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## MULTIDIMENSIONAL PERFECTIONISM AND SOCIAL CONNECTIVITY AMONG YOUTH: FINDINGS AND IMPLICATIONS

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MULTIDIMENSIONAL PERFECTIONISM AND SOCIAL CONNECTIVITY  
AMONG YOUTH: FINDINGS AND IMPLICATIONS

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DISSERTATION

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A dissertation submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy in the  
College of Education  
at the University of Kentucky

By  
Alexander Nounopoulos

Lexington, Kentucky

Director: H. Thompson Prout, Professor of School Psychology

Lexington, Kentucky

2013

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## ABSTRACT OF DISSERTATION

### MULTIDIMENSIONAL PERFECTIONISM AND SOCIAL CONNECTIVITY AMONG YOUTH: FINDINGS AND IMPLICATIONS

Although traditional researchers exploring perfectionism frequently cast the construct in a negative light, a steady stream of recent studies have demonstrated that perfectionistic beliefs can yield both positive and negative outcomes. Despite this progression in the research, perfectionism remains an understudied phenomenon among youth, especially as it relates to the ways in which these individuals are perceived by others. The current study builds on the previous literature by exploring adolescent perfectionism across a variety of psychological and psychoeducational dimensions. Moreover, a unique addition to the literature offered by this study was the inclusion of peer-reports along with self-reported measures in hopes of gaining a fuller understanding of the psychosocial characteristics of perfectionistic youth. The incorporation of peer reports also allowed a novel approach to the study of perfectionism by exploring this construct through the lens of their adolescent colleagues. Self and peer reported data was drawn from a sample of 816 ninth grade students representing three separate high schools.

MANOVA results revealed a number of differences between perfectionistic subtypes across both self and peer-reported data. More specifically, adaptive perfectionists rated themselves as having less anxiety and depression as compared to their maladaptive and non-perfectionistic counterparts. Adaptive perfectionists were also reported to have stronger interpersonal relationships and greater social connectivity than their peers. Moreover, both adaptive and maladaptive perfectionists reported significantly higher GPAs than non-perfectionists. Peer informant data indicated that adaptive perfectionists were rated as having the highest academic expectations followed by maladaptive perfectionists and then non-perfectionists. Contrary to expectations, no significant differences were found between cluster groupings on peer reported social withdrawnness.

Findings suggest that adaptive perfectionism is associated with a range of positive psychological, psychoeducational and psychosocial outcomes. Conversely, maladaptive perfectionism appears to be related to several behaviors which may impede healthy adolescent functioning. Implications regarding the improved assessment of perfectionism and intervention strategies aimed at both students and professionals working within the school domain are discussed.

KEYWORDS: Perfectionism, Adolescents, Social Connectivity, Outcomes, Peer Ratings

Alexander Nounopoulos

May 3, 2013

MULTIDIMENSIONAL PERFECTIONISM AND SOCIAL CONNECTIVITY  
AMONG YOUTH: FINDINGS AND IMPLICATIONS

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## Acknowledgements

First and foremost, I would like to thank my wife, Charmaine. This journey could not have been completed without you. The never ending love, support and patience you offered selflessly during this long journey cannot fully be expressed in words and for that I am eternally grateful. You have been my rock, closest confidant, sounding stone and biggest advocate all these years. This achievement is ours together.

I am very grateful for the guidance of Dr. Tom Prout who served as my doctoral chair. Your patience and support throughout my graduate studies will never be forgotten. I was fortunate to learn from you and your assistance during my dissertation defense preparation was especially vital. A great deal of gratitude is owed to Dr. Rich Gilman who saw something in a young man from Winnipeg, Canada many years ago. Your mentorship led me on a fascinating journey to a new and exciting place where your knowledge, support, humor and endless encouragement instilled a confidence in me which helped shape me as both a researcher and clinician. I would also like to thank the remaining members of my doctoral committee whose invaluable feedback was always provided in such an encouraging fashion. I was incredibly fortunate to have such a well-rounded, knowledgeable and caring committee, enabling me to complete this voyage.

Thank you to my friends Brian, Russell and Fatima whom I respect greatly and who always lent an ear even in my most frantic moments. I would also like to acknowledge Lexie for putting a smile on my face when it was needed most.

This section is not complete without the mention of the immeasurable love and support given to me by the remaining members of my family. To my mother, who is the strongest person I know and my personal hero, you have sacrificed so much over the

years to help me achieve this goal. I am so excited about this next chapter of our lives. I would also like to thank my brother and sister for not only being amazing role models but also my best friends. I am so proud of you and feel so blessed to have you in my life. Finally, to my father, you are greatly missed but I know that you are smiling down proudly.



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## **Chapter One: Introduction and Review of Selected Literature**

Adolescence is an important development milestone where one establishes a better sense of one's self, attempts to develop close relationships with others, and begins to formulate long-term goals. However, what are the psychological, psychosocial and psychoeducational consequences associated with adolescents who have exceedingly high standards? Such students, often colloquially described by teachers and/or parents as "perfectionists" are assumed to rarely view their experiences (and potential progress) favorably, dwell on their personal shortcomings, experience interpersonal difficulties and seldom live up to their own expectations (Flett, Hewitt, Oliver, & MacDonald, 2002; Gilman & Ashby, 2006). Further, research on perfectionism has typically focused on college-aged and adult samples with limited extension to adolescent populations (Rice, Leever, Noggle, & Lapsley, 2007). Therefore, less is known about adolescent perfectionists who are in the midst of forming their identities. As such, learning more about this particular population could have important implications for their learning and overall functioning (Rubin, 2007).

Early impressions made about perfectionistic adolescents have often been based on anecdotal beliefs rather than empirical findings (Hewitt & Flett, 1991); and current studies generally spotlight only the negative aspects of perfectionism (Rice, Leever, Christopher, & Porter, 2006; Romano, 2009). An extension of the literature to encompass youth is deemed important given that recent research suggests that, as a construct, perfectionism has both adaptive and maladaptive connotations (Grzegorek, Slaney, Franze, & Rice, 2004; Rice, Ashby, & Preusser, 1996; Wang, Yuen, & Slaney, 2009).

Among the smaller group of studies that attempt to explore both positive and negative aspects of perfectionism, results have produced valuable findings that significantly separate perfectionists across intrapersonal indicators such as life satisfaction, depression, and well-being (Gilman & Ashby, 2003a; Parker, 1997; Stoeber & Rambow, 2007). The notion that perfectionism can in fact lead to healthy functioning and positive outcomes motivates researchers to further understand its influence and potential value on adolescent functioning. This knowledge may serve to guide future researchers and practitioners on methods in which to target and prevent maladaptive aspects of perfectionism while accenting its productive qualities. This is particularly poignant if striving for perfection can serve as a facet of the healthy pursuit of excellence (Shafran, Cooper, & Fairburn, 2003).

While the literature continues to primarily center on internal and external psychological and behavioral indicators of perfectionism, some researchers have also explored the role of peripheral influences such as parents and other external reinforcers (Cook & Kearney, 2009; Rice, Tucker, & Desmond, 2008). This has provided some insight into the outside forces which may influence the development and outcomes of perfectionism. For example, the increasing educational and performance demands placed on students are ever-present in a variety of domains (e.g., academic/standardized test scores, social standing, extracurricular/sporting activities) with success being stressed as paramount. Nevertheless, researchers have an inadequate understanding of the precise impact that perfectionism plays within social developmental realms, namely the involvement of peer relations.

A study conducted by Rice et al., (2006) examined the social relationships among perfectionists by examining their degree of perceived social connectedness. Results revealed some associations between perfectionism and social connectedness. In particular, social connectedness partially mediated the effect of perfectionism on depression. Another investigation, conducted by Rice, Kubal and Preusser (2004) included fourth and fifth grade students and noted a negative relationship between a commonly identified aspect of maladaptive perfectionism (being excessively concerned over mistakes) and a student's self-perceived popularity. Although these studies yielded significant contributions, noteworthy gaps remain constant across the literature. More specifically, the exclusive use of self-report measures has been questioned in the personality literature (Blackman & Funder, 1998; Wei, Heppner, Russell, & Young, 2006). The limitations inherent in this method may be particularly salient among maladaptive perfectionists, who by definition are compelled to avoid failure or be perceived as anything less than stellar (Slaney, Rice, & Ashby, 2002). As a result, the incorporation of peer informant ratings in future perfectionistic research would appear to be of significant value.

The aim of the current study is to investigate the relationship between perfectionism, social connectivity and psychological, psychosocial, and psychoeducational correlates through the use of multiple raters (peers). By exploring (through multiple raters) potential differential relationships between perfectionism and social connectivity, as well as the association that these two variables have with a variety of mental health and developmental outcomes, a more improved holistic understanding of perfectionistic youth will be achieved.

## Early Conceptualizations of Perfectionism

Traditional views of perfectionism typically portrayed the construct as a severe indicator of maladjustment. While most individuals agreed that the placement of high standards was a core aspect of perfectionism, it was believed that standards were elevated to such an extent that they were unattainable, inevitably leading to disappointment, reduced self-worth and other severe consequences (Horney, 1950). Horney felt that perfectionism was a response to feelings of inferiority and neuroticism, whereas Burns (1980) conceptualized these elevated benchmarks as forms of neuroticism that stressed flawlessness. Overall, perfectionists were frequently characterized as being cognitively dysfunctional (Beck, 1976).

The increased attention that perfectionism gained also led a number of authors to attempt to provide a theoretical basis to underlie the development of perfectionism (Barrow & Moore, 1983; Hamachek, 1978; Hollender, 1965; Missildine, 1963). Although several theoretical models exist, parent-child interactions are commonly identified as a key determinant among those with empirical support. Two of the most prominent theories in the literature are known as the *social learning* and *social expectations* models.

The *social learning* model explains that children develop perfectionistic tendencies and behavior through the observation of others. This model is based on the early work of Bandura and Kupers (1964), which showed that children imitate self-reinforcement and self-evaluative behaviors displayed by their caregivers. For example, their study found that children were more likely to reward themselves only after meeting a high personal standard if their “models” similarly only rewarded themselves for these types of performances. Bandura and Kupers suggested that when an individual is unable

to reach their self-prescribed goals they exhibit behaviors of self-punishment, similar to the ruminative behavior often assigned to negative forms of perfectionism. According to this line of thought, children who view their parents as perfect may strive to become that "ideal" individual (Flett et al., 2002)

Another theory known as the *social expectations* model (Missildine, 1963), draws upon early psychoanalytic theory; specifically, that caregivers of perfectionists are inclined to be extremely critical and demanding (Barrow & Moore, 1983). Missildine (1963) suggests that children slowly develop perfectionistic tendencies as a result of striving to seek approval from parents. Moreover, parents who consistently defer approval and belittle their children for imperfect performance cause them to associate faultless behavior with eventual acceptance. The term “conditional positive approval”, coined by Hamachek (1978, p. 29), reflects such an environment that would nurture a neurotic perfectionist. For example, when a parent’s support and encouragement are dependent on the child’s performance, a child learns that they must perform to certain standards in order to be loved. Hollender (1965) stressed that when children continuously strive for parental approval they in turn internalize unrealistically high standards, thus perpetuating perfectionistic behaviors.

While the current study does not examine the role of parent child interactions, the aforementioned models correspond to some degree with Adler’s theories of *Individual Psychology* (1927a) and beliefs of goal attainment (1956). Furthermore, several researchers have noted perfectionistic striving to be a core tenet of Individual Psychology (Ansbacher & Ansbacher, 1956; Kottman, 2002). Adler’s (1927a) work suggests that children continuously exert effort to gain parental support and recognition. Another



aspect of this philosophy that is considered relevant to the current study is that despite the unhealthy qualities which were historically associated with perfectionism, Adler reasoned that positive connotations of perfectionism also existed. He proposed that a motivation to be perfect is inborn and can actually be healthy, especially when it is related to social interest. Nevertheless, he also recognized the existence of unhealthy, negative striving that takes place when individuals have impractical expectations which make goal achievement next to impossible. In line with his theories regarding goal attainment, Adler (1927b) stressed that humans were innately social beings and that interactions with others (family, friends, etc.) in the surrounding environment were the foundations of personality development. More specifically, Adler (1927a) argued that feelings of inferiority, something experienced by almost all children, are the catalyst that lead youth to begin striving for goals in hopes of overcoming their perceived inadequacies.

### **Empirical Support of a Unidimensional Approach to Perfectionism**

Although Adler believed that overcoming feelings of inferiority could in fact lead to some adaptive qualities, the general consensus among perfectionism researchers of the time was that consistent and continuous attempts for parental approval were generally maladaptive for youth. Given that the early history of perfectionism research is riddled with the notion that perfectionists garner unrealistic standards in combination with relentless self-criticism (Blatt, 1995), it is not surprising that perfectionism was viewed negatively. Early empirical explorations of perfectionism suggested that a variety of maladaptive outcomes were associated with maintaining exceptionally high standards, including feelings of shame and guilt (Blatt, 1995), disordered eating (Rasmussen & Eisen, 1989), depression (Hewitt & Dyck, 1986), Munchausen syndrome (Pacht, 1984),

irrational beliefs (Flett, Hewitt, Blankstein, & Koledin, 1991), and suicidal-ideation (Hewitt, Flett, & Turnbull-Donovan, 1992). In addition, much of these findings were supplemented further through the use of case studies, which often emphasized these more severe outcomes (Flett & Hewitt, 2002). As a result, the literature was dominated by the perception that perfectionism was a unidimensional entity closely tied to dysfunction, distress, and various forms of psychopathology (Hollender, 1965).

### **Current Conceptualizations of Perfectionism**

While the early history of research on perfectionism was laden with describing a negative personality trait associated with a wide array of psychopathology (Hollender, 1965; Horney, 1950; Burns, 1980), a shift emerged in the 1970s. One of the most influential works during that time was that of Hamachek (1978), who noted that while perfectionistic tendencies (namely the setting of high standards) could be detrimental, adaptive outcomes such as academic achievement could also result. For example, he argued that "perfectionism can help one become a competent and able person" (Hamachek, 1978, p. 33). In order to address this dichotomous philosophy, he characterized two different types of perfectionism in what he labeled *normal* and *neurotic*. While both groups were described as having extremely high standards, these parties were distinguished by their degree of satisfaction following a specific behavior. For example, *normal* perfectionists were described as holding high standards who become satisfied when completing a difficult task, whereas neurotics were characterized as being "unable to experience pleasure as a result of their efforts because they never feel their accomplishments are good enough" (Parker & Mills, 1996, p. 194).

Hamachek's (1978) notions were in direct contrast with much of the earlier literature on perfectionism which concentrated on the negative self-defeating aspects of the construct (Slade & Owens, 1998). With the shift toward perfectionism being described as more than just a negative trait, other authors provided further clarification of this distinct adaptive classification. For example, Parker and Adkins (1995) put forward that Adler's indication of an individual's tendency to strive for perfection in life is closely associated with the models of self-actualization as construed by Maslow (1970). That is, an individual's attempts at perfection are in line with self-actualization and are therefore an indication of healthy behavior rather than neuroses (Parker, 1997; Accordini, Accordini, & Slaney, 2000).

