their third or fourth year of college. The purpose of the study was to determine whether EI had an impact on academic standing, and whether EI showed incremental predictive validity over personality and cognitive variables.

Measures were completed over a two-month period. Paper and pencil measures were sent home in packets, and participants performed the cognitive measures in a laboratory setting. To measure cognitive ability, participants took part in 12 timed cognitive activities, which were either created by the author, or were modeled on tasks created by Thurstone (1938) or Ekstrom, French, and Harman (1976). These tasks were designed to measure four aspects of cognitive ability: verbal ability, verbal closure (recognizing words despite induced stress), inductive reasoning, and visualization. A measure of personality was attained through a 10-item public domain measure of personality (Goldberg, 1999), which was modeled after the NEO-PI. Due to the array of measures for EI, each with different theoretical bases, the study included 31 measures of EI. For example, Barchard implemented the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 1999), the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990), as well as the TEIS, a self-report measure of EI (Tett et al., 1997).

Results from Barchard's (2003) study indicated that EI, specifically the measures of the MSCEIT and the LEAS, were significantly correlated with academic achievement. Additionally, these measures also explained 8% of the variance in academic achievement.

However, after taking cognitive ability and personality variables into account, EI did not add to the incremental validity of academic achievement. In sum, these results provide mixed support for the importance of EI in the academic achievement of undergraduate students. The results show that EI plays a smaller role in academic achievement when compared to personality and cognitive ability, but that nonetheless, some measures of EI do have an impact on academic achievement. Results from Barchard's (2003) study highlight the importance of selecting valid measures of EI, but also indicate the study's shortcomings. Barchard (2003) indicates that future studies should distinguish between the different years of academic standing (e.g., freshman vs. senior) to assess if EI may play a larger role in specific academic settings.

Parker, Summerfeldt, Hogan and Majeski (2004) used a first-year college student sample to examine the role of EI in the ability to successfully transition to college, as evidenced by first-year GPA's. During the first month of college, 372 first-year college students filled out the short form of the Bar-On EQ-I (Bar-On, 1997), which measures various aspects of EI, including interpersonal ability, intrapersonal ability, stress management, and adaptability. Scores on the Bar-On EQ-I were then compared to the students' academic records at the end of the first-year of college. In order to look at the differences in EI between students who were successful and unsuccessful, participants with cumulative GPA's of 79% and above were designated as successful students, and those with grades of 60% and below were designated as unsuccessful students.

Results indicated that when looking at the participants as a whole, there was a low correlation between the total EI score and first-year GPA. However, significant results were attained when the authors divided the participants into successful and unsuccessful

students. When comparing the two groups, the results showed that successful students had higher overall EI scores, and scored higher on interpersonal, adaptability and stress management aspects of EI when compared to unsuccessful students.

Results from Parker et al.'s (2004) study lend some support the role of EI in the academic adjustment of first-year college students, particularly the EI aspects of stress management, adaptability and intrapersonal ability. These results indicate that students who were able to identify and distinguish among emotions, use emotions to guide behavior, manage their emotions in decision making (e.g., using healthy coping strategies to adapt to college), and control their emotions in order to stay calm in stressful situations, had a higher academic standing than those who lacked these characteristics.

Kerr, Johnson, Gans, and Krumrine (2004) studied the impact of perceived stress, psychological symptoms and alexithymia on adjustment to college. Alexithymia was used to assess the impact of emotional deficits on adjustment to college. Alexithymia is often viewed as the opposite of EI, that is, those with alexithymia have difficulties identifying emotions, describing emotions, and using emotions in thoughts. The main purpose of that study was to examine whether alexithymia could predict adjustment to college, after accounting for perceived stress and psychological symptoms. In addition, Kerr et al. (2004) wanted to assess the impact of alexithymia, perceived stress and psychological symptoms on individual aspects of college adjustment (e.g., academic and emotional adjustment).

Kerr et al. (2004) sampled 26 incoming freshman who were asked to fill out various measures at three different times during their first-year of college: a precollege assessment during the summer before freshman year, a fall semester assessment, and a

spring semester assessment. At each assessment the participants filled out paper and pencil measures, including The Perceived Stress Scale (PSS; Cohen et al., 1983), The Symptom Checklist-90-R (SCL-90-R; Derogatis & Lazarus, 1994), The Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994), and The Student Adaptation to College Questionnaire (SACQ, Baker & Siryk, 1984, 1999). Additionally, although the SACQ has an academic adjustment dimension, in order to have an objective measure of academic adjustment GPA was also used (fall, spring, and first-year cumulative).

Results indicated that alexithymia impacted overall college adjustment, predominantly during the fall semester, even after the effects of perceived stress and psychological symptoms were taken into consideration (Kerr et al., 2004). Particularly, it was the students who had the greatest difficulty identifying their emotions who had a harder time adjusting to the college environment. Results also showed that alexithymia had the largest effect on personal-emotional adjustment, and was not a significant predictor of academic adjustment (both the self-report scale of the SACQ and GPA).

These results highlight the importance of identifying and understanding emotions in adjusting successfully to college. Students who are unable to understand what they are feeling and cannot express themselves may feel confused and overwhelmed in the new college environment. This stressful experience, full of new relationships and new academic expectations, can elicit intense emotions, ones previously not experienced, like isolation and insecurity. Students who cannot identify these emotions and do not know how to handle them may be unprepared for the college environment. Additionally, Kerr et al. (2004) showed that emotional understanding and management may impact the

social, emotional, and personal aspects of college adjustment, more than academic adjustment. Students may be tapping other skills when tackling academics like stress management, IQ, and academic-self concept.

Parker, Hogan, Eastabrook, Oke, and Wood (2006) studied the role of EI in student retention, by tracking the attrition of a group of first-year undergraduate students during their first two years of college. Through earlier research, the authors found that students who succeeded academically tended to have higher EI scores. Therefore, the study was designed to add to the literature on the effects of EI on an aspect of college adjustment often neglected, college attrition. In this particular study, 1270 first-year college students completed the Emotional Quotient Inventory (EQ-i:Short; Bar-On, 2002) and then gave researchers consent to track their academic progress through the registrar's office. Participants who dropped out of college were contacted by one of the researchers and asked the reasoning behind their decision to leave.

