SOCIETY. INTEGRATION. EDUCATION
Proceedings of the International Scientific Conference. Volume VII, May 24th -25th, 2019. 75-85

THE RELATIONSHIP BETWEEN PERFECTIONISM AND HIGH INTELLECTUAL ABILITIES

Inese Jokste
Rīga Stradiņš University, Latvia

Jeļena Koļesņikova
Rīga Stradiņš University, Latvia

Abstract. *Since the beginning of 1990s, when the first multidimensional concepts of perfectionism were published (see, Frost et al., 1990; Hewitt & Flett, 1990, 1991) there has been a stable increase in the research of perfectionism and its relationships to wide variety of variables, for example, stress (Smith, Saklofske, Yan, & Sherry, 2017), personality traits (Cruce, Pashak, Handal, Munz, & Gfeller, 2012) coping strategies (Gnilka, McLaulin, Ashby, & Alle, 2017). It has to be noted that perfectionism researchers have turned their attention to both general and clinical populations, as well as specific groups, for example, individuals with high intellectual abilities or gifted individuals (e.g., Kornblum & Ainely, 2005; Margot & Rinn, 2016). The paper aims to review the studies focused on relationship between perfectionism and high intellectual abilities, and to see what variables are involved in this relationship. In the first section of the paper concepts and definitions of high intellectual abilities are described. In the second section of the paper perfectionism concepts are described. An in the third section of the paper the relationship between high intellectual abilities and perfectionism is analysed. The results of literature review will serve as theoretical background for studying individuals with high intellectual ability and perfectionistic personality traits.*
Keywords: *high intellectual ability, perfectionism.*

Introduction

Perfectionism is a common personality trait, that may have impact on all areas of life. It is a complex, multidimensional trait that depending on its type and various aspects may be healthy/ positive / adaptive trait or unhealthy, negative/ maladaptive trait (Stoeber & Stoeber, 2009).

There has been interest in intellectual ability and perfectionism relationship mainly focusing on three areas: the *development of perfectionism*, for example, family history models promoting development of perfectionism (Flett et al., 2002), the role of lack of challenge in development of perfectionism (Speirs & Neumeister, 2004; Speirs Neumeister et al., 2007, 2009); the *typologies of perfectionism*, for example, personal standards of gifted students (Kornblum & Ainley, 2005), perfectionism differences among gifted adolescents in regards to

http://dx.doi.org/10.17770/sie2019vol7.3898

gender, birth order, and grade level (Margot & Rinn, 2016), and the *outcomes of perfectionism* focusing on psychological and educational outcomes, for example, happiness and life satisfaction (Chan, 2010), perfectionism and achievement goal orientations (Speirs Neumeister, Fletcher, & Burney, 2015).

The aim of this research is to investigate the phenomena of high intellectual ability, perfectionism and possible explanations of the relationship between high intellectual abilities and perfectionism using literature analyses on the theme.

Defining high intellectual abilities

Ability to understand complex ideas, learn from experience, engage in reasoning, adapt effectively to environment are some of the traits attributable to intelligence. These traits, of course, differ in individuals and as Sternberg and Detterman (1986) noted, although these differences are substantial, they are never entirely consistent: intellectual performance may vary on different occasions; in different domains and because of different criteria used in its evaluation. That asks for clarifying what is intelligence, how it can be defined and measured.

There are different concepts and theories of intelligence, all attempting to clarify the phenomena. Basically, there are two approaches the research and the theories of intelligence were formed from: domain general perspective and domain specific models.

In the framework of *domain-general perspective model* such scientists as Terman, Galton, Binet and others proposed intelligence as one dimensional trait being as the indicator of intellectual giftedness itself (VanTassel-Baska, 2005).

Domain specific model on the other hand, with such scientists as Thurstone, Gardener and others, proposed specific areas of abilities or specific types of intelligences, and believed that such psychological variables as creativity is rather the product than the resource, and such variables can be found only when there is an appropriate amount of knowledge acquired (VanTassel-Baska, 2005).

These two models differ mainly by looking at dimensionality of intelligence, and seeing it as the source or the means of intellectual giftedness. More detailed explanation of this issue can be acquired through discussing two approaches in understanding intelligence: the psychometric and multiple forms of intelligence approach.

The psychometric approach is based on distinguishing individuals on their level of intelligence by using Intelligence tests for this purpose.

Intellectual ability used in intelligence tests is defined as a “problem solving ability” that allows to develop instruments for its measurement, basing on the amount of problems a person can solve from the given list. Overall intelligence tests scores are usually converted into a scale with mean 100 and standard deviation of 15.