Numerous authors have since provided sufficient evidence to support a multifaceted approach to perfectionism (Ashby & Rice, 2002; Bieling, Israeli, & Antony, 2004; Enns, Cox, & Clara, 2002). The results of both cluster analytic (e.g., Grzegorek et al., 2004) and discriminant analytic techniques (e.g., Rice & Ashby, 2007) have lent further support to Hamachek's (1978) seminal effort by differentiating perfectionism into healthy (adaptive) and unhealthy (maladaptive) subtypes. This typological classification has yielded significantly distinct relationships with a variety of mental health and behavioral indicators. For example, adaptive forms of perfectionism have been shown to be associated with increased self-esteem, constructive striving (Flett, Hewitt, Blankstein, & Dynin, 1994; Grzegorek et al.); positive affect (Terry-Short, Owens, Slade, & Dewey, 1995); and satisfaction with life (Wang et al., 2009). On the other hand, maladaptive forms of perfectionism relate to noticeably different outcomes including, but not limited to, negative affect and anxiety (Rice & Slaney, 2002); procrastination (Saddler & Sacks,

1993); and less effective coping skills (Rice, Vergara, & Aldea, 2006). A more detailed outline of the various psychological, psychosocial, and psychoeducational outcomes associated with perfectionistic subtypes will be provided in a later section.

Although researchers have provided support for the notion that perfectionism may yield both positive/healthy and negative/unhealthy connotations (Frost, Marten, Lahart, & Rosenblate, 1990; Rice, Ashby, & Slaney, 1998; Stumpf & Parker, 2000), a universally recognized classification system and method of measurement for these subtypes remains elusive. Terms such as positive striving/negative evaluative concerns (Frost, Hemberg, Holt, Mattia, & Neubauer, 1993), neurotic/normal (Rice et al., 1996), dysfunctional/functional (Rheaume et al., 2000), negative/positive (Slaney et al., 2002; Terry-Short et al., 1995), and maladaptive/adaptive (Rice & Mirzadeh, 2000; Suddarth & Slaney, 2001) are just some examples of the variation existing within the current research climate. Nevertheless, reviewing some of these characterizations is crucial to fully understanding the construct and its associated outcomes.

### **Approaches to Measuring Perfectionism**

Although research on perfectionism yields an array of different approaches to its measurement, several underlying characteristics are commonly found amongst them. First and foremost, current researchers emphasize the endorsement of high standards as the hallmark characteristic of perfectionism. While these elevated expectations are believed to exist across all perfectionists, qualities noted to be problematic aspects of perfectionism include excessive concerns about making mistakes (Frost et al., 1990); self-doubt (Frost et al.; Rice et al., 2006); severe and persistent self-criticism (Ashby & Pak Bruner, 2005; Shafran et al., 2003); and a biased perception of failure (Rice & Slaney,

2002; Rice, et al., 2006). Conversely, a number of features are commonly thought to underscore the adaptive side of perfectionism such as conscientiousness (Flett & Hewitt, 2002; Parker, 2002); order and organization (Frost et al., 1993; Suddarth & Slaney, 2001); and personal satisfaction (Campbell & Di Paula, 2002; Stoeber & Otto, 2006).

Among the myriad of perfectionism measures in existence, three instruments have acquired the most support: the *Frost – Multidimensional Perfectionism Scale* (F-MPS; Frost et al., 1990), the *Hewitt and Flett – Multidimensional Perfectionism Scale* (H-FMPS; Hewitt & Flett, 1991), and the *Almost Perfect Scale - Revised* (APS-R; Slaney, et al., 2001). Although empirical studies have lent merit to all three scales and their examination of perfectionism as a multidimensional construct, they present uniquely different approaches to measurement. The successful progression of perfectionism research is attributed to the works of each of these authors and research colleagues. As a result, the current discussion will provide an overview of the aforementioned instruments.

**Frost - Multidimensional Perfectionism Scale.** The *Multidimensional Perfectionism Scale* (Frost et al., 1990), hereafter referred to as the F-MPS, was the first measure of perfectionism to allow for the discrimination of perfectionistic behavior. Its development was valuable given that the validity of previous measures were subsequently limited as a result of their unidimensional nature (Frost et al.,). Frost and colleagues believe that the etiology of perfectionism was rooted in the following six factors: a) concern over mistakes, b) personal standards, c) parental expectations, d) parental criticism, e) doubts about actions and f) organization. From this perspective, individuals who exhibit unhealthy forms of perfectionism are more likely to display elevated scores across the following subscales: concern over mistakes, personal standards,

parental expectations, parental criticism, and doubts about actions. Conversely, healthy perfectionists only demonstrate high scores across personal standards and organization. Adderholdt (1987) illustrates the previous point by explaining that unhealthy perfectionists are unique due to their tendency to minimize successful performances while magnifying even the slightest imperfections. Therefore, it appears that one of the key characteristics distinguishing what might be perceived as adaptive perfectionism from its maladaptive counterpart is how failure is perceived. Unfortunately, Frost and his colleagues did not include a specific subscale which solely explored the methods in which one views their own personal performance. In other words, while the level of expectations one endorses were examined, the degree of success individuals' perceived to have when attempting to reach those goals was primarily unexplored.

**Hewitt and Flett - Multidimensional Perfectionism Scale.** The identically titled *Multidimensional Perfectionism Scale* (Hewitt & Flett, 1991), hereafter referred to as the H-MPS, shortly followed the work of Frost et al., (1990). Much like its namesake, the H-MPS also considers concern over mistakes, personal standards, and organization as influential aspects of perfectionism. However, unlike Frost and colleagues (1990), their model posits three separate dimensions of perfectionism: a) self-oriented perfectionism, b) socially prescribed perfectionism, and c) other-oriented perfectionism. The H-MPS separates itself by its heavy focus on interpersonal aspects, and, as Enns and Cox (2002) state “the principal distinction among the three dimensions of perfectionism lies in the source and direction of the perfectionistic behavior” (p. 42). More specifically, self-oriented perfectionism is described as the imposing of exceptionally high (and at times unrealistic) standards upon oneself with stringent self-evaluations and motivation.

Research has revealed this subgroup to be commonly associated with difficulties such as depression and disordered eating (Hewitt & Flett, 2002). Socially prescribed perfectionists are characterized as those with the belief that others place unrealistic expectations on them, evaluate them stringently, and that only by achieving perfection can they obtain approval (Hewitt & Flett, 2002). Finally, other-oriented perfectionism involves placing unrealistically high standards on others and is most often associated with interpersonal problems (Grialou, 2007).

While Hewitt and colleagues (1991) support the multidimensional conceptualization of perfectionism and its delineation of unique subtypes, the underlying belief with the H-MPS is that perfectionism is a continuous, multidimensional construct where individuals differ in degrees of perfectionism. Furthermore, they resist the existence of an explicit adaptive perfectionistic typology (e.g., healthy versus unhealthy). This last notion has been a hotly debated point among researchers. For example, Hewitt and colleagues suggest adaptive perfectionism does not deserve its own separate typology since it may more accurately reflect the personality construct of conscientiousness than perfectionism (Flett & Hewitt, 2002). Further exploration of this question has yielded equivocal findings. For example, Rice and Slaney (2002) posit that the H-MPS and F-MPS may conflate the adaptive and maladaptive aspects of perfectionism given that neither measure includes a subscale that specifically evaluates the ways in which individuals manage perceived stressors. Similarly, comprehensive reviews of perfectionism conducted by Stoeber and Otto (2006), as well as by Bergman, Nyland and Burns (2007), indicate that a distinct perfectionistic subtype can be delineated which directly associates with positive and constructive aspects. Further, Stoeber and Otto

report that self-oriented perfectionistic strivings are positive as long as the individual is not overly concerned about mistakes and evaluation from others.

**The Almost Perfect Scale-Revised.** As mentioned above, even though factors such as doubt, concern over mistakes, and persistent self-criticism have all been identified as key qualities in defining and measuring the negative aspect of perfectionism, previous instruments assessing perfectionism did not specifically account for how one perceives their personal performance. Slaney and colleagues (2001) suggested that while adaptive and maladaptive perfectionists exhibit similarly high personal standards, they sharply contrast in how they deal with imperfections (Ashby, LoCicero, & Kenny, 2003; Rice & Preusser, 2002; Rice & Slaney, 2002). Slaney and colleagues attempt to address this gap with the inclusion of what they term “discrepancy”, that is, the tendency to persevere on their failure when their performance does not meet their high standards (Rice & Lapsley, 2001, p. 157). In this regard, adaptive perfectionists maintain equally high standards but recognize occasions when meeting these standards are unrealistic or unwarranted (i.e., low discrepancy), whereas maladaptive perfectionists have a high discrepancy between perceived performance and set standards (Aldea & Rice, 2006; Mitzman, Slade, & Dewey, 1994).

The *Almost Perfect Scale – Revised* (APS-R; Slaney et al., 2001) incorporates three separate subscales known as standards, discrepancy, and order. The first two subscales are key indicators for classifying individuals as either an adaptive versus maladaptive perfectionist. Slaney and colleagues (2001) note that while all perfectionists are said to hold exceptionally high standards, adaptive and maladaptive perfectionists sharply contrast in how they deal with imperfections (Ashby et al., 2003; Rice & Preusser,



2002; Rice & Slaney, 2002). The discrepancy subscale is a unique and key determinant of this conceptualization because it examines how individuals react to situations in which standards cannot be attained (Rice & Preusser, 2002). Individuals with high standards but also exhibiting a sharp contrast between perceived ability and performance (high discrepancy), are generally referred to as maladaptive perfectionists (Wei, Mallinckrodt, Russell, & Abraham, 2004). Empirical studies using this scale have shown a significant association between maladaptive perfectionism and increased levels of anxiety and depression (Mobley, Slaney, & Rice, 2005). On the other hand, adaptive perfectionists are characterized as individuals who maintain equally high standards but recognize occasions when meeting these standards are unrealistic (low discrepancy) or unwarranted (Aldea & Rice, 2006; Mitzman et al., 1994). Finally, the order subscale measures an individuals' desire for neatness and organization (Wang, Slaney, & Rice, 2007). It should be noted that a number of studies have chosen to exclude the order subscale due to the fact that it has yielded poorer factor loadings (Sudarth & Slaney, 2001) and its lack of influence on determining perfectionistic subtypes (Ashby, Rahotep, & Martin, 2005; Gilman & Ashby, 2005; Rice & Ashby, 2007; Wang et al., 2007). Although the order subscale offers interesting information regarding the organizational tendencies of perfectionists, its value on the APS-R appears to be in question.

While deleterious outcomes have been associated with maladaptive perfectionism, adaptive perfectionism has been correlated with various positive traits such as greater coping resources (Nakano; 2009; Nounopoulos, Ashby, & Gilman, 2006), increased self-esteem, (Grzegorek, et al., 2004), and higher GPA (Accordino et al., 2000). Although it is a newer scale in comparison, several studies have lent credence to the use of the APS-R

(Rice & Aldea, 2007; Rice, Ashby, & Slaney, 2007; Slaney et al., 2001), providing strong psychometric properties and support for this conceptualization. Another distinct advantage that the APS-R has over several other instruments is its replication and subsequent validation with diverse populations. Even though the APS-R was initially developed with college-aged students, researchers have actively taken steps toward exploring its utility among other groups. Mobley et al. (2005) yielded support for the validity of the APS-R among a sample of 251 African American undergraduate college students. In addition, a comparison of the aforementioned participants with a sample of European American students indicated that the APS-R was a psychometrically sound measure with both cultural groups. Support for the APS-R has also been gained among school aged youth such as gifted and talented students (Vandiver & Worrell, 2002) and typical high school populations (Accordino et al.), making the APS-R a particularly potent instrument for identifying the psychological, psychosocial, and psychoeducational outcomes associated with perfectionistic youth. In addition to its strong psychometric properties, the APS-R uniquely and effectively distinguishes between adaptive and maladaptive perfectionists making it a logical choice for the current study.

### **Adult Outcomes Associated with Perfectionistic Subtypes**

Although the measurement of multidimensional perfectionism and latent outcomes has been ongoing for approximately two decades, relatively little is known about adolescent and childhood populations. Among adults and college-aged samples a number of significant findings have been gleaned. Specifically, maladaptive perfectionists have been associated with a number of deleterious conditions. For example, studies have shown positive correlations between maladaptive perfectionism and anxiety

(Bieling et al., 2004; Mobley et al., 2005; Suddarth & Slaney, 2001), depression and learned helplessness (Argus & Thomson, 2008; Nakano, 2009; Frost, & DiBartolo, 2002), eating disordered behavior (Ashby, Kottman, & Schoen, 1998; Bardone-Cone et al., 2007; Sassaroli & Ruggiero, 2005), obsessive compulsive symptomatology (Moretz & McKay, 2009; Rice & Pence, 2006), and suicidal ideation (Hunter & O'Connor, 2003). In fact, much of the early literature examining perfectionism was dominated by studies investigating the link between maladaptive perfectionists, eating disorders, and obsessive compulsive behavior. Furthermore, maladaptive perfectionists have displayed deficient coping resources when compared to their adaptive counterparts (Martin, 2006; Stoltz & Ashby, 2007).

Explorations of academic achievement have also revealed poorer performance for maladaptive perfectionists than adaptive perfectionists (Canter, 2006; Leenaars, & Lester, 2006; Rice & Mirzadeh, 2000). Other studies have provided data that contradicts this notion, revealing no significant differences in academic performance among types of perfectionism (Grzegorek et al., 2004; Rice & Dellwo, 2002). Nevertheless, an interesting finding is that those who hold high standards (i.e., perfectionistic striving), regardless of their perfectionistic subtype, often outperform those who are not identified as perfectionists (Rice & Ashby, 2007).

While the literature is saturated with investigations of the deleterious effects related to maladaptive perfectionism, several studies have also noted the benefits of healthy perfectionistic striving. Interviews surveying college-aged, self-described perfectionists have shown that many perfectionists would not give up their exceptional strivings even if given the chance (Slaney & Ashby, 1996; Slaney, Chadha, Mobley, &

Kennedy, 2000). In fact, respondents in these studies view their high standards and orderliness as central to their success. Quantitative studies among adults reveal that adaptive aspects of perfectionism yield significant associations with elevated self-esteem and social adjustment (Ashby, Rice, & Martin, 2006; Stoeber & Otto, 2006). Alternatively, adults identified as adaptive perfectionists have typically reported decreased perceived stress and depression (Rice & Ashby, 2007; Rice & Dellwo, 2002; Rice et al., 2006). As a result, recent data obtained from adult samples appear to lend credence to the adaptive and maladaptive subtypes of perfectionism given the noteworthy discrepancies in cognitions, behaviors, and performances. This notion is particularly relevant for mental health practitioners who hope to develop treatment protocols to address maladaptive factors associated with perfectionistic striving.

### **Youth Outcomes Associated with Perfectionistic Subtypes**

While most authors on the subject agree that perfectionism traces its roots to childhood, there is a dearth of literature looking at this specific age group. Ironically, the bulk of existing perfectionism measures have been developed for use among adults and thus have not been applicable to younger children (Rice et al., 2007). Even so, this is rather alarming considering that a link has commonly been identified between perfectionistic adults and various forms of psychopathology (Bieling et al., 2004; Enns, Cox, Sareen, & Freeman, 2001; Flett & Hewitt, 2002). With this in mind, considerable attention should be lent to critically reviewing and exploring the extent to which these findings translate to youth.