Two groups of students were compared at the end of the study, those who were still currently enrolled in college, and those who dropped out. Students who had successfully persisted in college tended to have higher EI scores. Specially, these students scored significantly higher in interpersonal ability, intrapersonal ability, stress management, and adaptability. Results from Parker et al.'s (2006) study suggest that individuals who have successfully acclimated to the college environment, as indicated by low attrition rates, have stronger EI abilities. These individuals are able to navigate the social stressors of college adjustment, as shown by the significantly higher intrapersonal and interpersonal EI scores. Additionally, they adapt well to the academic and emotional

stressors of college adjustment, as shown by the significantly higher stress management scores.

Di Fabio and Palazzeschi (2009) examined the role of IQ, personality, and EI in predicting scholastic success of junior and senior high school students. The authors hypothesized that IQ would correlate positively with scholastic success, and that personality and EI would add to the variance not explained by IQ. Participants filled out various paper and pencil measures, including Raven's Advanced Progressive Matrices (Raven, 1962), the Eysenck Personality Questionnaire Revised Short Form (EPQ-RS, Eysenck, Eysenck, & Barrett, 1985), the MSCEIT (Mayer, Salovey, & Caruso, 2002), the Bar-On Emotional Quotient Inventory: Short (EQ-i:S; Bar-On, 2002). Participant GPA's were used as a measure of academic achievement.

Results from Di Fabio and Palazzeschi's (2009) study supported the authors' hypotheses: intelligence accounted for 10% of the variance in academic achievement, personality accounted for an additional 5%, and the self-and ability-based measures of EI combined accounted for an additional 17% of the variance in academic achievement. These results stand in contrast to the results attained by Barchard (2003), who found that EI had no incremental effect over personality and cognitive variables. Instead, these results suggest that EI does impact academic achievement, albeit in a different population.

Conclusion. Available research on the importance of EI in college adjustment seems to be mixed. Parker et al. (2004) found that students who were successful at adjusting to academic demands tended to have higher EI abilities. In a later study Parker et al. (2006) also found support for EI in college attrition, in that students who chose to

continue their education tended to have higher EI abilities. Finally, Kerr et al.'s (2004) study on alexithymia highlighted the impact of emotional deficits on college adjustment, finding that participants who had trouble in emotional processing tended to have a harder time adjusting to the academic, social, personal-emotional and institutional aspects of college adjustment. However, these results stand in contrast to the study completed by Barchard (2003), which found little support for EI in the academic achievement of undergraduates. In Barchard's study, EI did not show incremental predictive validity over cognitive ability or personality variables. As a result, the mixed findings showcase the importance of future study in this area, in order to obtain a clearer picture of the impact of EI on college adjustment.

Rationale for the Proposed Study

Adjustment to the college environment is a difficult task, with multiple skills, traits, and abilities being utilized. The current study focused on three variables hypothesized to be associated with college adjustment: intelligence (IQ), academic self-concept, and emotional intelligence (EI).

IQ is an established predictor of college adjustment, mainly on academic adjustment. Historically, IQ has been viewed as the most important trait an individual can have, and Galton posited that it was the largest predictor of life success (Simonton, 2003). Studies have shown that IQ accounts for a significant amount of the variance of first-year college academic achievement as well as cumulative achievement after four years of study (Busato et al., 2000; Farsides & Woodfield, 2003). However, few studies have assessed the role of IQ in other college adjustment domains, like social or emotional adjustment. The present study investigated the impact of IQ on not only on first-year

academic adjustment (i.e., GPA), but also on emotional, social, and institutional adjustment. Because IQ has been found to be a strong predictor of many life domains, including social status, years of education, income, job performance, as well as criminal behavior, it was expected to also be a significant predictor of a variety of first-year college adjustment domains as well (Neisser et al., 1996).

Academic self-concept is a second established predictor of first-year college adjustment. Bandura (1986) posited that self-efficacy beliefs, or self-concept, affects behavior, effort, resiliency, motivation, levels of stress and anxiety, as well as anticipated outcomes. In sum, self-concept impacts the goals one makes and the methods used to achieve them. According to Bandura, belief in ability is as important as one's actual ability. The literature regarding the relationship between academic self-concept and adjustment to the first-year college environment provides ample support for the importance of academic self-concept. The effect of academic self-efficacy on academic adjustment has been shown in both the short term as well as longitudinally (Choi, 2005; Gerardi, 2005). Additionally, a study by Martin et al. (1999) provides preliminary evidence for the role of academic self-concept in college adjustment as a whole: academic, social, emotional, and institutional attachment aspects of adjustment.

The present study aimed to add to the literature investigating the utility of academic self-concept in first-year college academic adjustment. However, the present study also addressed one of the research area pitfalls, the lack of research on non-academic aspects of college adjustment, namely social, emotional and institutional adjustment. This aspect of the present study was exploratory, because although Bandura's Social Cognitive Theory indicates that belief in ability affects decision-

making, and results from Martin et al. (1999) provide some evidence for academic self-concept's role in social and emotional adjustment, the construct of academic self-concept is domain specific. It is a construct created to measure an individual's belief in his or her academic abilities, and as a result may or may not significantly impact other areas of college adjustment.

Apart from these academically related variables, academic ability and belief in academic ability, there is still variance in first-year college adjustment that is left unexplained (Farsides & Woodfield, 2003). The variable of emotional intelligence (EI) has begun to receive attention and has been linked to both academic achievement and college attrition (Parker et al., 2004; Parker et al., 2006). According to EI theorists, emotionally intelligent individuals have the ability to monitor their feelings, accurately perceive the emotions of others, and use the information when making a decision. That is, individuals high in EI pay attention to, use, understand, and manage emotions, and these skills serve adaptive functions that potentially benefit themselves and others (Mayer, Salovey, & Caruso, 2004).

One can see how such skills could be beneficial in first-year college adjustment, as college is a high stress environment that elicits a wide range of emotions. The ability to monitor those emotions and use them adaptively could be of importance. However, as a whole, the literature on EI in college adjustment is mixed. Whereas some studies report that EI has an impact on the ability to adjust to college, other studies report little support for the role of EI in adjustment (Barchard, 2003; Parker et al., 2006). Additionally, much of the literature has only assessed the role of EI in predicting GPA or end-of-semester grades. In sum, the literature on EI in college adjustment is mixed, and the focus is quite

narrow in terms of dependent variables. The present study was designed to assess EI's predictive power in college adjustment, including academic, social, emotional and institutional adjustment. Furthermore, the present study aimed to investigate whether EI shows any incremental predictive validity over the constructs of IQ and academic self-concept.

Hypotheses

H₁: There would be a positive relationship between IQ, Academic Self-Concept (ASCS), Emotional Intelligence (EI) and College Adjustment

H₂: There would be a positive relationship between IQ, ASCS, EI and College GPA

H₃: EI would have incremental predictive validity on college adjustment, after accounting for IQ and academic self-concept.