The theory that most modern intelligence tests are based on is Horn's and Cattel's theory of fluid and crystalized intelligence published in 1966. The model describes overall intelligence as comprising of two parts: fluid intelligence which is characterised by peculiarities of central nervous system functioning abilities and crystalized intelligence that is rather dependant of gained experience and cultural context (Horn & Cattell, 1966).

Widely used term "IQ" or "Intelligence Quotient", as it is referred to nowadays, is the level indicator used for describing intellectual abilities. Historically it was used as a term stating the ratio between so-called mental age and chronological age, calculated by dividing them, although this procedure is no longer used, the term has survived (Neisser et al., 1996).

One of the earliest IQ tests is Binet-Simon IQ tests first appeared in 1908 and its recent version SB5 was published by Roid in 2003, turning its attention to fluid thinking, knowledge, quantitative thinking, visually-spatial perception and working memory (Becker, 2003). Cattel Culture Fair Intelligence test was published in 1949. It aimed to investigate intelligence apart from environmental factors (Cattell, 1949). The purpose of Raven Progressive Matrixes was to evaluate reasoning from visual stimuli. First it was published in 1938 followed by renewed versions in 1940, 1956, 1998 and 2000 (Strauss, Sherman, & Spreen, 2006). Wechsler's test of Intelligence is more complicated, it measures verbal and non-verbal intellectual abilities (Strauss, Sherman, & Spreen, 2006). The Woodcock-Johnson Tests of Cognitive Abilities, first published in 1977 is meant to evaluate cognitive processes in children and adults by using three hierarchy system: first level - specific abilities evaluated by twenty subtests; second level - viewed by seven factors and third level – overall intellectual ability evaluation (Strauss, Sherman, & Spreen, 2006). Intelligence-Structure-Test 2000 R (Intelligenz-Struktur-Test, 2000 R; IST, 2000 R; Liepmann et al., 2007), often used in German- speaking countries, is based on Thurstone's and Cattell's intelligence theories and measures verbal, numerical, and figural reasoning abilities with a composite score indicating general reasoning ability (Bergold et al., 2015).

The result of intelligence test may be affected by such factors as health condition or motivation, and many scientists argue that only IQ level is too narrow of a definition for giftedness, that other factors pointing to excellence should be taken into account, nevertheless it is widely approved that IQ level exceeding 100 points for two standard deviances, it means 130 points and more, clearly states intellectual giftedness (Perio & Perino, 1981).

The Multiple Forms of Intelligence approach argues that instead of an overall intelligence it should be rather spoken about different types of intelligence.

In accordance to Gardner's Multiple Intelligence theory, each individual has the abilities to engage in seven, relatively independent forms of information

processing, where individuals differ from one another by the profiles of these intelligence forms. Multiple intelligences include logical-mathematical, linguistic, musical, special, bodily-kinaesthetic, interpersonal and intrapersonal abilities (Gardner & Hatch, 1989). This model stresses the necessity to widen the borders of intelligence definition, it should not be considered only as static abilities arranged in a hierarchical model, but rather to be looked at as an independent cognitive system (Pfeiffer, 2008). Gardener expressed his believe that psychometric tests for evaluation of intelligence include only linguistic, logical and some aspects of spatial intelligence, ignoring others (Neisser et al., 1996).

Sternberg's theory proposes three fundamental aspects attributable to successful intelligence and these are the balance between analytical, creative and practical abilities, provided that these abilities work simultaneously so allowing the individual to succeed in specific socio-cultural context (Sternberg, 2004). And it is clear that only analytical abilities from Sternberg's theory can be measured by intelligence tests used nowadays (Neisser et al., 1996).

Both approaches are important in understanding of abilities and intelligence.

Defining perfectionism

The understanding of perfectionism, its definition, specific traits and dimensions has been forming since the middle of 20th century, when many scientists expressed their believes on perfectionism and its relationship to personality and personality development.

For example, Adler (1956) argued about striving for excellence and healthy or unhealthy attitude, in the sense whether it is striving for excellence for one's own sake or for the sake of humankind. Missildine (1963) described the development of perfectionism traits during childhood, where main elements forming perfectionism is self-esteem and dissatisfaction with oneself. Hollender (1965) defined perfectionism as stating demands for oneself or other that overreach the amount appropriate for the given situation. Maslow (1970) mentioned striving for perfection in his self-actualisation theory and finally Hamachek (1978) was one of the first, who saw the dual nature of perfectionism, that could be normal or neurotic type and could therefore have positive or negative impact on personality development.