Upon examination, the literature yields a small number of empirical studies specifically exploring perfectionism among children and adolescents. Unfortunately, the

majority of the existing studies have focused primarily on gifted and talented populations (LoCicero & Ashby, 2000; Siegle & Schuler, 2000; Speirs Neumeister & Finch, 2006). Further, those who are not familiar with this domain of research have mistakenly thought that perfectionism is unique to this population. Regardless of this limitation, several studies have revealed that giftedness is not synonymous with perfectionistic tendencies and that these characteristics are prevalent within typically functioning populations as well (Accordino et al., 2000; Gilman & Ashby, 2006).

**Internalizing and externalizing behavioral outcomes.** One of the most commonly investigated psychological variables within the childhood perfectionism arena involves depression (Accordino et al., 2000; McCreary, Joiner, Schmidt, & Ialongo, 2004). Although data suggests a link between the two constructs, there is some confusion as to how exactly they are associated with one another. For example, some research has shown that unhealthy forms of perfectionism can serve as a predictor of depression (Mobley et al., 2005; Zhiang, 2008), while others have suggested that factors such as self-esteem (Ashby et al., 2006) and rumination (Harris, Pepper, & Mack, 2008; Luyckx, Soenens, Goossens, Beckx, & Wouters, 2008) mediate the relationship between the two variables. Nevertheless, recent studies have indicated that perfectionism has shown a differential relationship to depression in that the degree of depression an individual experiences may hinge on which perfectionistic subtype they display (Grialou, 2007; Wang et al., 2009).

A relationship between dimensions of perfectionism and levels of self-esteem has also been identified. For example, Stumpf and Parker (2000) investigated the extent to which perfectionistic subtypes were associated with self-esteem among a large sample of

students. Although their sample included college students, the majority (approximately 85 %) of the participants were academically gifted 6<sup>th</sup> grade students. Results from their study showed that self-esteem shared a positive correlation with adaptive perfectionism and had a negative association with maladaptive perfectionism. Further reviews of psychological maladjustment indicate that maladaptive perfectionists conveyed significantly higher levels of depression, anxiety, and social stress (Gilman & Ashby, 2003a, 2003b; Schumaker & Rodebaugh, 2009; Wang et al., 2009) and poorer coping skills than adolescents who self-reported as adaptive perfectionists (Nounopoulos et al., 2006).

Some researchers have also explored life satisfaction among perfectionists given the significantly different psychological outcomes between adaptive and maladaptive subtypes (Öngen, 2009). Diener and Diener (1996) suggest that individuals who regulate and modify realistic standards are more likely to experience greater satisfaction in life than those who display rigid objectives. Gilman, Ashby, Sverko, Florell, and Varjas (2005) investigated the relationship between satisfaction and perfectionism among Croatian and American youth. Findings suggested that regardless of cultural group, adaptive perfectionists exhibited higher levels of life satisfaction when compared to their maladaptive and non-perfectionistic counterparts. Additional studies are needed to further explore internalizing behaviors and perfectionistic youth. This gap is noteworthy considering that preliminary studies suggest that maladaptive perfectionists may have great difficulty deriving pleasure from their performance and subsequently experience unhappiness, whereas adaptive perfectionists are content with their accomplishments.

The current study aims to address this shortage in the literature and designates it as an area for exploration.

**Academic indicators of perfectionism.** In recent years, there have been several promising studies examining the relationship between academic achievement and subtypes of perfectionism among youth. In particular, data obtained from Accordino et al. (2000) that used the APS-R found that among a sample of high school students, that self-esteem and GPA were negatively correlated with maladaptive perfectionism. Similar findings regarding academic achievement have been replicated, linking adaptive rather than maladaptive perfectionism more closely to success (Rice & Ashby, 2007; Vandiver & Worrell, 2002). Interestingly, as is found with adults, youth classified as maladaptive perfectionists have been found to report greater academic performance (Stoeber & Rambow, 2007) and higher levels of life satisfaction (Gilman et al., 2005) than non-perfectionists. This would appear to suggest that possessing exceedingly high expectations in spite of the perceived degree to which goals are attained yield some considerable benefits.

**Gender differences in perfectionism.** One area in the perfectionism literature which has produced minimal investigation involves the effects of gender. Among the few studies examining gender differences among perfectionists, the majority have pointed to few if any significant distinctions. Although Parker (1997) suggested that females may have a higher propensity to be identified as adaptive perfectionists and males more likely to be labeled non-perfectionists, several studies have revealed data that does not support significant sex discrepancies across cluster of perfectionism (Grzegorek et al., 2004; Rice & Dellwo, 2002; Rice & Mirzadeh, 2000). It should be noted however, that the majority

of studies exploring potential gender differences have focused largely on college-aged samples. Therefore, caution must be lent to the interpretation of these findings. It would be unwise to automatically extend these findings to childhood and adolescent manifestations of perfectionism. Interestingly, in a study exploring potential disparities among children, Siegle and Schuler (2000) found some significant differences. Namely, that girls, tended to report greater parental expectations and demands as well as concern over mistakes than their male counterparts. Nevertheless, a more recent study failed to replicate these findings (Sondergeld, Schultz, & Glover, 2007). Given that the data on this subject is far from conclusive, and that the APS-R was typically not the measure of choice in the aforementioned studies, the potential of significant gender differences emerging when examining mean levels of perfectionism warrants future investigation.

### **Social and Interpersonal Indicators of Perfectionism**

Adler (1927a) asserts that as a whole, goal-attainment is influenced by relationships that serve to further develop a person's goals and that humans are social creatures that feel fulfilled when treated as active members of society. While external influences (e.g., parents, friends, reinforcement) are often lent as variables to detail the etiology and development of perfectionism, the interpersonal and social development of perfectionistic individuals has also been oft overlooked. The small amount of research exploring this topic has revealed some interesting results. For example, Slaney et al. (2006) found that maladaptive perfectionism was associated with greater interpersonal dysfunction when compared to other clusters. Rice et al. (2006) go on further to suggest that "the perfectionist who generally feels unworthy may be less likely to become connected with a social network; taking into account this limited connection with others



may help explain one way perfectionism affects adjustment” (p. 526). Their findings revealed social connection as a significant moderator in reducing the impact that maladaptive perfectionism has on hopelessness. This notion is important given that Dunkley, Blankstein, Halsall, Williams, and Winkworth (2000) report that maladaptive perfectionists seem to utilize more avoidant coping styles. Similarly, Ye, Rice, and Storch (2008), express concern that “children may become obsessively concerned with their flaws, compulsive in hiding them, and avoid social interaction and attention rather than actively engage in social activities and express caring to their peer friends” (p. 423). Another study done by Rice, Kubal, and Preusser (2004) found that extreme uneasiness about making mistakes, a key characteristic of unhealthy forms of perfectionism, was inversely associated with popularity. It is possible that the tendency for maladaptive perfectionists to isolate themselves from their peers could lead to a variety of long-term negative consequences. For instance, Olweus (1993) reported that middle school youth who experienced exclusion bore these feelings into adulthood where they suffered low self-esteem and interpersonal difficulties. Adaptive perfectionists on the other hand, according to LoCicero and Ashby (2000) have more social interest and willingness to develop social networks.

Among adults, several studies exploring intimate partnerings have shown that maladaptive perfectionists may have higher levels of dissatisfaction in relationships. This is attributed, in part, to the fact that they may be consistently unhappy with their partner’s ability to meet their own standards. As a result, general unhappiness and distress is noted to develop in these interpersonal relationships (e.g., Alden, Ryder, & Mellings, 2002; Wiebe & McCabe, 2002). These results appear to suggest that discrepancy (i.e., one’s

perception of perceived failures) may serve at the root of troubles experienced within interpersonal relationships. These findings offer weight for the need to explore social and interpersonal development among perfectionistic youth. Moreover, the inclusion of peer report data is deemed an important contribution to the underexplored childhood perfectionistic literature given that youth may be more likely to appear socially desirable across self-reports. A novel study recently conducted by Gilman, Adams and Nounopoulos (2011) included the use of peer report data as a means of safeguarding this challenge and to gain a more complete understanding of the social relationships that perfectionists experience. Results from this study indicated that, in addition to adaptive perfectionists being more prosocial than their maladaptive and non-perfectionistic peers, similar endorsements were also obtained via peer informant ratings.

### **Summary on Perfectionism**

Recently, perfectionism has been deemed a multidimensional construct consisting of positive and negative characteristics. Moreover, empirical data has provided evidence to suggest that various adaptive and maladaptive indicators are strongly associated with different forms of perfectionism. Unfortunately, while a plethora of studies have examined the relationship between perfectionism and various psychological and psychoeducational correlates among adults, very little is known about children and adolescents.

Given that subtypes of perfectionism have been shown to differentially relate to various significant maladaptive indicators, it is crucial for professionals to develop specific prevention and intervention models. Difficulties for these youth may also be most apparent at the later adolescent stage (i.e., high school), when students are

attempting to understand who they are and how they relate to those around them. Moreover, the demands from adult figures to consider long-term life plans (rather than short-term academic goals) can be a debilitating experience for many. These pressures are extremely relevant as they coincide with a period of time when identity formation is paramount. Nevertheless, adaptive perfectionists as described above typically exhibit more positive psychological, psychoeducational, and psychosocial outcomes. For these reasons, rather than stressing the complete elimination of perfectionistic striving, educators and mental health professionals should explore ways to aid youth in developing and honing skills that buffer their perceived faults and failures. Before this can occur, however, a more comprehensive understanding of perfectionistic youth is needed. In particular, a stronger focus on facets of identity development and peer relations is essential. While there is some understanding of the behavioral and academic outcomes that perfectionistic tendencies may lead to, knowledge pertaining to the exact impact within social developmental realms is rather limited.

### **Adolescent Identity Development**

**Adolescent identity development defined.** In Erikson's (1968) seminal work, he theorized that a primary aim of adolescence was to establish a clear identity whereby youth become aware of personal strengths and weaknesses. Despite describing identity formation as an ongoing process across one's lifespan, he stressed that adolescence was a critical developmental period. The changes that adolescents experience are explained as occurring slowly, with connections to childhood becoming steadily supplanted by a novel set of experiences. During this crucial period, youth are compelled by both personal and external influences to create and solidify the different aspects of their identity. Erikson

(1972) further added that individuals who demonstrate a clearer sense of identity will have a greater likelihood of future success, whereas those with less developed understandings would stumble in their progression. Harter and Monsour (1992) also stressed the importance of this time, as youth begin to become more self-aware of their personal attributes (positive and negative) stemming from their newly formed cognitive reasoning skills. The monumental changes that students experience as they gain self-awareness and respond to external pressures may hold a number of important implications for perfectionistic youth. This subset of the population is deemed particularly relevant given that they are simultaneously setting lofty goals which may potentially impede or advance their development.

**Adolescent identity development and perfectionism.** Authors have noted that perfectionism fundamentally represents how individuals establish and subsequently strive toward personal standards (Campbell & DiPaula, 2002; Luyckx et al., 2008). Luyckx et al., (2008) further assert that this personality dimension could potentially impact identity formation given that a previous study (see Luyckx, Soenens, & Goossens, 2006 for a review) revealed that such a relationship existed among some of the Big Five personality traits. In their novel study, Luyckx et al., found a number of significant outcomes. First, adaptive perfectionists appeared to realistically plan their goals and more effectively strive toward them. They also had a greater sense of identity and assuredness based on their commitments. Conversely, maladaptive perfectionists struggled with feeling certain about their personal identity as they were occupied by negative ruminations that impeded their success. They posited that the self-criticism that maladaptive perfectionists

displayed may have interfered with the attainment of, not only their goals, but also feeling certain about their identity as nothing was ever worthy of their rigid standards.

**Adolescent identity development and social connectedness.** Adolescents use their peers as a primary source for social comparison and self-appraisal (Prinstein & Aikins, 2004). This comparison group provides a point of resistance for teenagers' beliefs towards themselves and others, a detail that Davidson and Youniss (1991) point to as essential to identity development. It is for this reason that the teenage cohort and the surrounding academic domain serve as the principal catalyst for the sense of self that teens begin to construct during adolescence (McAdams, 1993, Pugh & Hart, 1999). This is especially pertinent given that teens spend more time in the school environment interacting with peers than anywhere else (Larson & Richards, 1991). In addition to the establishment of identity, studies have explored the importance that peers have on an adolescent's sense of connectedness and belonging. For example, the adolescent cohort also offers essential developmental needs to individuals, such as belongingness and community affiliation (Johnson et al., 2006). As such, research indicates that youth who do not experience a sense of belonging are significantly more apathetic and withdrawn within the school environment (Osborne, 1997; Voelkl, 1996). These findings pose significant implications given that individuals who view themselves as detached from their cohort, regardless of characteristics like sex or race, tend to exhibit greater levels of depression and anxiety (McMenamy, Jordan, & Mitchell, 2008), outcomes which impede positive psychological development (Bomba, Modrezejewska, Pilecki, & Slosarczyk, 2004). Therefore, more needs to be understood about social connectivity and other

psychological correlates as they pertain to adolescent students who are undergoing a key phase of development.

### **Peer Social Connectivity**

Research has consistently revealed significant associations between one's social standing and various adaptive and maladaptive indicators, such as social competence, problem-solving skills (Newcomb, Bukowski, & Pattee, 1993), aggression, and withdrawal (Sandstrom, Cillessen, & Eisenhower, 2003). Researchers such as Bowlby (1969), suggest that individuals greatly rely on the acceptance and support of others. Numerous studies have outlined the deleterious effects of not having an active social network (Bell-Dolan, Foster, & Christopher, 1995; Boivin, Hymel, & Burkowski, 1995; Campo & Rohner, 1992; Ollendick, Wiest, Borden, & Greene, 1992).

**Defining social ostracism and disconnection.** The existing literature strongly emphasizes the importance of social connectivity and the role it plays on adolescent and subsequently adult development (Sebastian, Viding, Williams, & Blakemore, 2009). While social connectivity is exhibited in varying degrees from negative to positive, one subset of individuals who have garnered much attention are the socially ostracized or disconnected. Social ostracism can be characterized as the process of being shunned, ignored, avoided, or directly rejected from a larger social collective (Williams, 1997). The literature further explains that poor social connectivity can result from either explicit, intentional, or more subtle, concealed methods of rejection such as ignoring an individual's presence (Leary, 2001). Nevertheless, social ostracism is far from novel given that it has been pervasive to most settings and societal groupings throughout history (Gruters & Masters, 1986). Bastian and Haslam (2010) suggest that ostracism has

such a profound impact due to its ability to disconnect us from our natural community in much the same way that “many early civilizations equated exile with death” (p.107).

Much like the construct of perfectionism, the examination of socially ostracized individuals has yielded a slew of descriptive labels and methods of classification often creating confusion within the scientific community. Nevertheless, research consistently describes persons who are “neglected,” “rejected,” “overly shy,” “inhibited,” “withdrawn,” and “isolated” as being the most likely candidates of social ostracism (Rubin & Asendorpf, 1993; Rubin, Stewart, & Coplan, 1995). Although the exploration of individuals with healthy social connectivity (e.g., popular, average) offers valuable data, a greater focus is often placed on those with impoverished connectivity (i.e., the socially ostracized) experiences since they face such noteworthy challenges. The impact of social ostracism is highlighted by the fact that individuals perceive ostracism as extremely adverse and painful, even in instances when it is facilitated by others we dislike or feel distant from (Gonsalkorale & Williams, 2007). In fact, a study by Zadro, Williams, and Richardson (2004) showed that exclusion through computer media had a (negative) impact that was on par with face-to-face scenarios. Moreover, Forgas, Williams, and von Hippel, (2003) showed that thoughts of social exclusion were strong enough to induce feelings of isolation and diminished self-worth. Naturally, the aforementioned findings have produced a desire for the measurement and classification of peer social status and connectivity (Terry & Coie, 1991). In an attempt to address this need, an abundance of studies have emerged over the past two decades.