H₄: EI would have incremental predictive validity on college GPA, after accounting for IQ and academic self-concept.

Method

Participants

Participants included 93 first-year college students (61 female, 32 male; M age = 19.68 years, $SD = 1.91$ years). Of the participants, 44% were Caucasian, 18% were African American, 12% were Afro-Caribbean, 2% were Asian, 19% were Latin American, and 5% were Arabic. Additionally, 52% of the participants were born in the United States, and 48% of the participants were born overseas. In terms of living situation, 58% of the participants lived on campus with a roommate or by themselves, and 42% lived off campus with a relative, significant other, or friend. With 93 participants, the main analysis had a power of .88 to detect a medium effect for the regression analyses (Faul, Erdfelder, Lang, & Buchner, 2007). Participants were recruited through introductory psychology courses and through flyers posted at an ethnically diverse private university in Southern Florida. They received extra credit, or course credit, for their participation. See Appendix A for consent form. See Appendix B for flyer.

Measures

Demographic/ Academic Questionnaire. The demographic and academic questionnaire included items related to age, ethnicity, living conditions, family communication, academic standing, self reported GPA, and ACT/SAT scores (see Appendix C).

Emotional Intelligence. The Schutte Emotional Intelligence Scale (SEI; Schutte et al., 1998) is a 33-item self-report measure of EI (see Appendix D). The SEI was chosen as a measure of EI because it is a valid, reliable, and rapid measure of EI that is

conducive to research settings (Schutte et al., 1998). Furthermore, it adheres closely to Mayer and Salovey's theory and corresponding test of EI (MSCEIT), which is one of the most widely used, and accepted tests of EI. Examples items from the SEI include "When I am in a positive mood, solving problems are easy for me" and "I can tell how people are feeling by listening to the tone of their voice." Responses are on a 5-point likert scale from *strongly disagree* (1) to *strongly agree* (5). Higher scores on the SEI indicate a higher emotional intelligence. Internal consistency for the SEI was reported at .90 by the authors. The SEI was unrelated to the Scholastic Aptitude Test (SAT), a common measure of general cognitive ability, or IQ (discriminant validity).

Intelligence. The Mill Hill Vocabulary Scale-Senior Form 2: sets A and B (MHVS-S; Raven, Raven & Court, 1998) is the adult version of the MHVS (see Appendix E). Each of the 34 item lists is formatted so that a vocabulary word is given followed by a 6-item word list. Participants must choose the word that is most closely related to the given vocabulary word. For example, the word *rage* must be matched to one of the following: *crease, invite, rain, love, anger, and hoist*. Higher scores on the MHVS indicate a higher IQ. In the most recent test manual, the authors report test-retest reliability above .90 (Raven, Raven & Court, 1998).

The MHVS has been found to correlate .69 with the SAT's cumulative score, a widely used measure of IQ (Rhode & Thompson, 2007). It is also often used as a measure of IQ (Demaree, Burns, & DeDonno, 2010; Sternberg et al., 2001) and can be converted into deviation IQ scores (Peck, 1970).

Academic Self-Concept. The Academic Self-Concept Scale (ASCS; Reynolds, 1988) is a 40-item self-report measure that assesses students' academic belief in

themselves (see Appendix F). Example items include “Most courses are easy for me” and “I am satisfied with the class assignments that I turn in.” Responses are based on a 4-point Likert-like scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher scores on the ASCS indicate a higher academic self-concept. Internal consistency of the ASCS was reported at an alpha of .92 with test-retest reliability at $r = .88$ (Renyolds, 1988). In a more recent sample, the ASCS was found to have an alpha of .92 (Lopez, Lent, Brown, & Gore, 1997).

College Adjustment. The Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984; Baker & Siryk, 1989) is a 67-item self-report measure that targets four facets of college adjustment: social, academic, personal-emotional, and goal commitment-institutional attachment (see Appendix G). The social adjustment subscale measures the amount of social experiences that occur (e.g., amount of friends made). The academic subscale assesses the ability to meet educational demands (e.g., number of missed assignments). The personal-emotional subscale measures the amount of psychological or somatic distress experienced (e.g., headaches, depression). The goal commitment-educational attachment subscale measures the connection felt towards the university (e.g., do they like the school they go to). Participants rated the extent to which they agree to each statement on a Likert-like scale from 1 (*doesn't apply to me at all*) to 9 (*applies very close to me*). Although the scale can be viewed according to subscales, the instrument also provides a total score by summing the scores of the 67 items, with higher scores indicating better adjustment to college. Baker and Siryk (1986) have reported internal consistencies of the full scale between .91 and .92, academic adjustment between

.82 and .87, social adjustment at .88 and personal emotional adjustment between .82 and .86.

Procedure

Participants were asked to meet in a psychology laboratory, individually, or in small groups of up to 8, to fill out the questionnaires. After participants were seated in the psychology laboratory, they were given an informed consent form, and if they agreed to participate, they signed the consent form. Once consent forms were signed, the experimenter collected them and stored them apart from the other materials. Participants were then given envelopes with ID numbers on them. The envelopes contained the five questionnaires described above in an order that was counterbalanced. Before the participants sealed and returned the materials to the researcher, participants were asked to let the researcher check for missing data. If any questions were left unanswered, the researcher offered the participants the opportunity to fill out the missing data. If a participant did not wish to do so, there was no penalty. Participants returned all testing material to the researcher in the original envelope provided.

Results

Chronbach's alpha reliability analyses were computed on the measures of ASCS, EI, and college adjustment. The ASCS scale consisted of consisted of 40 items ($\alpha = .93$), the EI scale consisted of 33 items ($\alpha = .87$) and the college adjustment scale consisted of 67 items ($\alpha = .93$).

Pearson correlations were computed among college GPA, ASCS, EI, IQ, and adjustment. There was a positive relationship between ASCS and college adjustment, $r = .65$, $p < .01$, and EI and college adjustment, $r = .43$, $p < .01$. There was no significant

relationship found between IQ and college adjustment, $r = .03$, $p = .39$. There was a positive relationship between IQ and college GPA, $r = .25$, $p = .05$. There was no significant relationship found between ASCS and college GPA, $r = .16$, $p = .15$, or EI and college GPA, $r = .17$, $p = .12$. See Table 1 for the complete correlation matrix, means, and standard deviations

Table 1

Summary of Means, Standard Deviations, Correlations and Reliability Coefficients

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
5						
1. GPA ^a	3.12	.42	-			
2. IQ	34.47	7.95	.25*	-		
3. ASCS	115.12	15.98	.16	-.02	-	
4. EI	126.67	14.51	.17	.01	.49**	-
5. ADJ	397.49	15.98	.10	.03	.65**	.43**
-						

Note. GPA=College GPA; IQ=Cognitive Ability; ASCS=Academic Self-Concept; EI=Emotional Intelligence; ADJ = College Adjustment.

$N = 93$.

^a $n = 83$.

* $p < .05$. ** $p < .01$.

A hierarchical regression analysis was computed with college adjustment as the dependent variable. In step 1, IQ and ASCS were entered, adjusted $R^2 = .41$, $p < .001$. In step 2, EI was added, adjusted $R^2 = .42$, $p < .001$. The change in R^2 was not significant, $F(1,89) = 2.83$, $p = .10$. See Table 2 for R^2 , ΔR^2 , and β values.

Table 2

Hierarchical Regression Analysis Predicting Adjustment with IQ, ASCS, and EI in Total Sample

Step and predictor variable	R^2	ΔR^2	β
Step 1	.42	.42	
IQ			.04
ASCS			.65*
Step 2	.44	.02	
EI			.15

Note. $N = 93$

* $p < .0001$.

Nearly half of the sample was born abroad. Considering the effect that might have on college adjustment, the analyses were repeated separately for each of the two groups: those born in the USA and those born abroad. A hierarchical regression analysis was computed for participants born in the US with college adjustment as the dependent variable. In step 1, IQ and ASCS were entered, adjusted $R^2 = .47$, $p < .001$. In step 2, EI was added, adjusted $R^2 = .46$, $p < .001$. The change in R^2 was not significant, $F(1,57) = .03$, $p = .86$. See Table 3 for R^2 , ΔR^2 , and β values. A hierarchical regression analysis was then computed for participants born abroad with college adjustment as the dependent variable. In step 1, IQ and ASCS were entered, adjusted $R^2 = .22$, $p = .01$. In step 2, EI was added, adjusted $R^2 = .34$, $p = .002$. The change in R^2 was significant, $F(1,28) = 6.11$, $p = .02$. See Tables 4 for R^2 , ΔR^2 , and β values.

In order to examine differences in emotional intelligence scores an independent t test analysis was computed on participants born in the US, and participants born overseas. On average, emotional intelligence scores were greater for those born in the

United States ($M = 131.63$, $SD = 13.29$) than for those born overseas ($M = 121.38$, $SD = 14.01$), $t(89.75) = 3.61$, $p < .001$.

Table 3

Hierarchical Regression Analysis Predicting Adjustment with IQ, ASCS, and EI in USA Sample

Step and predictor variable	R^2	ΔR^2	β
Step 1	.47*	.49*	
IQ			.02
ASCS			.70*
Step 2	.49*	.00	
EI			.12

Note. $N = 33$

* $p < .001$.

Table 4

Hierarchical Regression Analysis Predicting Adjustment with IQ, ASCS, and EI in Abroad Sample

Step and predictor variable	R^2	ΔR^2	β
Step 1	.27*	.27*	
IQ			.18
ASCS			.47**
Step 2	.40**	.13*	
EI			.39*

Note. $N = 60$

* $p < .05$. ** $p < .01$.

Hypothesis 4 called for a similar set of regressions with GPA as the dependent variable. However, these regressions were not computed because the only independent variable that correlated with GPA was IQ (see Table 1).

Discussion

The present study examined the relationship between emotional intelligence (EI), academic self-concept (ASCS), cognitive intelligence (IQ), and college adjustment. Results from the present study provided partial support for the first two hypotheses. As expected, college adjustment was positively associated with EI and ASCS, although there was no significant positive correlation with IQ. As expected, college GPA was positively associated with IQ, although there were no significant positive correlations with ASCS or EI. Results from the present study also provided partial support for the third hypothesis. Results indicated for international students, EI was a strong predictor of college adjustment, after accounting for the effects of IQ and ASCS. However, for students born in the US, EI did not predict college adjustment. Hypothesis four was not examined because IQ was the only variable found to correlate with GPA.

Although it was not a goal of this study to investigate cultural issues, the sample was diverse enough to allow some examination of differences. Overall, results suggested that EI is important to successful college adjustment for international students. It appears that when examining college adjustment, which takes into consideration how a student is adjusting to a college from a social, emotional, physical and academic standpoint, being able to understand, control, and utilize emotions in decision-making impacts adjustment for international students. This is an important finding, as there is no current research to date that examines the role of EI on college adjustment in a foreign country. One can

argue that international students are not only trying to adjust to the college environment, but also to a completely new country. The customs, beliefs, language, laws, people, climate, and culture are vastly different than what they experienced in their home country. Thus, this culture shock paired with college adjustment may be a more intensive emotional experience for international students and thus a construct like EI may be a pivotal tool for this population.

The process of acculturation and the extreme stress associated with it has been well documented (Arbona, Olvera, Rodriguez, Hagan, Linares, & Wiesner, 2010; Rudmin, 2009), as has the literature on understanding variables that mediate acculturation stress (MacCann, Fogarty, Zeidner, & Roberts, 2011; Wang, Schwartz, & Zamboanga, 2010; Zamboanga, Schwartz, Jarvis, & Van Tyne, 2009). The finding that EI may be important in acculturation to the US for students seeking a college education suggests that EI is a variable of interest in the acculturation literature. Previous research has shown that EI was able to predict cultural adjustment for adults moving to the US for new job ventures (Gabel, Dolan, & Cerdin, 2005). Additionally, research has indicated that EI impacted adolescents' adjustment to the US and cigarette use (Trinidad, Unger, Chou, & Johnson, 2005).

Future research would be warranted with regard to role of EI in adjustment to college in the US with a larger, more diverse sample. Perhaps there would be differences in the importance of EI across cultures. A limitation to this study is that it is unclear exactly when the international participants moved to the US, thus it cannot be determined if participants had already acculturated to the US, or if they were in a specific phase of acculturation. The demographic data gathered provided only general time periods and not

an exact date as to when they first moved to the US. This uncertainty opens up a lot of potential questions, such as whether EI was a significant predictor of adjustment because participants were in the process of acculturation. Or perhaps EI mediated the relationship between successful acculturation and successful college adjustment. Future studies may ask participants indicate precisely when they moved to the US to determine the relative effects of EI. It would also be valuable to use an acculturation scale, to see the direct impact EI has on acculturation, and whether EI is a better predictor of acculturation or college adjustment.