**Measuring social connectivity.** Peer reports have been repeatedly used in order to identify socially disconnected, ostracized youth. Over the last couple of decades, the most

common conceptual approach to exploring social connectivity has involved what was initially characterized by Moreno (1934), as sociometry (Cillessen, Bukowski, & Haselager, 2000; DeRosier & Thomas, 2003). Sociometry is a technique that quantifies social interaction in childhood and adolescence based on positive and negative endorsements provided by peers (Jiang & Cillessen, 2005). This quantification was further clarified by Peery (1979) who conceptualized social connectivity as a two-dimensional construct, composed of what he termed social preference and social impact. Social preference is described as a measure of relative likableness or acceptance, whereas social impact incorporated the extent to which a person negatively disturbs or influences the group dynamic. Proponents of this approach have typically required students to designate a small number of peers (often three) with positive nominations of whom they like most and negative nominations representing those they like least (Bukowski & Newcomb, 1985; Coie & Dodge, 1983). Task specific questions such as, “Name those who you like/do not like to play with?” have also been used, but less frequently as a means of assessing social connection (Terry, 2000). Based on the scattering of informant responses, individuals are then categorized into five separate groups. “Popular” (well-liked and accepted by others), “controversial” (often liked but were nominated as being disruptive in their social environment), “average” (a balance of liked and disliked endorsement), “rejected” (both disliked and disruptive to the social environment) and “neglected” (generally ignored by the peer group) (Coie, Dodge, & Coppotelli, 1982; Newcomb & Bukowski, 1983). Once these groupings are made, children categorized as being popular, controversial or average are viewed as being on the positive end of the social connection spectrum (Wentzel, 2003). Conversely, sociometric techniques recognize rejected and



neglected (i.e., socially ostracized) youth as being the most socially disconnected (Coie & Dodge, 1988).

While sociometric methods are widely used and yield somewhat consistent classification estimates (Friedman, 2004; Terry & Coie, 1991) there is existing concern about their ability to explicitly capture socially ostracized youth. More specifically, sociometric techniques primarily rely on the lack of endorsements (representing popularity) an individual receives to describe neglected youth. This is problematic given that being unpopular does not necessarily equate to being actively neglected from your peer group (Rubin & Asendorpf, 1993). As a result, the inclusion of descriptive measures might better capture ostracized socially disconnected youth.

**Strengths and weaknesses of peer report methodology.** Although the literature examining social connectivity oft relies on peer report measures, there are a number of benefits and drawbacks inherent to this methodology. Significant advantages to using peer reports include their reliance on multiple sources of information to more accurately describe an individual (Kamphaus, DiStefano, & Lease, 2003), and the ability to examine broader social patterns among youth in the absence of adult influence (Kelley, Blankenburg, & McRoberts, 2002).

Conversely, peer reports among adolescents are subject to several difficulties given that social groupings among this population are much more complex and varied. An individual (especially in a larger school setting) can belong to a number of social groupings (e.g., clubs, sporting groups) which operate distinctly from one another (Brown, Mory, & Kinney, 1994). As a result, researchers run the risk of having informants who simply are unfamiliar with some of their peers which in end limits the

quality of data obtained. Historically, the majority of studies exploring social connectivity through peer report methods have focused on elementary-aged children seeing as though they are consistently exposed to their entire peer network.

While peer reports offer valuable information, one potential method of addressing the above limitations would be to supplement them with self-report items. It is possible that the inclusion of such measures would provide a more complete picture of social connectivity. Personal accounts of perceived connectivity could provide further insight into the adolescent social experience by tapping into specific behaviors that lead to these feelings (i.e., degree of social connection).

**Outcomes associated with social disconnection.** A plethora of research has focused on the short-term and long-term outcomes associated with social connectivity (Asher & Coie, 1990; Erickson, Crosnoe, & Dornbusch, 2000; Kupersmidt, Coie, Dodge, & Asher, 1990; Parker & Asher, 1987). Results of these studies identify social standing as a predictor of numerous variables related to behavioral and psychological adjustment. The importance of interpersonal relationships is highlighted by a number of studies which reveal that ostracized and withdrawn adults exhibit internalizing difficulties such as depression, loneliness (Stevens, Martina, & Westerhof, 2006), low self-esteem (Williams, Cheung, & Choi, 2000; Zadro et al., 2004) and feelings of dehumanization (Bastian & Haslam, 2010). Similar findings have been found to extend to children and youth given that social interactions with peers are at the heart of social competency and development for children. Hartup (1989) indicated that peers serve such multifaceted roles (e.g., models, reinforcers, emotional pillars, etc.) that their influence on social competency is undeniable. Adaptive skills (e.g., problem solving, cooperation, appropriate forms of

communication) are forged as a result of these experiences. As such, positive social connections not only affect social skill development but later functioning as well.

Children who do not interact well with peers or who withdraw from the social community are at increased risk of experiencing peer neglect or rejection (Faul, 2006). For example, extensive literature has documented that youth treated as social outcasts are prone to experience maladaptive symptomatology such as loneliness, (Boivin et al., 1995), poorer self-esteem, and negative self-concepts (Bell-Dolan et al., 1995; Coplan, Prakash, O'Neil, & Armer, 2004).

Within the psychoeducational domain, children who experience chronic ostracism can exhibit elevated peer and teacher related difficulties (Downey, Lebolt, Rincon, & Freitas, 1998). More specifically, disruptive classroom behaviors, increased aggression, and likelihood of being victimized by others (Downey et al.,; Kupersmidt et al., 1990) and decreased school performance (Cowen, Pederson, Babigian, Isso, & Trost, 1973; Gazelle, & Ladd, 2003) were all noted for this subgroup. Within adolescence, some of the factors which have been identified to improve social status involve being considered trustworthy, genuine, helpful to others, friendly and cheerful, and having good conversational skills (Cunningham & Siegel, 1987; Dodge, 1983; Wasik, Wasik, & Frank, 1993).

In summary, research in recent years has consistently noted a range of maladaptive outcomes that are associated with poor social functioning and more specifically social disconnection. Conversely, individuals presenting prosocial behaviors regularly exhibit increased psychosocial adjustment in addition to a range of other positive outcomes. As such, these findings pose important implications for educators and

professionals. Similarly, while negative outcomes have also been associated with perfectionism, current studies continue to suggest that separate subtypes exist with both positive and negative dimensions. As mentioned previously, while adolescent examinations of these domains exist in the literature, researchers continue to note that this is an oft overlooked population.

### **Purpose of the Current Study**

The present study examined adolescent perfectionism across negative and positive dimensions. To date, only two published studies have involved the use of peer informant ratings toward their investigation of perfectionistic youth (Flett, Besser, & Hewitt, 2005; Gilman et al., 2011). While research by Flett et al. (2005) was the first of its kind, it relied solely on the reporting of one, same-sex informant (best friend). As a result, the inclusion of numerous peer informants who vary in the quality of the relationships held with one another appears valuable. Investigating how self-reports coincide with informant ratings of perfectionism and indicators of social status will provide an important contribution to the extant literature. This last notion is especially poignant when one considers that negative peer relationships in childhood are associated with later psychological dysfunction, juvenile delinquency, substance abuse, and adult criminal behavior (Erickson et al., 2000; Ollendick et al., 1992; Zettergren, 2003). In fact, Bradley (2001) reported that 28% to 79% of disordered adults displayed a history of problematic peer relationships. Moreover, literature has often pointed to middle adolescence as a critical time in identity development (Crocetti, Klimstra, Keijsers, Hale, & Meeus, 2009; Meeus, 1996; Meeus, Iedema, Helsen, & Vollebergh, 1999). The teen population studied was also viewed as remarkable given that the occurrence of maladaptive mental health

outcomes rise substantially during this age (Hankin, Roberts, & Gotlib, 1998; Oldehinkel, Wittchen, & Schuster, 1999). It was believed that the current study would provide a unique and comprehensive perspective on the exploration of perfectionistic youth. Moreover, the notion that social supports and connectedness could act as a buffer against negative internalizing behaviors and maladaptive perfectionism is encouraging, given the lack of existing treatment protocols for youth. For the current study, it was expected that maladaptive perfectionists would differ from both their adaptive perfectionistic and non-perfectionistic counterparts when examining psychological, psychoeducational, and psychosocial outcomes.

### **Research Hypotheses**

1. Maladaptive perfectionists will report fewer adaptive characteristics than adaptive perfectionists and non-perfectionists.
  - a. Specifically, maladaptive perfectionists will report higher anxiety and depression scores than adaptive perfectionists and non-perfectionists.
  - b. Maladaptive perfectionists will also report lower scores on interpersonal relations and social connectivity than adaptive perfectionists and non-perfectionists.
  - c. Perfectionists (both maladaptive and adaptive) will report higher academic performance (i.e., GPA) than non-perfectionists.
2. Peer reports of high academic expectations and social withdrawnness will differ significantly from maladaptive perfectionists in comparison to adaptive perfectionists and non-perfectionists. That is, peers will report maladaptive

perfectionists more often as being socially withdrawn and having high academic expectations compared to their adaptive and non-perfectionist counterparts.

## **Chapter Two: Research Design and Methodology**

This chapter describes the research design and methodology employed for the current study. Specifically, this section details the participants included in the sample, measures and procedures employed for data collection as well as the data analysis plan.

### **Participants**

Participants in the current study were ninth grade students from three public high schools located within the Central Kentucky region. In total, 1405 ninth grade students were approached to take part in the study as part of a large scale, longitudinal study exploring additional domains such as adolescent bullying, ostracism and life satisfaction. The participating educational institutions were selected from three separate school districts of varying population densities in order to improve the heterogeneity of the sample. Parent permission forms were sent home with students and returned with an initial consent rate of 77%. The final participation rate (upon data collection) continued to be strong as it only decreased to 75%. Only students who returned parent permission forms and student permission forms were allowed to complete the questionnaires. Participant sampling totals from the various schools were as follows. A large urban school with 2094 total students enrolled yielded a ninth grade participant sample of 336 students. The second school had 196 subjects and can be described as a rural school within a small community (total student population of 1137). The final 284 participants were obtained from the third high school located within a mid-size community that had 1635 students enrolled. Table 1 presents participant demographics by school. Among the total number of respondents, approximately half identified themselves as female (52%) and other half as male (47%). Most participants were either 14 or 15 years old (91%), and

a majority of participants identified themselves as being Caucasian (79%). For comparison purposes, see Table 2 for school and county demographics for ethnicity, percentage of students that received free/reduced lunches, and the amount of money spent on each student by the school's county (Kentucky Department of Education, 2007a, 2007b).



Table 1

*Participant Characteristics by School*

School	Characteristics	N	<i>n</i>	%	Mean	<i>SD</i>
School 1	Age	336			14.63	.59
	Sex: Female		166	50.0		
	Sex: Male		168	49.4		
	Ethnicity: Caucasian		227	67.6		
	Ethnicity: African American		53	15.8		
	Ethnicity: Hispanic		14	4.2		
	Ethnicity: Asian		11	3.3		
	Ethnicity: Other		24	0.3		
	Ethnicity: unspecified		6	1.8		
School 2	Age	196			14.84	.88
	Sex: Female		111	56.6		
	Sex: Male		84	42.9		
	Ethnicity: Caucasian		178	90.8		
	Ethnicity: African American		3	1.5		
	Ethnicity: Hispanic		2	1.0		
	Ethnicity: Asian		1	.5		
	Ethnicity: Other		7	3.6		
	Ethnicity: unspecified		5	2.6		
School 3	Age	284			14.61	.60
	Sex: Female		145	51.1		
	Sex: Male		134	47.2		
	Ethnicity: Caucasian		240	84.5		
	Ethnicity: African American		14	4.9		
	Ethnicity: Hispanic		5	1.8		
	Ethnicity: Asian		3	1.1		
	Ethnicity: Other		8	2.8		
	Ethnicity: unspecified		14	4.6		
Total	Age	816			14.69	.73
	Sex: Male		386	47.3		
	Sex: Female		422	51.7		
	Sex: unspecified		8	1.0		
	Ethnicity: Caucasian		645	79.5		
	Ethnicity: African American		70	8.6		
	Ethnicity: Hispanic		21	2.5		
	Ethnicity: Asian		15	1.8		
	Ethnicity: Other		39	4.7		
Ethnicity: unspecified		25	3.0			

Table 2

*School and County Demographics*

School		Ethnicity	% Free/reduced meals	\$ per student spent by county
School 1	64%	Caucasian	27%	\$9340
	22%	African American		
	6%	Hispanic		
	6%	Asian		
	2%	Other		
School 2	97%	Caucasian	44%	\$12,972
	1%	African American		
	1%	Hispanic		
	1%	Other		
School 3	87%	Caucasian	26%	\$8384
	7%	African American		
	3%	Hispanic		
	1%	Asian		
	2%	Other		

**Instruments**

The measures used in the current study were administered as a part of a larger battery of questionnaires which spawned several studies (Fredstrom, Adams, & Gilman, 2011; Gilman et al., 2011; Rice, Ashby, & Gilman, 2011). Only the measures used for the present study will be discussed herein.

**Demographic Variables.** The principle demographic variables were age, participant gender orientation (Females = 1 and Male = 0) and ethnicity (Caucasian = 1, African American = 2, Hispanic = 3, Asian = 4, and Other = 5). See Table 1 for a breakdown of these demographic variables. A noted limitation in the screening of this information includes the absence of other gender orientations/presentations and clearer ethnic classifications (e.g., Pacific Islander, First American/Nations, etc.). While such additional specificity may have provided some additional qualitative findings, they exceeded the scope of the current study. Furthermore, it was expected that reduced *n*

sizes (and subsequent decreased statistical power) would provide statistically insignificant data.

**Independent Variable - The Almost Perfect Scale – Revised.** *The Almost Perfect Scale - Revised* (APS-R; Slaney et al., 2001) is a 23-item self-report measure (see Appendix A). All items use a 7-point Likert-type rating scale (ranging from 1="strongly disagree" to 7="strongly agree"). The Standards subscale is comprised of 7 items (e.g., "I have high standards for my performance at work or at school"), and the Discrepancy subscale consists of 12 items (e.g., "My best just never seems to be good enough"). The remaining four items comprise the "Order" subscale (e.g., "I think things should be put back in their place"). Consistent with previous literature, the Order subscale items resulted in less relevant data and were therefore excluded from the instrument (Ashby et al., 2003; Nounopoulos et al., 2006; Rice & Ashby, 2007).