In regards to differences among EI scores between international students and American students, results indicated that participants born in the US had on average, higher EI scores than participants born overseas. This finding suggests that even with a lower EI, when compared to American students, the construct of EI is a more important predictor of college adjustment for international students. It could be argued that if this EI ability were further strengthened in international students, their college adjustment would be impacted positively. A primary implication of the finding that EI is that basic emotion regulation and self-leadership strategies could be included in a course for international students, to help them better adjust to the US, and the college environment. It is evident that EI is an important variable to college adjustment in international students and thus building this skill could be of great use to this population.

The finding that EI was not a predictor of college adjustment for participants born in the US is in line with some other research results (Barchard, 2003; Bastian et al. 2005; Brackett & Mayer 2003; Tariq, Majoka, & Hussain, 2011). However, results from this study stand in contrast to results from Parker et al. (2004) and Grehan, Flanagan, and

Malgady (2001) which found that students who were successful at adjusting to academic demands tended to have higher EI than those who were not successful. A potential limitation in the current study is that the measure of EI was a self-report measure. In the EI research community there is still controversy over whether EI should be measured through ability-based measures or self-report measures (for overview see Mayer, Roberts, & Barsade, 2008). Thus, future research may also utilize an ability-based measure of EI, such as the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 1999) to determine whether it would better predict college adjustment. All in all, it is evident that the relationship between EI and college adjustment is still not fully understood. EI is a fairly new construct, and further research is needed to determine the scope of its ability to predict college adjustment.

The finding that IQ was the only variable that correlated with GPA suggests when looking at GPA, a specific aspect of college adjustment, IQ may be of the most importance. Indeed, the relationship between IQ and GPA has been well documented in previous research (Busato et al., 2000; Chamorro-Premuzcia et al., 2006; Kornilova et al., 2009). However, it is surprising that ASCS had no relation to GPA, given the domain specific nature of ASCS, and its history of being a strong predictor of academic achievement (Bong & Clark, 1999; Choi, 2005; Hurtado et al., 2007). Participants gave a self-report of their college GPA, which has the potential to be biased and thus could have impacted the relationship between ASCS and GPA. Additionally, although significant, the correlation between IQ and GPA was weak to moderate, and was expected to be higher given past research. This may be due to the domain specificity of the IQ measure, meaning that it was a measure of verbal IQ. Thus, using a measure of IQ that is more

comprehensive (i.e., assessing verbal and nonverbal) may have produced different results. It also should be added that there were no differences between IQ scores for participants born in the US or abroad.

Finally, the fact that ASCS was the strongest predictor of college adjustment, and the variable that was strongest correlated with college adjustment is of importance. It suggests that above and beyond ability (IQ), one's belief in oneself is important to the ability to succeed in college. This finding is in line with results from Gerardi's (2005) study, which found ASCS to be a better predictor of college adjustment than cognitive intelligence measures. This finding is also in line with the research of Bandura (1994), and his concept of self-efficacy. An implication of this finding is that it may be useful to include measures of ASCS and college adjustment with incoming students, in order to identify students that are at risk (i.e., low in ASCS, low adjustment) and may benefit from counseling services.

There is still much to be understood about college adjustment and particularly its relationship to the construct of EI. Results from the current study provide support for the role of EI in college adjustment for international students. Furthermore, results from this study open up a new area of research on EI and its relationship with acculturation during a pivotal life adjustment phase, college.

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Appendix A
Consent Form

**Barry University
Informed Consent Form**

Your participation in a research project is requested. The title of the study is *Factors Influencing Adjustment to College*. The research is being conducted by Caryn Musiala, a graduate student in the Psychology Department at Barry University, and is seeking information that will be useful in the field of educational psychology. The aims of the research are to identify factors that contribute to collegiate success. In accordance with these aims, the following procedures will be used: you will be asked to fill out five questionnaires. We anticipate the number of participants to be 100.

If you decide to participate in this research, you will be asked to do the following: answer items on five questionnaires. The first questionnaire will ask about your ethnicity, previous academic achievement, living conditions, and family communication. The second questionnaire will ask about your views on emotions, and your emotional abilities. The third questionnaire will assess your vocabulary skills. The fourth questionnaire will ask about your views of your academic abilities and the fifth questionnaire will ask about your views on your college experience thus far. This will take approximately 40-50 minutes to complete. After you have finished the experimenter will skim your pages and to see if you have accidentally skipped any items. If there are items left blank, she will offer you the opportunity to fill them in. If you choose not to do so, there will be no penalty and you will still receive class credits. After this you will place your materials in the envelope provided, seal it, and return it to the researcher.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects on your class credit or extra credit. There are no known risks. Although there are no direct benefits to you, your participation in this study may help our understanding of factors that affect adjustment to college. This increased understanding may aid in decreasing the number of college dropouts and in understanding the predictive characteristics of collegiate success. As a research participant, information you provide will be held in confidence to the extent permitted by law. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the Psychology Department. Your signed consent form will be kept separate from the data. All data will be destroyed after 2 years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Caryn Musiala through Andrea Bello in the Department of Psychology, at (305) 899-3270, or by email at caryn.musiala@mymail.barry.edu, or my supervisor Dr. Szuchman, at (305) 899-3278, or by email at lszuchman@mail.barry.edu. You may also contact the Institutional Review Board point of contact, Barbara Cook, at (305)899-3020. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.

Voluntary Consent

I acknowledge that I have been informed of the nature and purposes of this experiment by Caryn Musiala and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

Signature of Participant

Date

Researcher

Date

Witness

Date

(Witness signature is required only if research involves pregnant women, children, other vulnerable populations, or if more than minimal risk is present.)

Appendix B
Recruitment Flyer

Factors Influencing Adjustment to College

Requirements: You must be at least 18 years of age **AND** in your first year of college.

Specifics: You will be asked to complete a demographic questionnaire, a vocabulary questionnaire, as well as three questionnaires covering your views on emotions, your academic abilities and your college experience thus far.

Extra credit: 2 points

Location: Library Basement Room 131. Tuesday's from 1:00-3:00 pm and Thursday's from 11:00-4:00 pm

Duration: Approximately 40-50 minutes.



Researchers: Caryn Musiala (Graduate Student)- caryn.musiala@mymail.barry.edu
Dr. Lenore Szuchman (supervisor): lszuchman@mail.barry.edu
IRB contact: Barbara Cook bcook@mail.barry.edu

Appendix C

Diversity/ Environment Questionnaire

Diversity/ Environment Questionnaire

Please complete the following questions. It is important for you to be completely honest. All questionnaires will be kept confidential.