In line with previous APS-R research, cut off scores using the Standards and Discrepancy subscale scores were used to determine perfectionistic (adaptive vs. maladaptive) and non-perfectionistic classifications (Rice & Ashby, 2007). This classification of adaptive, maladaptive, and non-perfectionists has been evidenced across multiple studies (Grzegorek et al., 2004; Rice & Slaney, 2002; Rice et al., 2011). If the Standards subscale score was equal or greater than 37, the participant was classified as a perfectionist, while those scoring less than 37 were considered non-perfectionists. Further, if those classified as "perfectionists" (based on the Standards subscale) scored less than 42 on the Discrepancy subscale, they were classified as "adaptive perfectionists" while those who scored equal to or greater than 42 on Discrepancy were considered "maladaptive perfectionists".

Numerous studies have explored the utility of the APS-R. Slaney et al. (2001) cross-validated the APS-R with the H-MPS and the F-MPS revealing strong support for convergent and discriminant validity of the scale scores (Ashby & Rice, 2002; Rice & Ashby, 2007; Suddarth & Slaney, 2001). Estimates of internal consistency typically range between .85 to .87 for the Standards subscale, and .87 to .94 for the Discrepancy subscale (Accordino et al., 2000; Rice et al., 2007). Chronbach's alpha for the current sample was found to be .90 for the Standards subscale and .85 for the Discrepancy subscale. Significant, positive associations have been found for the Standards subscale with self-esteem and global life satisfaction measures (Grzegorek et al., 2004; Mobley, 1998; Wang et al., 2009), while significant, negative relationships with depression and anxiety measures have also been found. Conversely, the Discrepancy subscale exhibits negative relationships with the aforementioned adaptive variables (Accordino et al.; Gilman & Ashby, 2003a, 2003b; Gilman et al., 2005). Studies have also explored the reading level of the APS-R through the use of a Flesch-Kincaid Analysis, noting its comprehensibility for younger age groups such as those in late elementary (Gilman & Ashby, 2003).

### **Dependent Variables.**

*The Behavior Assessment Systems for Children 2 – Self Report-Adolescent.* *The Behavior Assessment Systems for Children 2 – Self Report-Adolescent* (BASC 2 – SRP-A; Reynolds & Kamphaus, 2004) is a 176 item broad-band self-report measure used to identify the thoughts and behaviors of children across various psychological domains (adaptive and maladaptive). The BASC 2-SRP-A is designed for use with adolescents between the ages of 12 - 21 years and is designed for the evaluation, differential diagnosis, and treatment planning of youth (Reynolds & Kamphaus). The entire BASC 2

is comprised of 16 separate clinical and adaptive behavior scales, consisting of either true or false, or four-point scales items (1 = Never, 2 = Sometimes, 3 = Often, and 4 = Almost Always). All scores are reported in standardized *t*-scores ( $M = 50$ ,  $SD = 10$ ). Clinical subscales with *t*-scores greater than 65 on maladaptive domains (e.g., anxiety and depression) and *t*-scores less than 35 on adaptive domains (e.g., interpersonal relations) suggest significant levels of distress. Reynolds and Kamphaus report an overall sample alpha reliability of .86 for both the Anxiety and Depression subscales, and .78 for the Interpersonal Relations subscale. Test-retest reliability has also produced favorable findings with composite scales of .82 (.74-.84) and individual subscales at .69 (.61-.84), and .89 (.81-.92) for Anxiety and Depression, respectively, and .75 for Interpersonal Relations. The Anxiety, Depression and Interpersonal Relations subscales were used as dependent variables.

The Anxiety subscale is composed of 13 items that assess thoughts and feelings such as generalized fears, worries, and nervousness (Reynolds & Kamphaus, 2004). Item samples include statements such as “I am afraid of a lot of things,” and “I worry when I go to bed at night.” Chronbach’s alpha for the Anxiety subscale in the present study was .90.

The Depression subscale is composed of 12 items that assess symptoms of depression, such as feelings of unhappiness, loneliness and dejection (Reynolds & Kamphaus, 2004). Item samples include statements such as “I just don’t care anymore,” and “Nothing ever goes right for me.” Chronbach’s alpha for the current sample was found to be .90 for the Depression subscale.

The Interpersonal Relations subscale is composed of 7 items that assess an individual's report of successful social relationships and friendships (Reynolds & Kamphaus, 2004). Item samples include statements such as "Other people don't like me," and "I feel close to others." An estimate of internal consistency for the Interpersonal Relations subscale was revealed to be .80.

***Social Relationship Questionnaire (SRQ).*** A modified version of the *Social Relations Questionnaire* (Blyth, Hill, & Thiel, 1982) was included as a measure of social/interpersonal functioning. The SRQ was designed to measure participants' reputations as observed by peer group members. The SRQ consists of 11 items, however, for the purposes of this study, only two dichotomously scored questions were used. One question reflected peers' perceptions of individuals' high standards ("*Check the names of students who have very high academic expectations for themselves?*") and the other question reflected peers' perceptions of individuals' social connectedness ("*Check the name of those students who seem socially withdrawn?*"). These items were included as a means of differentiating and potentially identifying perfectionistic students as well as those perceived as disconnected or withdrawn from peer social networks.

Given the time constraints and the size of the sample (scores of classrooms), it was determined that nominations of all participants was not feasible. Following the methodology of Miller and Byrnes (2001), participants were randomly selected from the entire list of participants instead of individual classrooms (which would have subsequently restricted endorsements to one setting). Following random selection, subjects were then placed into groupings of 20 names. These lists were then presented in place of the entire roster to each respondent. The design allowed a maximum of 15

participants to be given the identical student list. It was believed that this provided participants the opportunity to be rated by peers who were recognizable to them across settings (extracurricular activities, outside of school, lunch periods, etc.). Close monitoring took place to reduce the likelihood of a student being presented with their own name. As a result, students had the possibility of receiving as many as 15 (“yes” versus “no”) endorsements for the 10 dichotomous items. To avoid unreliable data, peers were strongly advised to not rate their peer unless they had direct contact with that individual for at least 6 months. Total raw scores on each SRQ item was gathered by summing both types of endorsement (“yes” and “no”). Endorsement totals ranged between zero and 15, and were subsequently divided by the number of “yes” votes in order to obtain a mean score. Following this, averages were transformed to  $z$ -scores as a means of standardizing responses into overall scores where lower  $z$ -scores denoted more social connectivity and higher  $z$ -scores represented less social connectivity.

***Grade Point Average (GPA).*** Cumulative GPA was obtained by asking the participants to self-report their GPA since entering ninth grade. Data was obtained using this method as access to student academic records was not granted by the representative school districts. Nevertheless, self-reported GPA was still believed to be a valuable estimate of current academic functioning. Mean GPA across all academic grades (e.g., As, Bs, Cs, Ds, Fs) was computed. Self-reported GPA ranged from 0.00 to 4.00 ( $M = 2.73$ ,  $SD = 0.87$ ) with higher scores representing a higher grade.

***Social Connectivity Composite.*** A unique aspect of this study was the use of a composite score that included both self- and peer reports (see Gilman, Adams, Jennings, Fredstrom, & Williams-Ayra, 2010 for review). More specifically, to investigate the

introspective assessments of social connectivity among student subjects, a combination of select items from the BASC-2 (Reynolds & Kamphaus, 2004) were used in the composite for the current study. Six BASC-2 items from the Social Stress and Interpersonal Relations subscales were used: “People act as if they don’t hear me”, “I am lonely”, “I am left out of things”, “I feel out of place around people”, “Other kids hate to be with me”, and “I feel that nobody likes me”. All items were comprised of a 4-point Likert type scale (ranging from 1 = Never, 2 = Sometimes, 3 = Often, and 4 = Almost Always). Many of the aforementioned items were selected based on the findings of previous studies which had established an effective proxy of social disconnection related to perceptions of being ostracized or disregarded by others (Hall, 2010; Hall & Gilman, 2007; Twenge, Baumeister, Tice, & Stucke, 2001; Twenge, Catanese, & Baumeister, 2002).

For the current study, a principle component analysis (PCA) was conducted to determine the potential fit between items. The factor structure of the selected items was examined in the following ways. To begin with, Kaiser’s Stopping Rule (Kaiser, 1960) was used to detect the amount of factors (based on Eigenvalues exceeding 1.00) as it is the most widely used method of interpretation in practice (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Following this, factors were further fleshed out using a scree plot, a method which is frequently employed in conjunction with Kaiser’s stopping rule. The scree plot illustration isolates the number of factors based on the quantity of variables entered into the analysis (Tabachnick & Fidel, 2007). Results from these analyses provided sound support for a one-factor solution, yielding only one Eigenvalue greater than 1.0 (Eigenvalue = 3.50, next highest = .687, lowest = .318). Cross-loadings



from the explored items ranged from .71 to .80, and accounted for 58% of the explained variance. Further exploration of the scree plot showed only one notable break in slope, found at the first Eigenvalue. The composite variable also yielded respectable internal consistency ( $\alpha = .86$ ). Final scores were then standardized to z-scores in order to allow for the combination of the self- and peer reported items (i.e., social connections composite) described in greater detail below.

Peer reported data were also incorporated as they lent additional validity to the study that could not be fully explicated through self-reports exclusively (Greco & Morris, 2004; Landoll, 2009; Scholte et al., 2007). The Social Relationship Questionnaire (z-scored) item, “who is socially withdrawn?” was joined with the self-report social connectivity scores to create an overall composite of social connectivity, with higher scores on this continuum denoting poorer social connectivity). Selection of the above mentioned item was due to its similarity to various earlier peer report studies identifying socially isolated and behaviors among participants (e.g., Boivin & Hymel, 1997; Hymel, Bowker, & Woody, 1993; Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006), and therefore best characterized the study goal of recognizing socially disconnected youth.

As noted in Table 3 (variable 11), correlations between the social connections composite scale and other study variables spanned from  $-.59$  (BASC-2: Interpersonal Relations subscale) to  $.79$  (SRQ: Withdrawnness question) lending support toward the divergent and convergent validity of this variable.

## **Procedures**

School administrators representing several counties were randomly selected and

invited to participate in the study. Of those who expressed interest (one school declined), approval to collect data was secured through each school's representative principal. Explicit information was provided to each principal outlining the target sample, aims and prospected outcomes of the research. In addition, the research collective worked directly with the administrator and respective faculty to design a method of student solicitation and data collection that would be the least invasive. Each principal assigned a primary contact person (generally a lead teacher, counselor, or assistant principal) who served to facilitate the development of student solicitation and scheduling. In order to limit confusion and ensure ease of delivery, the location and class period during which students were solicited and administered questionnaires was kept consistent (same classroom, same time). The solicitation process consisted of research assistants entering the classroom, briefly outlining the purpose of the study and the subsequent incentives available to participants. Rewards for participation were served in the form of soft drinks and light snack food. In some instances, at that time, students were reminded verbally as well as through printed handouts (secured in envelopes) that both parental consent and student assent were necessary for participation. It was requested that students who were interested in the study return signed parental consent forms to their respective teachers at the earliest date possible. Research assistants collected consent forms from teachers and conducted follow-up recruitment sessions in the weeks prior to the study.

Overall, 816 ninth grade students from three central Kentucky area high schools were asked to complete a battery of questionnaires. Once parental consent was collected the participants were randomly assigned to groups of 20 students in their respective school. These 'groups' were used to construct lists for use with the Social Relationship

Questionnaire (SRQ). More specifically, the SRQ asked students to assess the social and behavioral characteristics of peers. Within several weeks of collecting parental consent forms, an administration date was scheduled. It was requested by all participating schools that the administration take place during a regular class period. On the day of study, the researchers verbally informed participants of their rights (e.g., to revoke their own assent as well as their right to discontinue at any time) and confidentiality associated with research studies. With regard to the latter, the researchers told participants that their anonymity was of the utmost importance and would be maintained through specialized numerical codes. This was of particular importance given the sensitive nature of sociometric research. Numbered packets were then dispersed which included a set of instructions, a student consent form and questionnaire booklet. Upon obtaining written assent, the researchers administered the instruments (in counterbalanced order) within the classrooms. In order to limit disruptions and other extraneous variables, students were instructed to sit at least two seats apart from one another and refrain from sharing results. Further, at least one trained research assistant and a teacher/administrator were stationed at each testing location in order to address any questions and monitor students' behavior. Students were given approximately 50 minutes to complete their questionnaires. Once the contents were returned to the examiner, participants received their incentive.

### **Data Analysis**

Signed consent forms were removed from questionnaire packages to ensure anonymity of the data. Participants' completed questionnaires were then assigned a specific code number. All survey data were coded and entered into SPSS Version 17.0 for Windows for statistical analysis.

To test all hypotheses, multivariate analyses of variance (MANOVAs) were conducted to examine behavioral differences among perfectionistic subgroups. Post hoc follow-up tests were also used. The independent variable was perfectionistic subtype (maladaptive perfectionists, adaptive perfectionists, and non-perfectionists). The dependent variables were scores for the three BASC-2 subscales (anxiety, depression, and interpersonal relations), the social connectivity composite, GPA, and ratings from two peer informant items taken from the SRQ (social withdrawnness and high academic expectations).

## **Chapter Three: Results**

The following chapter will review the analyses conducted with the current study sample. More specifically, the chapter begins with a discussion of preliminary analyses (i.e., descriptive statistics, internal consistency and data cleaning procedures) completed and is followed by a review of primary analyses (i.e., Pearson correlations, multiple analysis of variance) used to explore associations between measure domains and subsequently potential group differences between perfectionistic subtypes.

### **Preliminary Analyses**

Descriptive statistics for demographic variables (e.g., age, gender, and ethnicity) were produced using frequency, mean, and standard deviation (see Table 1 in Participants section). Similar analyses were also used to examine the distribution of all the variables used in the current study (see Table 3). Outliers were identified using  $z$ -scores, standard deviation values, and box plots. Data exceeding a  $z$ -score of plus or minus 3.29 and data greater than four standard deviations from the mean indicate an outlier (Barnett & Lewis, 1994). Any  $z$ -scores beyond the positive or negative 3.29 value were deleted and any data exceeding four standard deviations were transformed to reflect the next highest value within four standard deviations above the mean. Skewness and kurtosis for all data were within acceptable limits (Meyers, Gamst, & Guarino, 2006), given the large dataset. For example, although some of the BASC-2 variables had larger kurtosis values (Depression = 2.27; Interpersonal Relations = 3.12), both values were deemed acceptable since the sample size was greater than 200 (Tabachnick & Fidel, 2007).

### Reliability of all measures

Internal consistency was established for all of the scales used in the study. The reliability coefficients are listed in Table 3. Internal consistency as measured using Cronbach's alphas was satisfactory (above .80) for all measures (Norusis, 2005). Means, standard deviations, and ranges of scores are also presented. Alpha reliabilities for three variables were not computed as they were measured as individual items (e.g., two SRQ variables, GPA).

Table 3

*Reliability Coefficients, Means, Standard Deviations, and Ranges*

Measure	Alpha	Mean	Standard Deviation	Min	Max
<b>BASC-II</b>					
Anxiety	.90	51.06	12.31	32.00	88.00
Depression	.90	48.54	10.92	40.00	87.00
Interpersonal Relations	.80	50.14	9.86	40.00	86.00
<b>APS-R</b>					
Discrepancy	.90	42.82	14.72	12.00	84.00
Standards	.85	38.83	7.55	14.00	49.00
SRQ – High academic expectations	----	0.54	0.30	0.00	1.00
SRQ – Socially withdrawn	----	0.25	0.22	0.00	1.00
GPA	----	2.97	0.79	0.32	4.00

*Note.* BASC-II = Behavior Assessment System for Children. APS-R = Almost Perfect

Scale-Revised. SRQ = Social Relations Questionnaire. GPA = Grade Point Average.

As a means for assessing possible significant differences for the outcome variables at the school level an analysis of variance was completed. A comparison of anxiety, depression, interpersonal relations, grade point average, social connectivity, peer rated high academic expectations and social withdrawnness between the three schools sampled, resulted in no significant differences being found,  $F(14,1060) = .34, p > .05$ . Similarly, an analysis of variance regarding gender also produced non-significant findings,  $F(7,529) = 1.63, p > .05$ . A final analysis of variance to determine potential

differences among the outcome variables in relation to ethnicity yielded comparable findings,  $F(7,522) = .76, p > .05$ . (See Table 1 for participant characteristics by school).

### **Primary Analyses**

Pearson correlation tests were conducted to examine the relationships between all the variables of interest (See Table 4). A Bonferroni procedure was completed in order to reduce the likelihood of a Type I error ( $p < .001$ ). As expected, significant inverse correlations were found between the BASC-II subscales, suggesting discriminant validity. That is, the adaptive subscale (e.g., interpersonal relations) was inversely correlated with the clinical subscales (e.g., anxiety and depression). Significant positive correlations were also found between anxiety and depression, suggesting convergent validity. In sum, these findings were in line with existing research studies employing a large portion of these variables (e.g., Bell-Dolan, Reaven, & Peterson, 1993; Gilman & Anderman, 2006; Newman, Newman, Griffen, O'Connor, & Spas, 2007).

Table 4

*Correlation Matrix*

Variable	1	2	3	4	5	6	7	8	9
1. BASC-2: Anxiety	-								
2. BASC-2: Depression	.604***	-							
3. BASC-2: Interpersonal Relations	-.394***	-.519***	-						
4. GPA	-.063	-.306***	.181***	-					
5. SRQ: Withdrawnness	.043	.070	-.255***	-.089*	-				
6. SRQ: High Academic Expectations	.029	-.157***	.102**	.490***	-.075*	-			
7. Age	.023	.130***	-.072*	-.232***	.012	-.169***	-		
8. APS-R: Discrepancy	.514***	.547***	-.403***	-.253***	.043	-.120***	.084*	-	
9. APS- R: Standards	-.090*	-.280**	.235**	.534***	-.142***	.348***	-.098**	-.139***	-
10. Social Connectivity Composite	.344***	.432***	-.586***	-.088*	.785***	-.070	.033	.250***	-.139***

Note: BASC-2 = Behavioral Assessment Scale for Children 2<sup>nd</sup> Edition, GPA = Grade Point Average, SRQ = Social Relationship

Questionnaire, APS-R = Almost Perfect Scale-Revised

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



## Group Differences Among Perfectionist Subtypes

Hypothesis one was tested via a MANOVA using the independent variable of perfectionistic subtype (maladaptive perfectionists, adaptive perfectionists, and non-perfectionists). This hypothesis examined differences in perfectionistic subtype on the dependent variables of anxiety, depression, interpersonal relations, social connectivity and GPA. Hypothesis 1a predicted that maladaptive perfectionists would report higher anxiety and depression scores than adaptive perfectionists and non-perfectionists. Additionally, hypothesis 1b predicted that maladaptive perfectionists would report lower scores on interpersonal relations and social connectivity than adaptive perfectionists and non-perfectionists. Finally, hypothesis 1c predicted that both maladaptive and adaptive perfectionists would report a higher GPA compared to non-perfectionists.

Using Pillai's Trace, a small multivariate main effect was significant for perfectionistic subtype on the dependent variables,  $V = .394$ ,  $F(10, 1020) = 24.99$ ,  $p < .001$ , partial  $\eta^2 = .197$ . To protect against Type I error, a Bonferroni-corrected  $\alpha = .01$  was used for between subjects follow-up tests. All five univariate ANOVAs indicated that perfectionistic subtype was significantly related to the study variables of anxiety, depression, interpersonal relations, social connectivity, and GPA. However, these effects were small in magnitude. Means, standard deviations,  $F$  statistics, and effect size are displayed in Table 5.

Bonferroni post-hoc tests were conducted to further examine the differences between perfectionistic subtypes on the five dependent variables, using a Bonferroni correction of  $p < .0125$ . See Table 5 for the post-hoc comparisons of means. Results revealed significant differences between all three groups for the dependent variable

anxiety. That is, adaptive perfectionists scored significantly lower ( $M = 45.94, SD = 8.48$ ) on anxiety scores than maladaptive ( $M = 55.41, SD = 12.36$ ) and non-perfectionists ( $M = 50.24, SD = 11.36$ ). Further, maladaptive perfectionists scored significantly higher on anxiety as compared to adaptive and non-perfectionists. For the dependent variable of depression, adaptive perfectionists scored significantly lower ( $M = 43.19, SD = 4.03$ ) than maladaptive ( $M = 51.13, SD = 9.87$ ) and non-perfectionists ( $M = 49.85, SD = 9.98$ ). However, there were no significant differences between maladaptive perfectionists and non-perfectionists on depression scores.

Further results indicated that adaptive perfectionists differed significantly on interpersonal relations scores ( $M = 55.39, SD = 6.27$ ) as compared to their maladaptive ( $M = 51.41, SD = 8.35$ ) and non-perfectionist counterparts ( $M = 52.08, SD = 8.08$ ). However, there was no significant difference between maladaptive perfectionists and non-perfectionists. Similarly, for the social connectivity variable, adaptive perfectionists differed significantly ( $M = -0.299, SD = 0.58$ ) as compared to their maladaptive ( $M = -0.001, SD = .63$ ) and non-perfectionist counterparts ( $M = -0.085, SD = 0.62$ ). However, there was once again no significant difference between maladaptive perfectionists and non-perfectionists on social connectivity.

Additionally, the analyses revealed that there were significant differences for all three groups on the dependent variable of GPA. More specifically, adaptive perfectionists reported a significantly higher GPA ( $M = 3.42, SD = 0.58$ ) when compared to maladaptive perfectionists ( $M = 3.06, SD = 0.68$ ) and non-perfectionists ( $M = 2.55, SD = 0.71$ ). Further, maladaptive perfectionists reported a significantly higher GPA as compared to non-perfectionists.

Table 5

*Means, Standard Deviations, and Effect Size of Perfectionistic Subtype on Anxiety, Depression, Interpersonal Relations, Social Connectivity and GPA*

	Means (SD)			F	partial $\eta^2$
	Adaptive Perfectionist <i>n</i> = 202	Maladaptive Perfectionist <i>n</i> = 151	Non- Perfectionist <i>n</i> = 163		
Anxiety	45.94 (8.48) <sup>a</sup>	55.41(12.36) <sup>b</sup>	50.24(11.36) <sup>c</sup>	34.15*	.12
Depression	43.19 (4.03) <sup>a</sup>	51.13 (9.87) <sup>b</sup>	49.85 (9.98) <sup>b</sup>	50.00*	.16
Interpersonal Relations	55.39 (6.27) <sup>a</sup>	51.41 (8.35) <sup>b</sup>	52.08 (8.07) <sup>b</sup>	14.71*	.05
Social Connectivity	-.30 (.57) <sup>a</sup>	-.00 (.63) <sup>b</sup>	-.08 (.64) <sup>b</sup>	11.42*	.24
GPA	3.42 (.58) <sup>a</sup>	3.06 (.68) <sup>b</sup>	2.55 (.71) <sup>c</sup>	80.96*	.04

*Note.* *df* for each univariate *F* test was 2, 513. Superscripts denote which groups are significantly different by variable. Anxiety, depression, and interpersonal relations are displayed as *t*-scores. Social connectivity is displayed as *z*-scores. Lower scores are indicative of adaptive functioning on the Anxiety, Depression and Social Connectivity subscales. Conversely, lower scores represent maladaptive outcomes across the Interpersonal Relations and GPA domains.

\*  $p < .001$

Hypotheses two used perfectionistic subtype as the independent variable and two peer-reported items from the SRQ as dependent variables: social withdrawnness and high academic expectations. Hypothesis two predicted that peers would view maladaptive perfectionists differently than their non-perfectionist and adaptive perfectionist counterparts. Specifically, maladaptive perfectionists would be seen by their peers as

possessing high academic expectations, but would be viewed as socially withdrawn compared to the non-perfectionists and adaptive perfectionists.

Using Pillai's Trace, a multivariate main effect was significant for perfectionistic subtype on the dependent variables,  $V = .098$ ,  $F(4, 1462) = 18.78$ ,  $p < .001$ , partial  $\eta^2 = .049$ . To protect against Type I error, a Bonferroni-corrected  $\alpha = .025$  was used for between subjects follow-up tests. Only one univariate ANOVA was significant, indicating that perfectionistic subtype influenced the degree to which peers rated participants own academic expectations. Significant differences were found between all three groups on the dependent variable of high academic expectations. That is, adaptive perfectionists scored significantly higher ( $M = 0.32$ ,  $SD = 0.90$ ) on high academic expectation scores than maladaptive ( $M = 0.08$ ,  $SD = 0.97$ ) and non-perfectionists ( $M = -0.40$ ,  $SD = 0.96$ ). Further, non-perfectionists scored significantly lower on high academic expectations as compared to adaptive and maladaptive perfectionists. However, these effects were small in magnitude. Means, standard deviations,  $F$  statistics, and effect size are displayed in Table 6.

Table 6

*Means, Standard Deviations, and Effect Size of Perfectionistic Subtype on Peer Reported High Academic Expectations and Social Withdrawnness*

	Means (SD)			F	partial $\eta^2$
	Adaptive Perfectionist <i>n</i> = 263	Maladaptive Perfectionist <i>n</i> = 230	Non-Perfectionist <i>n</i> = 241		
High Academic Expectations	0.32 (0.90) <sup>a</sup>	0.08 (0.97) <sup>b</sup>	-0.40 (0.96) <sup>c</sup>	37.74*	.09
Social Withdrawnness	-0.15 (0.91) <sup>a</sup>	-0.43 (0.91) <sup>a</sup>	-0.18 (0.97) <sup>a</sup>	2.22	.01

*Note.* *df* for each univariate *F* test was 2, 731. Superscripts denote if groups are significantly different by variable. High academic expectations and social withdrawnness are shown as *z*-scores.

\*  $p < .025$

## **Chapter Four: Discussion**

This following chapter provides an overall summary of the present research, discusses specific findings from the study, identifies existing limitations, and highlights implications stemming from the present study. Additional discussion regarding suggested directions for both future practitioners and researchers concludes this chapter.

### **Overall Summary**

The current study explored psychological (i.e., anxiety, depression) and psychoeducational (i.e., GPA, high academic expectations) outcomes associated with multidimensional forms of perfectionism. This study built on the existing literature focusing on adolescent populations (Rice et al., 2011; Rice & Slaney, 2002; Vandiver & Worrell, 2002; Wang, et al., 2009; Wong, Chan, & Lau, 2010) and extended the findings to include psychosocial outcomes (i.e., interpersonal relationships, social withdrawal), an area oft overlooked in the perfectionism literature. An additional purpose and distinctive feature of this research was to combine peer informant ratings along with self-report measures of functioning (i.e., social connectivity).

The novel nature of the study addressed a number of important areas. First, the study supported recent conceptualizations of perfectionism as a multidimensional construct consisting of both adaptive and maladaptive domains. More specifically, significant differences were noted on both an intergroup (perfectionist vs. non-perfectionist) and intragroup (maladaptive vs. adaptive perfectionist) basis. These disparities among cluster groups are meaningful because they suggest that a variation of outcomes (i.e., healthy and unhealthy) can be associated with one's perfectionistic classification (e.g., non-perfectionist, maladaptive perfectionist, adaptive perfectionist).

This is important because it once again challenges the conventional notion of perfectionism as a unidimensional construct where only deleterious outcomes are obtained. Second, while considerable attention has been given towards mental health outcomes (depression, anxiety, etc.), this study focused on peer perceptions of social connectivity and academic standards. Research within this area is important as it provides additional insight into the lives of perfectionists given that the perceptions students have toward their perfectionistic classmates are generally not understood. Third, the present study explored an array of variables that may significantly influence long-term functioning (e.g., mental health, academic performance, social connectivity). This is particularly salient given the substantial identity formation which occurs during adolescence and its subsequent impact on adult development.

In line with previous research (Bieling et al., 2004; Chang, 2006; Stoeber, Hutchfield, & Wood, 2008), overall findings indicated that adaptive perfectionists were associated with the most positive psychological, psychoeducational, and psychosocial outcomes. Conversely, maladaptive perfectionists were revealed to be related to several but not all undesirable outcomes. As such, this study served as a good foundation for future research hoping to explore multidimensional perfectionism in a more comprehensive fashion. Additional details on the specific findings are discussed below.

### **Summary of Specific Findings**

Partial support was found for hypothesis 1a, in relation to anxiety and depression. More specifically, as expected, maladaptive perfectionists reported significantly greater levels of anxiety as compared to both remaining perfectionistic subtypes. Moreover, significant differences were also revealed between non-perfectionists and adaptive

perfectionists, with the latter reporting the lowest levels of anxiety. The above findings were consistent with those found in previous studies that have used both adult and adolescent populations (Gnilka, Ashby, Noble, & 2012; Rice & Slaney, 2002; Sironic & Reeve, 2012). An unexpected finding was that despite the maladaptive perfectionistic group having the highest depression scores they were only significantly different from adaptive perfectionists. That is, there was no significant effect between the maladaptive group and those identified as non-perfectionists. Similarly, non-perfectionists were significantly different from adaptive perfectionists, with adaptive perfectionists once again reporting the lowest depression scores. This surprising finding is contrary to previous studies which have often identified maladaptive perfectionists as yielding the greater degree of internalizing problems as compared to non-perfectionists (Slaney, Pincus, Uliaszek, & Wang, 2006; Wong et al., 2010). Several recent studies have offered some possible explanations for this finding. For example, Rice et al., (2011) explored the existing classification methods for delineating perfectionistic subtypes and reported that while a three factor solution (i.e., Adaptive, Maladaptive, Non-Perfectionists) remains valid, a four cluster solution may yield more accuracy. More specifically, they noted that a closer examination of non-perfectionists revealed two subgroups with significantly different characteristics, with one appearing somewhat similar to maladaptive perfectionists. Although this group did not report elevated high standards, they shared the same levels of negative self-evaluation (i.e., Discrepancy) typically seen among maladaptive perfectionists and thus were not explicitly identified using the traditional three cluster solution. If this explanation is valid, then the current study's findings may have been skewed by the lack of distinction between these two groups. Interestingly,



adaptive perfectionists, who reported the lowest levels of internalizing behaviors, also reported the greatest levels of social functioning as compared to maladaptive and non-perfectionists.