1. Gender (please circle one)
Male
Female
2. Age: _____
3. High School GPA: _____
4. SAT/ACT Score: _____
5. College GPA: _____
6. Approximately how many college credits have you completed?

For question 7, please consider the following definition: **Ethnic Group:** *A group whose members identify with each other, through a common heritage that is real or presumed. Ethnic identity is further marked by recognition of common cultural, linguistic, religious, or behavioral traits as indicators of contrast to other groups (e.g., Cuban American, Hispanic, European American)*

7. What is your predominant ethnicity? _____
8. Place of birth (country) _____
9. How long have you lived in the United States? (please choose one)
 - a. Less than a year
 - b. 1-3 years
 - c. 3-5 years
 - d. 5-10 years
 - e. 10-15 years
 - f. Entire life
10. What language is primarily spoken in your parent's home?

11. What is your second language (if any)? _____

12. Your education (high school)

Type

Public o

Private o

Location

U.S. o

International o

Country: _____

13. Your current living situation (please choose either on or off campus, then indicate whom you primarily live with)

On campus o

Off campus o

Both Parents o

One Parent o

Grandparents, relatives, siblings o

Friends/Roommate o

Self o

Romantic Partner o

14. About how many days per month do you either see, phone, text, or email a family member? _____

Appendix D

Emotional Intelligence Scale

Instructions: Indicate the extent to which each item applies to you using the following scale:

- 1 = strongly disagree
 2 = disagree
 3 = neither disagree nor agree
 4 = agree
 5 = strongly agree

- _____ 1. I know when to speak about my personal problems to others.
 _____ 2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
 _____ 3. I expect that I will do well on most things I try.
 _____ 4. Other people find it easy to confide in me.
 _____ 5. I find it hard to understand the nonverbal messages of other people.
 _____ 6. Some of the major events of my life have led me to re-evaluate what is important and not important.
 _____ 7. When my mood changes, I see new possibilities.
 _____ 8. Emotions are some of the things that make my life worth living.
 _____ 9. I am aware of my emotions as I experience them.
 _____ 10. I expect good things to happen.
 _____ 11. I like to share my emotions with others.
 _____ 12. When I experience a positive emotion, I know how to make it last.
 _____ 13. I arrange events others enjoy.
 _____ 14. I seek out activities that make me happy.
 _____ 15. I am aware of the nonverbal messages I send to others.
 _____ 16. I present myself in a way that makes a good impression on others.
 _____ 17. When I am in a positive mood, solving problems is easy for me.
 _____ 18. By looking at their facial expressions, I recognize the emotions people are experiencing.
 _____ 19. I know why my emotions change.
 _____ 20. When I am in a positive mood, I am able to come up with new ideas.
 _____ 21. I have control over my emotions.
 _____ 22. I easily recognize my emotions as I experience them.
 _____ 23. I motivate myself by imagining a good outcome to tasks I take on.
 _____ 24. I compliment others when they have done something well.
 _____ 25. I am aware of the nonverbal messages other people send.
 _____ 26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
 _____ 27. When I feel a change in emotions, I tend to come up with new ideas.
 _____ 28. When I am faced with a challenge, I give up because I believe I will fail.
 _____ 29. I know what other people are feeling just by looking at them.
 _____ 30. I help other people feel better when they are down.
 _____ 31. I use good moods to help myself keep trying in the face of obstacles.
 _____ 32. I can tell how people are feeling by listening to the tone of their voice.
 _____ 33. It is difficult for me to understand why people feel the way they do.

Appendix E

Mill Hill Vocabulary Scale (Set A & B)

SET A

Begin

Darken the circle next to the word that means the same as the word in heavy type above the group.

Example:

1. Rage

- a crease d love
 b invite e anger
 c rain f hoist

2. Squabble

- a saw d lift
 b bubble e photo
 c mold f quarrel

3. Connect

- a join d field
 b lace e bean
 c flint f accident

4. Provide

- a harmonize d divide
 b hurt e commit
 c annoy f supply

5. Brag

- a choose d boast
 b hope e stone
 c lag f jerk

6. Shriveled

- a linger d heed
 b volunteer e wither
 c shiver f haunt

7. Mingle

- a interfere d press
 b mix e declare
 c gamble f remark

8. Stance

- a partition d fixed
 b glance e slope
 c position f grief

9. Verify

- a dedicate d confirm
 b chastise e change
 c correct f purify

10. Formidable

- a unexpired d ravishing
 b feasible e orderly
 c tremendous f remembrance

11. Thrive

- a think d try
 b thrash e reap
 c blame f flourish

12. Docile

- a meek d passionate
 b dominant e homely
 c careless f dumb

13. Virile

- a demanding d familiar
 b concise e manly
 c vulgar f barbarous

14. Surmount

- a mountain d overcome
 b concede e descend
 c appease f snub

15. Sultry

- a instinctive d solid
 b sulky e severe
 c trivial f muggy

16. Criterion

- a superior d critic
 b certitude e standard
 c clarion f crisis

17. Latent

- a delayed d discharged
 b potential e overburdened
 c ingenious f hostile

18. Dwindle

- a swindle d pander
 b linger e wheeze
 c diminish f compare

19. Construe

- a prophesy d interpret
 b contradict e collect
 c scatter f anneal

20. Efface

- a delete d rotate
 b disgust e mark
 c adjoin f ascend

21. Trumpery

- a etiquette d heraldry
 b worthless e highest
 c amusement f final

22. Perpetrate

- a appropriate d control
 b propitiate e deface
 c commit f pierce

23. Glower

- a scowl d shine
 b disguise e gloat
 c serate f extinguish

24. Sensual

- a controversial d careful
 b necessary e crucial
 c rational f carnal

25. Obdurate

- a formidable d permanent
 b hesitant e stubborn
 c exorbitant f obsolete

26. Palliate

- a regenerate d quality
 b alleviate e imitate
 c stimulate f erase

27. Adulate

- a increase d waver
 b admire e prosper
 c flatter f inflate

28. Felicitous

- a sincere d faithful
 b valedictory e altruistic
 c voracious f opportune

29. Ambit

- a talisman d confines
 b armature e arc
 c camber f ideal

30. Recondite

- a brilliant d effervescent
 b vindictive e abstruse
 c indifferent f wise

31. Cachinnation

- a guffaw d succor
 b conclave e conjunction
 c cunning f controversy

32. Exiguous

- a exhausting d prodigious
 b indigenous e esoteric
 c scanty f expedient

33. Putative

- a punishable d computable
 b supposed e worthless
 c aggressive f reconcilable

34. Manumit

- a manufacture d liberate
 b enumerate e emanate
 c accomplish f permit

End

SET B

Begin

Darken the circle next to the word that means the same as the word in heavy type above the group.