Partial support was also found for hypothesis 1b, such that maladaptive perfectionists had the poorest overall social functioning scores when compared to adaptive and non-perfectionists. Although there were no significant differences between maladaptive perfectionists and non-perfectionists, maladaptive perfectionists did have significantly lower scores on interpersonal relations and social connectivity as compared to adaptive perfectionists. As mentioned above, adaptive perfectionists perceived their own peer relationships as significantly more positive than their peers, a finding which is consistent with existing literature. Recent studies have offered some insight into some of the variables which may contribute toward the separation of adaptive and maladaptive perfectionists in the social domain. For example, Laurenti, Bruch, and Haase (2008) note that maladaptive perfectionists, particularly ones with the highest levels of self-criticism reported the most elevated levels of social anxiety. Moreover, given that high self-criticism is a hallmark of maladaptive perfectionism, it has been suggested that this group may be especially sensitive to critiques from others (Gilbert, Durrant, & McEwan, 2006). Therefore, they may choose to avoid participating in any interactions or activities where a possibility of failure may exist (Gilman & Ashby, 2006). This holds particularly true for many maladaptive perfectionists who have been identified as having poorer coping resources (Nounopoulos et al., 2006; Weiner & Carton, 2012) and who are subsequently more catastrophic in their thinking regarding the consequences of their failures. Additionally, while not measured by the current study it can be speculated that increasing

participation in group activities may leave these students more vulnerable to social evaluation, thus strengthening their avoidant behavior. This may provide obstacles toward connecting with peers or feeling socially accepted.

While it was surprising that there were no significant differences between maladaptive and non-perfectionists, it could be speculated once again that the classification of perfectionism in the present study may have been too broad. That is, the aforementioned four factor solution may have been more influential on the outcomes of the current research question. More specifically, similarity between the high discrepancy subgroup (pure evaluative concerns) which exists among non-perfectionists and their maladaptive perfectionistic counterparts may have unknowingly distorted the data by eliminating any potential significant differences between these two groups.

For hypothesis 1c, results regarding self-reported GPA were found to be in the expected direction. As predicted, perfectionists (both adaptive and maladaptive) identified having a significantly higher self-reported GPA as compared to non-perfectionists. A closer look at the findings also revealed that the adaptive cluster significantly differed from the maladaptive cluster on this domain. Overall, adaptive perfectionists were noted to be the best academic performers, followed by maladaptive perfectionists and finally non-perfectionists. These findings continue to support the notion that the setting of high standards, a central tenant of perfectionism, can result in favorable academic outcomes, as detailed by a myriad of previous studies (Rice et al., 2011; Hanchon, 2011; Leenaars & Lester, 2006; Stoeber & Kersting, 2007). Therefore, allowing children to set high standards/high expectations can be beneficial within the academic domain. Nevertheless, this research also suggests that how youth cope with

their perceived failures is the crucial element which prevents or exacerbates the development of internalizing difficulties. As a result, harnessing healthy forms of perfectionistic striving will be an important goal for future educators while teaching youth to avoid elevated performance “discrepancy” and its associated risk factors (e.g., mental health indicators, life satisfaction, social functioning).

### **Peer Reported Findings**

A unique aspect of this study was the combination of peer and self-report methods. It was hoped that the convergence of both perspectives would offer a more comprehensive view of behavioral and interpersonal tendencies of perfectionistic adolescents. Regarding peer reported behaviors, the results were mixed. Results did support the fact that peers were able to distinguish students who set high academic standards for themselves, however, contrary to the proposed hypothesis 2, adaptive perfectionists were found to be identified most often as having high academic expectations, followed by the maladaptive and non-perfectionist clusters. These findings suggest that while peers are able to identify perfectionists accurately, the high academic expectations that adaptive perfectionists set for themselves are generally most observable to their peers. In her study of gifted college students, Neumeister (2004) determined that a key distinguishing characteristic between maladaptive and adaptive perfectionists was their motivation style. Maladaptive perfectionists were deemed to have generally operated from a performance orientation style that was primarily concerned with one’s performance in contrast to those around them and resulted in a ‘fear of failure motivation’. On the contrary, adaptive perfectionists employed a mastery goal orientation approach which focused on personal excellence and improvement. The fear of failure exhibited by

maladaptive perfectionists was found to most often result in this group displaying avoidant behaviors such as not raising their hands unless they were sure they had a correct response (e.g., for fear of looking unintelligent) and various forms of procrastination.

The above findings may explain why adaptive perfectionists were most readily identified by their peers. Namely, if the adaptive cluster group is comprised of individuals who regularly speak up in class, participate in a wide range of group activities, prepare in advance and demonstrate a strong work ethic, it is understandable why they may be much more noticeable to their peers and therefore be rated by their classmates as having the highest academic expectations. Other research has demonstrated similar results related to goal orientation among Chinese school-aged youth (Chan, 2009); college students (Speirs Numeister & Finch, 2006) and elite athletes across the lifespan (Gucciardi, Mahoney, Jalleh, Donovan, & Parkes, 2012; Stoeber, Stoll, Pescheck, & Otto, 2008).

The final set of findings pertained to peer informant ratings of social withdrawal. Results did not reflect those expressed in hypothesis 2 as no significant differences were found between cluster groups. These findings would appear to suggest that one's degree of social withdrawal is not influenced by one's respective perfectionistic or non-perfectionistic classification. Despite having a greater degree of anxiety and poorer self-reported interpersonal relationships, maladaptive perfectionists were not perceived by their peers to exhibit more socially withdrawn behaviors than others. While this outcome conflicts with prior findings, a recent shift in adolescent social communication patterns may offer an explanation for these unexpected findings.

A noteworthy feature of the social milieu in the new millennium is the availability of newfound communication tools that offer easy and immediate access to large online social groupings (Manago, Taylor, & Greenfield, 2012). In particular, websites such as Facebook have become so pervasive that it is estimated that as high as 90% of youth use it (Brenner, 2012; Lampe, Ellison, & Steinfield, 2006), often visiting these sites more than five times daily, (Junco, 2012a, b). Furthermore, contemporary research has noted middle school students having an average of 196 *friends* (i.e., social networking contacts), rising to over 300 peers by the time a student completes high school (Ellison, Steinfield, & Lampe, 2011; Espinoza & Juvonen, 2011). Not surprisingly, these recent advents in technology and social media have led to an environment where youth rely less on face-to-face interactions with increasing emphasis on virtual environments (Henry, 2010).

Some research has purported that technologically based forms of social communication may be a way to escape or avoid challenging face-to-face dealings for individuals experiencing social anxiety and depression (Campbell, Cumming, & Hughes, 2006; Desjarlais & Willoughby, 2010; Shepherd & Edelman, 2005). This holds particularly true for individuals who are critical of their abilities and social skills (Segrin & Flora, 2000). As an extension of this notion, an interesting speculation could be that maladaptive perfectionists are using social networking sites in a similar fashion due to their aforementioned high self-criticism and tendency to exhibit elevated levels of social anxiety and depression. One of the potential advantages for using social networking sites is that one can control the flow and type of information that you disclose to others, such as one's successes and failures. This idea may be something a maladaptive perfectionist

could find desirable given their tendency to adopt a performance goal orientation (Chan, 2009; Stoeber et al., 2008).

Given the current study's findings that peers did not distinguish any of the groups on social withdrawnness, it can be speculated that the size of one's virtual social network (e.g., Facebook friends) may have skewed classmates' opinions on who was connected or not (i.e., withdrawn). For example, it can be very difficult to truly measure the quality of digital relationships as it is likely that the majority of online "friendships" more closely reflect distant relationships (Espinoza & Juvonen, 2011). As such, the shifting trend toward communication technologies presents interesting implications for future sociometric research.

### **Limitations**

The present study furthered the research literature regarding various positive and negative psychosocial correlates associated with adolescent perfectionism and extended findings to include a combination of self- and peer-reports. While the current methodology offered a unique perspective for perfectionism researchers, there are several limitations that should be noted. Although attempts were made to obtain the most heterogeneous sample possible, caution should be taken in generalizing results from this study toward other groups not examined. The current sample was comprised of primarily Caucasian adolescents from one state. Moreover, while the sample did represent some varied population density and socioeconomic backgrounds, the three schools involved still fell within an approximately 70 mile radius of the researcher's affiliated university. As such, it is likely inappropriate to generalize these results to minority populations as well as different geographical regions

An additional methodological limitation involves the use of a cross-sectional research design. While the current study adds to the field of existing literature, the findings only present a snapshot of the participants and fail to fully explore the degree to which perfectionism and its associated psychosocial outcomes evolve.

Several limitations are noted regarding the measures used in the current study. First, while the APS-R continues to garner empirical support as a measure of perfectionism for adolescents, the traditional three cluster solution (i.e., adaptive, maladaptive and non-perfectionists) used to classify students has recently been questioned. More specifically, the latest research has pointed toward more progressive categorizations of non-perfectionists which yield greater specificity between those who are high in self-criticism and those who are not (Rice et al., 2011; Sironic & Reeve, 2012). As mentioned earlier, investigative findings have noted a similarity in behaviors and various psychosocial outcomes between non-perfectionists with high-levels of self-criticism and their colleagues with low levels of discrepancy. It is currently unknown whether or not the use of a three cluster solution for the current study may have clouded the sample of students who did not hold exceptionally high standards for themselves.

Another challenge which emerged was that while the SRQ has traditionally been used in smaller, self-contained classrooms involving strong participation rates, this approach could not be implemented given the scope of this study. In particular, participants were unable to be rated by their entire cohort due to the much larger population employed in this study. While random assignment allowed participants the chance to be rated the same amount of times, it nevertheless restricted the total volume of ratings provided by fellow peers. As such, it may have influenced the subjects' overall

scores related to these peer-informant items. Furthermore, the approach utilized did not assess the degree to which informants were familiar with one another.

The methods used to collect peer report data also contained several drawbacks. Using single items from the SRQ offered a novel vantage point within the high school domain, however, the reliability and validity of such items are likely not as strong as multi-item measurements. For instance, the single SRQ item labeled “who seems socially withdrawn?” leaves some doubt as to what represents “withdrawn” behaviors, leading to a more challenging interpretation of the findings. It was also noted that very weak correlations existed between the informant rated SRQ items (i.e., social withdrawal, high academic expectations) and the self-reported mental health indicators (i.e., anxiety, depression). A potential reason for this finding could be that some research has suggested that self-other reports have shown low convergence on subjective internalizing behaviors, implying that peers fail to identify the overt signs related to unhealthy internal functioning (Achenbach, McConaughy, & Howell, 1987; Edwards, 2005). Consequently, the present data should be interpreted with caution.

Finally, the method in which GPA was gathered could be a potential limitation due to being self-reported. While, Zimmerman, Caldwell, and Bernat (2002) state that self-reported GPA may still hold validity when collected anonymously, as was the case in the present study, in contrast, it can be argued that students may have inaccurately reported their academic standing in order to remain socially desirable. In line with this notion, Dobbins, Farh, and Werbel (1993) noted that students may be more likely to inflate their GPA on a research survey as opposed to a job application form.



Unfortunately, access to school performance records was not granted, therefore we could not verify the accuracy of the data related to GPA.

In summary, a number of limitations emerged from the current study. However, given the innovative research design and respective size of the study, these drawbacks are not believed to have undermined the value of the data. Although future researchers may face a number of obstacles in hopes of improving upon this research design, consideration should be given to the statements above.

### **Future Directions**

Future directions to consider include additional research that may be needed to determine whether differences in cultural norms may impact participant responses, especially with regard to peer report data. Preliminary examinations of European and Asian countries utilizing peer report methodologies found differences in how adolescents perceive their peers' withdrawal behaviors stemming from cultural norms (see Chen & French, 2008 for review). Future researchers may wish to employ more diverse samples as well as a longitudinal design that follows youth from the early stages of high school until college-age. Moreover, a consideration that warrants mentioning and which may be used to guide future studies is the continued inclusion of peer report data through a longitudinal design. The current study was unable to assess whether or not the lack of differences noted between perfectionistic clusters on social withdrawnness was partly due to the lack of exposure students had with one another. Given the high school freshmen sample used for this study, many of the participants had likely only had the opportunity to be acquainted with one another for six to eight months. A longitudinal exploration of youth which follows participants at different time points throughout their college tenure

may reveal an evolution of peer reported social withdrawal among perfectionistic clusters. These additional data points may provide a greater level of reliability and validity for peer ratings which more closely align with sociometric studies done with younger students (i.e., primary school settings) who spend the majority of their days with one another.

An additional consideration and direction for future research is related to the classification of perfectionism. Given that research has recently offered an alternative cluster solution for perfectionism (Rice et al., 2011; Sironic & Reeve, 2012) replication of such studies may be necessary to develop a more effective classification system. Future studies may also wish to focus on both adolescent and adult aged samples in order to determine if the aforementioned four cluster solution is supported and therefore extended to other populations.

Although the use of a single-item indicator reduced the time needed to complete the surveys, multi-item measurements may be an appropriate direction for future studies. Therefore, forthcoming investigations may wish to continue to incorporate peer with self-reports on the condition that peer report measurements are more comprehensive. Similarly, although peer-informant ratings were beneficial in attempting to identify adolescent perfectionists, future studies may wish to create a multi-item survey for students nominated as having exceptionally high standards. These items could further explore “yes” nominations by expanding on specific behaviors such as the degree of discrepancy an individual experiences. Moreover, if items more closely paralleled those used in the APS-R, it may lend additional validity to the research. While the above discusses future directions for researchers, the current study also yields a number of

important clinical implications for students and professionals within the educational domain.

### **Implications for Educators and Professionals**

One of the interesting findings in this study was related to the insignificant differences found between maladaptive perfectionists and non-perfectionists on depression. As mentioned previously, a very recent study by Rice et al., (2011) suggested that the use of a four cluster solution may better delineate subgroups by specifying intergroup differences among non-perfectionists. In this model, non-perfectionists were comprised of a low standards and low discrepancy group as well as a unique subset that reported low standards but very high discrepancy scores. In recent months, Sironic and Reeve (2012) replicated this study using a sample of Australian adolescents to reveal a similar subgroup of non-perfectionists. The authors suggested that the participants' behaviors were somewhat paradoxical given that students ranked themselves as low on high standards while reporting their perceived failure to meet their high standards (i.e., low on Standards subscale, high on Discrepancy subscale). Results from this study showed that this group displayed the highest levels of psychopathology, closely followed by maladaptive perfectionists. Moreover, they found that maladaptive perfectionists were associated with poorer outcomes as compared to their adaptive counterparts. Nevertheless, it was suggested that maladaptive perfectionists' standards may have served as a potential buffer given that they were found to have better self-regulation strategies than the low standards, high criticism, non-perfectionistic group.

The interpretation of the current study's results in relation to the above mentioned investigations pose several implications given the insignificant differences between

maladaptive and non-perfectionists on a mental health indicator such as depression. More specifically, it may suggest that the construct of “discrepancy” or self-criticism (measured here as one’s dealing with perceived failures) is a vital indicator of psychosocial functioning. In addition, it further supports the healthy outcomes which can stem from setting high standards. As a result, it may mean that less emphasis should be placed on the holding of high standards as a potential risk factor for detrimental outcomes while highlighting the importance of discrepancy as an impending hazard. Despite these possibilities, follow up studies are needed to better understand the perfectionistic and non-perfectionistic population.

As such, future researchers and professionals working with these students might benefit from learning how to identify this fourth cluster in order to distinguish them from their non-perfectionistic peers so that they can assist them more effectively. Practical implications could include the administration of questionnaires by school counselors to at-risk students (i.e., maladaptive perfectionists, non-perfectionists with high self-criticism). Given that these youth are largely misunderstood or ignored, workshops aimed at training professionals to better recognize and support students who demonstrate these thoughts and behaviors may be beneficial. Similarly, additional workshops could be tailored for students that aim to correct their catastrophic thinking and instead promote adaptive coping skills (e.g., self-regulation strategies). While there is a paucity of formal treatment protocols targeting maladaptive perfectionists, cognitive behavioral therapists have suggested some practices for helping students reshape their cognitive distortions into healthy perceptions (LaSota, 2008; Riley, Lee, Cooper, Fairburn, & Shafran, 2007). That is, these strategies should attempt to target specific distortions that influence the

misperceptions of self-set standards and those perceived to be placed on them either through counseling or behavioral exposures aimed at providing clients genuine feedback (Laurenti et al., 2008). This is particularly salient as high school students are at a critical developmental period with literature noting that perfectionism and many psychopathologies tend to emerge during mid-to later-adolescence and may persist throughout adulthood (Sironic & Reeve, 2012; Flett et al., 2002). For these reasons, rather than stressing the complete elimination of perfectionistic striving, educators and mental health professionals should explore ways to aid youth in developing and honing skills that buffer their perceived faults and failures.

Additional implications arise from the peer rated item of social withdrawal and subsequently the social connectedness composite. According to Henry (2012), the ongoing trend toward digital environments may pose implications for how we assess students' sense of belonging and social connectedness within the academic environment. This is particularly relevant given that self-reports from the current study of social functioning were incongruent, namely with adaptive perfectionists showing greater interpersonal functioning. As such, it is unknown to what extent peers' perceptions of their classmates were skewed by contemporary forms of virtual interaction. Educators and practitioners will need to better understand digital natives in this this new age to improve communication and connectedness between adolescent students. An increased understanding of this new social milieu may be beneficial given that findings continue to suggest that poor connectivity or social belongingness can produce long-term psychological and psychosocial repercussions (Asher & Paquette, 2003; Bagwell,

Newcomb, & Bukowski, 1998; Pelkonen, Marttunen, & Aro, 2003; Pedersen, Vitaro, Barker, & Borge, 2007; Rubin, Bukowski, & Parker, 1998).

Even though the study's results did not consistently align self and peer ratings, using peer reports to inform psychosocial functioning may still be helpful. The use of more comprehensive peer informant measures would allow for a fuller picture about adolescents' internalizing and externalizing behaviors. If the addition of peers is able to provide a more accurate description of phenomena (i.e., withdrawal) it can shed more light on specific experiences of the individual (Kamphaus et al., 2003). As such, educators and professionals' alike can determine whether cognitive distortions exist, create better treatment protocols, and understand how students' behaviors can impact their peers.

## **Appendix A**

### **Behavior Assessment System for Children, Second Edition (BASC-2)**

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BEHAVIOR ASSESSMENT SYSTEM FOR CHILDREN, SECOND EDITION (BASC-2)

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## Appendix B

### Almost Perfect Scale-Revised (APS-R)

The following items are designed to measure attitudes people have towards themselves, their performance, and towards others. For the following items, please respond as honestly as possible without discussing them with your peers. There are no right or wrong answers.

---

**Circle the number that best describes how you feel about each statement.**

---

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

---

- I have high standards for my performance at work or at school  
1            2            3            4            5            6            7
- I often feel frustrated because I can't meet my goals  
1            2            3            4            5            6            7
- If you don't expect much of yourself you will never succeed  
1            2            3            4            5            6            7
- My best just never seems good enough for me  
1            2            3            4            5            6            7
- I have high expectations for myself  
1            2            3            4            5            6            7
- I rarely live up to my high standards  
1            2            3            4            5            6            7
- Doing my best never seems good enough  
1            2            3            4            5            6            7



8. I set very high standards for myself  
1            2            3            4            5            6            7
9. I am never satisfied with my accomplishments  
1            2            3            4            5            6            7
10. I expect the best from myself  
1            2            3            4            5            6            7
11. I often worry about not measuring up to my own expectations  
1            2            3            4            5            6            7
12. My performance rarely measures up to my standards  
1            2            3            4            5            6            7
13. I am not satisfied even when I know I have done my best  
1            2            3            4            5            6            7
14. I am seldom able to meet my own high standards for performance  
1            2            3            4            5            6            7
15. I try to do my best at everything I do  
1            2            3            4            5            6            7
16. I am hardly satisfied with my performance  
1            2            3            4            5            6            7
17. I hardly ever feel that what I've done is good enough  
1            2            3            4            5            6            7
18. I have a strong need to strive for excellence  
1            2            3            4            5            6            7

19. I often feel disappointed after completing a task because I feel I could have done better

1

2

3

4

5

6

7

## Appendix C

### Social Relationship Questionnaire (SRQ)

We are interested in understanding how adolescents view their relationships with their peers. For the following set of questions, a list of students has been provided for you. Please respond to each question either by circling the appropriate number (for question 1), or by checking the appropriate yes/no line (for questions 2-7). **If there is a student that you do not know, simply cross the name out with a pen or pencil.** It is important that you answer as honestly as you can. Your answers will be kept strictly confidential. Only the researchers will see your answers.

Age: \_\_\_\_\_ Gender: \_\_\_\_\_ Race: \_\_\_\_\_

Date: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

List how many of each grade you've had since you've been in high school:

\_\_\_\_\_ A's  
\_\_\_\_\_ B's  
\_\_\_\_\_ C's  
\_\_\_\_\_ D's  
\_\_\_\_\_ F's

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ignored over the internet. *Journal of Social and Personality Psychology*, 79, 748-762. doi:10.1037/0022-3514.79.5.748

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**Vita**  
**ALEX NOUNOPOULOS**

**EDUCATION**

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**Masters of Science and Education Degree in Psychology** 2005  
*University of Kentucky, Lexington, KY*

**Advanced Bachelor of Arts Degree in Psychology** 2003  
*University of Manitoba, Winnipeg, MB, Canada*

**GRADUATE CERTIFICATES**

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**Graduate Certificate in Developmental Disabilities** 2008  
*Interdisciplinary Human Development Institute, University of Kentucky*

**PROFESSIONAL WORK EXPERIENCE**

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**ASD Consultant and Psychometrist** 2011 - 2012  
*Children's Hospital of Eastern Ontario – Autism Program*  
Ottawa, ON, Canada

**Autism Scholar and Research Fellowship** 2010 - 2011  
*University of North Carolina School of Medicine – Division TEACCH*  
Chapel Hill, NC

**CLINICAL EXPERIENCE**

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**APA Pre-Doctoral Clinical Psychology Internship (APPIC)** 2009 - 2010  
*University of North Carolina School of Medicine – Division TEACCH*  
Chapel Hill, NC

**Pre-Doctoral School Psychological Internship** 2008 - 2009  
*Fayette County Public Schools, Lexington, KY*

**Advanced School Psychological Practicum** 2007 - 2009  
*Kentucky Children's Hospital, Pediatric Unit, UK Hospitals*



- Advanced School Psychological Practicum** 2006 - 2007  
*Fayette County Public Schools, Lexington, KY*
- School Psychological Practicum** 2005 - 2007  
*University of Kentucky School Psychology Clinic, Lexington, KY*
- School Psychological Practicum** 2005 - 2006  
*Fayette County Public Schools, Lexington, KY*

#### TEACHING EXPERIENCE

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- Instructor** 2005 - 2007  
*Department of Educational and Counseling Psychology, University of Kentucky*  
 Lexington, KY  
 EDP 203: Teaching Exceptional Students in the Regular Classroom

#### RESEARCH EXPERIENCE

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- Research Assistant** 2008 - 2009  
*for KIDS NOW Initiative, Department of Special Education,*  
*University of Kentucky*
- Senior Graduate Research Assistant** 2007 - 2008  
*for Dr. Rich Gilman, Division of Developmental and Behavioral Pediatrics,*  
*Cincinnati Children's Hospital Medical Center*
- Research Assistant** 2007 - 2008  
*for Dr. Lisa Ruble, Department of Education and Counseling Psychology,*  
*University of Kentucky*
- Research Assistant** Summer 2006  
*Interdisciplinary Human Development Institute,*  
*University of Kentucky*
- Research Assistant** 2004 - 2005  
*for Dr. Rich Gilman, Department of Educational and Counseling Psychology*  
*University of Kentucky*

## SUPERVISION EXPERIENCE

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**Clinic Coordinator** 2006 - 2007  
*UK School Psychology Clinic, University of Kentucky*

## PROFESSIONAL DUTIES

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**Ad-Hoc Reviewer:** Residential Treatment for Children and Youth 2004

## REFEREED PUBLICATIONS

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Gilman, R., Adams, R., & **Nounopoulos, A.**, (2011). The Interpersonal relationships and social perceptions of adolescent perfectionists. *Journal of Research in Adolescence*, 21(2), 505-511.

**Nounopoulos, A.**, Mathai, G., & Ruble, L.A. (2009). An ecological approach to outpatient behavior management services for children with autism spectrum disorders. *Journal of Psychological Practice*. 178-216.

**Nounopoulos, A.**, Ashby, J. S., & Gilman, R. (2006). Coping resources, perfectionism and academic performance among young adolescents. *Psychology in the Schools*, 43, 613-622.

## PEER REVIEWED CONFERENCE PRESENTATIONS

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**Nounopoulos, A.**, Ruble, L.A. & Mathai, G., (2009). *An ecological approach to outpatient behavior management services for children with autism spectrum disorders*. Poster presented at the Canadian Psychological Association annual conference, Montreal, Quebec. Canada.

Ruble, L. A., Usher, E. & **Nounopoulos, A.** (2008, August). *Teaching students with autism: An investigation of teacher self-efficacy*. Poster presented at the American Psychological Association annual conference, Boston, MA.

**Nounopoulos, A.**, & Gilman, R. (2008, February). *Perfectionism and adaptive/maladaptive indicators: Self and peer informant ratings*. Poster presented at the National Association of School Psychologists annual conference, New Orleans, LA.

- Nounopoulos, A.** (2007, March). *Perfectionism: A review of the current literature*. Poster presented at the National Association of School Psychologists annual conference, New York, NY.
- Nounopoulos, A., & Gilman, R.** (2006, June). *Multidimensional perfectionism among adolescents: Differential relationships with gender, race, psychological and psychoeducational variables*. Poster presented at the Canadian Psychological Association annual conference, Calgary, Alberta, Canada.
- Nounopoulos, A., Gilman, R., & Ashby, J.** (2005, June). *The Mediating role of academic confidence in perfectionism*. Poster presented at the Canadian Psychological Association annual conference, Montreal, Quebec. Canada.
- Morry, M. M., Freeman, W., De Alwis U., & **Nounopoulos, A.** (2004, June). *The relation of overprotective caring and authoritarian parenting with imposter feelings*. Poster presented at the Canadian Psychological Association annual conference, St. John's, Newfoundland. Canada.
- Nounopoulos, A., De Alwis, U., Freeman, W., & Zacharias, B.** (2004, June). *Correlates of maladaptive and adaptive dimensions of perfectionism: Depression proneness, guilt, shame and goal orientation*. Poster presented at the Canadian Psychological Association annual conference, St. John's, Newfoundland, Canada.
- Morry, M. M., Kito, M., Harasymchuk, C., **Nounopoulos, A., & De Alwis, U.** (2004, November). *Lay theories of similarity for eight relationship types*. Poster presented at the International Association of Relationship Researcher's biannual conference.
- Nounopoulos, A., De Alwis, U., & Freeman, W.** (2003, April). *Correlates of maladaptive and adaptive dimensions of perfectionism: Depression proneness, guilt, shame and goal orientation*. Poster presented at the Prairie Undergraduate Conference, Winnipeg, Manitoba, Canada.
- De Alwis, U., **Nounopoulos, A., Freeman, W., & Morry, M. M.** (2003, April). *The Imposter phenomenon and three dimensions of parenting: Overprotection, caring, and authoritarianism*. Poster presented at the Prairie Undergraduate Conference, Winnipeg, Manitoba, Canada.

#### INVITED PRESENTATIONS/WORKSHOPS

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2011-2012

#### **Multiple Workshops on Autism Spectrum Disorders**

Topics included Structured Teaching, Anxiety, Applied Behaviour Analysis, Social/Play group construction, etc.

Provided to local school boards (CDSBEO and UCDSB) and staff in the ABA Supports and Services program at the Children's Hospital of Eastern Ontario.

- April 2011 &  
November 2010      **Introduction to High Functioning Autism.**  
As part of the TEACCH HFA workshop for Professionals  
University of North Carolina, Chapel Hill, North Carolina
- March 2010      **Autism Spectrum Disorders: Introduction and Treatment Approaches for Medical Professionals**  
Lecture series to Psychiatry Residents from the University of  
North Carolina-School of Medicine, Chapel Hill, North Carolina.
- November 2008      **Learning Disabilities for the Pediatrician.**  
Medical Education Grand Rounds, College of Medicine,  
University of Kentucky, Lexington, KY.
- November 2008      **Adolescents with Autism Spectrum Disorders: Toward a Brighter Future.** Presentation provided to attendees of the Ohio Valley Society for Adolescent Medicine and Stop Youth Suicide Campaign conference, Lexington, KY.
- September 2007      **An Examination of Student and Teacher Perceptions Toward Bullying, Peer Relations and General Functioning**  
Presentation provided to all faculty at Henry Clay High School, Lexington, KY.
- May 2006      **Bullying in our schools: Data and Strategies for Future Prevention**  
Professional development workshop to Edythe J. Hayes Middle School staff, Lexington, KY.
- November 2005      **Perfectionism among Adolescents: Findings and Implications**  
Colloquium provided to Department of Educational and Counseling Psychology, University of Kentucky.
- November 2005      **High standards among adolescents: Psychoeducational and Psychological Correlates.**  
Presentation provided to counseling faculty at Henry Clay High School, Lexington, KY.

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#### **SIGNIFICANT PROFESSIONAL DEVELOPMENT ACTIVITIES**

**Picture Exchange Communication System (PECS)** 2011  
*Two day workshop/Professional development on ASD treatment*  
Ottawa, ON, Canada

<b>TEACCH Summer Training – Shadow Trainer</b> <i>Shadow training participant for five day professional development on ASD.</i> Chapel Hill, NC	2010
<b>TEACCH Summer Training</b> <i>Five day classroom training/Professional development on ASD treatment.</i> Chapel Hill, NC	2010
<b>Prevent Child Abuse Kentucky</b> <i>Certificate in the Reporting of Child Abuse</i> Lexington, KY	2008
<b>Response to Intervention</b> <i>Professional development for diagnosing and treating learning disabilities</i> Lexington, KY	2008

#### SCHOLARSHIPS/AWARDS

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<b>Socrates Scholarship</b> <i>American Hellenic Educational Progressive Association</i>	2005
<b>Educational and Counseling Psychology Research Award</b> <i>University of Kentucky</i>	2005

#### MEMBERSHIPS

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Student affiliate of the Ontario Association for Behaviour Analysis	2012 - Present
Student affiliate of the American Psychological Association ( <b>APA</b> )	2008 - 2011
Student affiliate of the National Association of School Psych ( <b>NASP</b> )	2004 - 2010
Student member of Kappa Delta Pi (Educational Honor Society)	2005 - 2007
Student affiliate of the Canadian Psychological Association ( <b>CPA</b> )	2003 - 2007
Secretary of the UK Student Association for School Psych ( <b>SASP</b> )	2005 - 2006

Alexander Nounopoulos

May 3, 2013