Example:

1. Malaria

- basement fever
 theater fruit
 ocean tune

2. Fascinated

- ill-treated modelled
 poisoned charmed
 frightened copied

3. Liberty

- freedom worry
 rich serviette
 forest cheerful

4. Stubborn

- steady hopeful
 obstinate hollow
 orderly slack

5. Precise

- natural exact
 faulty grand
 stupid small

6. Resemblance

- memory fondness
 assemble repose
 attendance likeness

7. Anonymous

- applicable magnificent
 insulting fictitious
 nameless untrue

8. Elevate

- raise move
 revolve work
 waver disperse

9. Task

- horn game
 trap jail
 problem job

10. Courteous

- dreadful proud
 polite short
 curtsy truthful

11. Prosper

- imagine propose
 succeed beseech
 punish trespass

12. Lavish

- unaccountable selfish
 romantic lawful
 extravagant praise

13. Immerse

- frequent hug
 reverse dip
 rise show

14. Conciliate

- congregate reverse
 pacify radiate
 compress strengthen

15. Envisage

- enfeeble contemplate
 surround estrange
 activate regress

16. Amulet

- cameo jacket
 flirtation crest
 charm savory

17. Garrulous

- talkative daring
 massive ugly
 ridiculous fast

18. Libertine

- profligate rescuer
 farrago canard
 regicide missionary

19. Bombastic

- democratic anxious
 bickering cautious
 destructive pompous

20. Levity

- parsimony frivolity
 salutary velleity
 alacrity tariff

21. Whim

- complain noise
 tonic fancy
 wind rush

22. Ruse

- limb paste
 trick burn
 color rude

23. Recumbent

- fugitive cumbersome
 unwieldy repelling
 penitent reclining

24. Querulous

- astringent fearful
 petulant curious
 inquiring spurious

25. Temerity

- impermanence rashness
 nervousness stability
 punctuality submissiveness

26. Fecund

- esculent optative
 profound prolific
 sublime salic

27. Abnegate

- contradict decry
 renounce execute
 belie assemble

28. Traduce

- challenge attenuate
 suspend establish
 misrepresent conclude

29. Vagary

- vagabond caprice
 obscurity vulgarity
 evasion fallacy

30. Specious

- fallacious coeval
 palatial typical
 nutritious flexible

31. Sedulous

- rebellious dilatory
 complaisant diligent
 seductive credulous

32. Nugatory

- inimitable adamant
 sublime contrary
 numismatic trifling

33. Adumbrate

- foreshadow protect
 detect eradicate
 elaborate approach

34. Minatory

- implacable diminutive
 belittling quiescent
 depository threatening

End

Appendix F

Academic Self-Concept Scale

COLLEGE ATTITUDE SURVEY

Listed below are a number of statements concerning school-related attitudes. Rate each item as it pertains to you personally. Base your ratings on how you feel most of the time. Use the following scale to rate each statement:

SD. Strongly Disagree D. Disagree A. Agree SA. Strongly Agree

INDICATE YOUR RESPONSE BY CIRCLING THE APPROPRIATE LETTER(S). Be sure to answer all items. Please response to each item independently, do not be influenced by your previous choices.

- | | | | | | |
|-----|--------------------------------------------------------------------------|----|---|---|----|
| 1. | Being a student is a very rewarding experience. | SD | D | A | SA |
| 2. | If I try hard enough, I will be able to get good grades. | SD | D | A | SA |
| 3. | Most of the time my efforts in school are rewarded. | SD | D | A | SA |
| 4. | No matter how hard I try I do not do well in school. | SD | D | A | SA |
| 5. | I often expect to do poorly on exams. | SD | D | A | SA |
| 6. | All in all, I feel I am a capable student. | SD | D | A | SA |
| 7. | I do well in my courses given the amount of time I dedicate to studying. | SD | D | A | SA |
| 8. | My parents are not satisfied with my grades in college. | SD | D | A | SA |
| 9. | Others view me as intelligent. | SD | D | A | SA |
| 10. | Most courses are very easy for me. | SD | D | A | SA |
| 11. | I sometimes feel like dropping out of school. | SD | D | A | SA |
| 12. | Most of my classmates do better in school than I do. | SD | D | A | SA |
| 13. | Most of my instructors think that I am a good student. | SD | D | A | SA |
| 14. | At times I feel college is too difficult for me. | SD | D | A | SA |
| 15. | All in all, I am proud of my grades in college. | SD | D | A | SA |
| 16. | Most of the time while taking a test I feel confident. | SD | D | A | SA |
| 17. | I feel capable of helping others with their class work. | SD | D | A | SA |
| 18. | I feel teachers' standards are too high for me. | SD | D | A | SA |
| 19. | It is hard for me to keep up with my class work. | SD | D | A | SA |

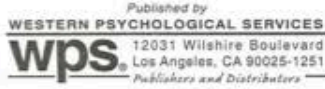
- 2 -

SD. Strongly Disagree D. Disagree A. Agree SA. Strongly Agree

20.	I am satisfied with the class assignments that I turn in.	SD	D	A	SA
21.	At times I feel like a failure.	SD	D	A	SA
22.	I feel I do not study enough before a test.	SD	D	A	SA
23.	Most exams are easy for me.	SD	D	A	SA
24.	I have doubts that I will do well in my major.	SD	D	A	SA
25.	For me, studying hard pays off.	SD	D	A	SA
26.	I have a hard time getting through school.	SD	D	A	SA
27.	I am good at scheduling my study time.	SD	D	A	SA
28.	I have a fairly clear sense of my academic goals.	SD	D	A	SA
29.	I'd like to be a much better student than I am now.	SD	D	A	SA
30.	I often get discouraged about school.	SD	D	A	SA
31.	I enjoy doing my homework.	SD	D	A	SA
32.	I consider myself a very good student.	SD	D	A	SA
33.	I usually get the grades I deserve in my courses.	SD	D	A	SA
34.	I do not study as much as I should.	SD	D	A	SA
35.	I usually feel on top of my work by finals week.	SD	D	A	SA
36.	Others consider me a good student.	SD	D	A	SA
37.	I feel that I am better than the average college student.	SD	D	A	SA
38.	In most of the courses, I feel that my classmates are better prepared than I am.	SD	D	A	SA
39.	I feel that I do not have the necessary abilities for certain courses in my major.	SD	D	A	SA
40.	I have poor study habits.	SD	D	A	SA

Appendix G

Student Adaptation to College Questionnaire



Directions

Please provide the identifying information requested on the right.

The 67 statements on the front and back of this form describe college experiences. Read each one and decide how well it applies to you at the present time (within the past few days). For each statement, circle the asterisk at the point in the continuum that best represents how closely the statement applies to you. Circle only one asterisk for each statement. To change an answer, draw an X through the incorrect response and circle the desired response. Be sure to use a hard-tipped pen or pencil and press very firmly. Do not erase.

In the example on the right, Item A applied very closely, and Item B was changed from "doesn't apply at all" to "applies somewhat."

Example	
A.	* * * * *
B.	* * * * *

← Applies Very Closely to Me Doesn't Apply to Me at All →

1. I feel that I fit in well as part of the college environment.	* * * * *	* * * * *
2. I have been feeling tense or nervous lately.	* * * * *	* * * * *
3. I have been keeping up to date on my academic work.	* * * * *	* * * * *
4. I am meeting as many people, and making as many friends as I would like at college.	* * * * *	* * * * *
5. I know why I'm in college and what I want out of it.	* * * * *	* * * * *
6. I am finding academic work at college difficult.	* * * * *	* * * * *
7. Lately I have been feeling blue and moody a lot.	* * * * *	* * * * *
8. I am very involved with social activities in college.	* * * * *	* * * * *
9. I am adjusting well to college.	* * * * *	* * * * *
10. I have not been functioning well during examinations.	* * * * *	* * * * *
11. I have felt tired much of the time lately.	* * * * *	* * * * *
12. Being on my own, taking responsibility for myself, has not been easy.	* * * * *	* * * * *
13. I am satisfied with the level at which I am performing academically.	* * * * *	* * * * *
14. I have had informal, personal contacts with college professors.	* * * * *	* * * * *
15. I am pleased now about my decision to go to college.	* * * * *	* * * * *
16. I am pleased now about my decision to attend this college in particular.	* * * * *	* * * * *
17. I'm not working as hard as I should at my course work.	* * * * *	* * * * *
18. I have several close social ties at college.	* * * * *	* * * * *
19. My academic goals and purposes are well defined.	* * * * *	* * * * *
20. I haven't been able to control my emotions very well lately.	* * * * *	* * * * *
21. I'm not really smart enough for the academic work I am expected to be doing now.	* * * * *	* * * * *
22. Lonesomeness for home is a source of difficulty for me now.	* * * * *	* * * * *
23. Getting a college degree is very important to me.	* * * * *	* * * * *
24. My appetite has been good lately.	* * * * *	* * * * *
25. I haven't been very efficient in the use of study time lately.	* * * * *	* * * * *
26. I enjoy living in a college dormitory. (Please omit if you do not live in a dormitory; any university housing should be regarded as a dormitory.)	* * * * *	* * * * *
27. I enjoy writing papers for courses.	* * * * *	* * * * *
28. I have been having a lot of headaches lately.	* * * * *	* * * * *
29. I really haven't had much motivation for studying lately.	* * * * *	* * * * *
30. I am satisfied with the extracurricular activities available at college.	* * * * *	* * * * *
31. I've given a lot of thought lately to whether I should ask for help from the Psychological/ Counseling Services Center or from a psychotherapist outside of college.	* * * * *	* * * * *
32. Lately I have been having doubts regarding the value of a college education.	* * * * *	* * * * *
33. I am getting along very well with my roommate(s) at college. (Please omit if you do not have a roommate.)	* * * * *	* * * * *

PLEASE TURN THE FORM OVER NOW AND COMPLETE STATEMENTS 34 THROUGH 67.

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	← Applies Very Closely to Me	Doesn't Apply to Me at All →
34. I wish I were at another college or university.	* * * * *	* * * * *
35. I've put on (or lost) too much weight recently.	* * * * *	* * * * *
36. I am satisfied with the number and variety of courses available at college.	* * * * *	* * * * *
37. I feel that I have enough social skills to get along well in the college setting.	* * * * *	* * * * *
38. I have been getting angry too easily lately.	* * * * *	* * * * *
39. Recently I have had trouble concentrating when I try to study.	* * * * *	* * * * *
40. I haven't been sleeping very well.	* * * * *	* * * * *
41. I'm not doing well enough academically for the amount of work I put in.	* * * * *	* * * * *
42. I am having difficulty feeling at ease with other people at college.	* * * * *	* * * * *
43. I am satisfied with the quality or the caliber of courses available at college.	* * * * *	* * * * *
44. I am attending classes regularly.	* * * * *	* * * * *
45. Sometimes my thinking gets muddled up too easily.	* * * * *	* * * * *
46. I am satisfied with the extent to which I am participating in social activities at college.	* * * * *	* * * * *
47. I expect to stay at this college for a bachelor's degree.	* * * * *	* * * * *
48. I haven't been mixing too well with the opposite sex lately.	* * * * *	* * * * *
49. I worry a lot about my college expenses.	* * * * *	* * * * *
50. I am enjoying my academic work at college.	* * * * *	* * * * *
51. I have been feeling lonely a lot at college lately.	* * * * *	* * * * *
52. I am having a lot of trouble getting started on homework assignments.	* * * * *	* * * * *
53. I feel I have good control over my life situation at college.	* * * * *	* * * * *
54. I am satisfied with my program of courses for this semester/quarter.	* * * * *	* * * * *
55. I have been feeling in good health lately.	* * * * *	* * * * *
56. I feel I am very different from other students at college in ways that I don't like.	* * * * *	* * * * *
57. On balance, I would rather be home than here.	* * * * *	* * * * *
58. Most of the things I am interested in are not related to any of my course work at college.	* * * * *	* * * * *
59. Lately I have been giving a lot of thought to transferring to another college.	* * * * *	* * * * *
60. Lately I have been giving a lot of thought to dropping out of college altogether and for good.	* * * * *	* * * * *
61. I find myself giving considerable thought to taking time off from college and finishing later.	* * * * *	* * * * *
62. I am very satisfied with the professors I have now in my courses.	* * * * *	* * * * *
63. I have some good friends or acquaintances at college with whom I can talk about any problems I may have.	* * * * *	* * * * *
64. I am experiencing a lot of difficulty coping with the stresses imposed upon me in college.	* * * * *	* * * * *
65. I am quite satisfied with my social life at college.	* * * * *	* * * * *
66. I'm quite satisfied with my academic situation at college.	* * * * *	* * * * *
67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at college.	* * * * *	* * * * *