Most researchers agree to what Hamachek (1978) first proposed as a ***two-dimensional model of perfectionism***, that perfectionism can be positive/ adaptive and negative/ maladaptive (Matte & Lafontaine, 2012).

Dunkley, Zuroff and Blankstein (2003) also agree on perfectionism as the personality trait that can adaptive or maladaptive, supporting the two dimensional

approach, and named these dimensions Self-Critical Perfectionism and Personal Standard Perfectionism.

Personal Standards Perfectionism is setting high standards and goals for oneself (Dunkley, Zuroff, & Blankstein, 2003). Personal Standards Perfectionists may experience high levels of daily stress and to compensate that they tend to involve themselves in active problem solving activity (Dunkley et al., 2000).

Self-Critical Perfectionism involves constant and harsh self-evaluation, overly critical evaluations of one's own behaviour, an inability to gain satisfaction from successful performance, and chronic concerns about others' criticism and expectations (Dunkley, Zuroff, & Blankstein, 2003). It is believed that Self-critical Perfectionists react on stressful situations and they are orientated towards helplessness (Dweck & Sorich, 1999), that slows down ability to make an effort and to find solution (Flett et al., 1996). It is also believed that Self-Critical Perfectionists are keen on finding faults in themselves and therefore they lack motivation to solve problems, instead they tend to use avoiding coping skills (Dunkley, Zuroff, & Blankstein, 2003).

Hewitt and Flett (1989) identified the ***three-dimensional model of perfectionism***: Self-Orientated Perfectionism – overly high personal standards and motivation for personal perfection; Others-Oriented Perfectionism – demand for significant others to be perfect and Socially Prescribed Perfectionism – others expect individual to be perfect (Rice, Ashby, & Slaney, 2007). Initially those three dimensions were conceptualized as maladaptive, but later on it was agreed that perfectionism is multidimensional construct with some adaptive and some maladaptive aspects (Rice, Ashby, & Slaney, 2007).

Frost, Marten, Lahart and Rosenblate (1990) proposed the ***concept of multidimensional perfectionism***, naming these dimensions: concerns over mistakes; Personal Standards; Parental Criticism; Parental expectations; Doubting of actions and Organisation (Rice, Ashby, & Slaney, 2007).

There are several ***perfectionism measurements*** available. The Almost Perfect Scale - APS-R consider Standards and Discrepancy as defining elements of perfectionism allowing to define adaptive and maladaptive perfectionists (Slaney et al., 2001). Multidimensional Perfectionism Scale. The MPS (Hewitt & Flett, 1989, 1991) is a 45-item measure of self-oriented perfectionism, other-oriented perfectionism and socially prescribed perfectionism (Hewitt & Flett, 1991). The Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990) with a 35 item questionnaire, provide six subscales for a multidimensional assessment of perfectionism: Concern over Mistakes (CM), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), Doubts about actions (D), and Organization (O) (Stoeber, 1998).

It is important to understand what type of perfectionism is prevailing in the concerned individual as adaptive perfectionists show the need for organization

and order, are able to accept their own mistakes, support their parents' expectations, and show striving for perfection in achieving goals as positive trait. Maladaptive perfectionists are overly concerned with mistakes, they have overly high standards for themselves or receive overly high demands from significant others, they are highly sensitive to criticism, doubt their own decisions, lack effective coping strategies and show extreme necessity for approval (Schuler, 1999).

High intellectual abilities and perfectionism

First, it is essential to clarify the factors promoting development of perfectionism in individuals with high intellectual ability.

The existing model of perfectionism development within the general population was developed by Flett, Hewitt, Oliver, and Macdonald in 2002 and it proposed three areas of primary influence, which are family factor, response to specific child factors and environmental factors.

Researchers have shown the greatest interest in the family factor as the promoting factor of perfectionism development. In the framework of family factor four different family history models were proposed by Flett and colleagues (2002). *The social expectation model* may promote sense of helplessness, if they do not meet parents' expectations (Hewitt & Flett, 1991), as well as conditional self-worth as result of receiving positive feedback based only on their high intelligence level (Kamins & Dweck, 1999; Speirs Neumeister, Williams, & Cross, 2009). In *the social reaction model* perfectionism may develop because of punitive environment, physical abuse or psychological distress in the family so developing escaping coping strategies or sense of control (Flett et al., 2002) attributable to socially prescribed perfectionism (Speirs Neumeister, 2004; Speirs Neumeister et al., 2009). *The social learning* model taking over perfectionistic traits by observing them in their parents (Flett at al., 2002), evidence for such model are diverse some proving this relationship (e.g., Damian, Stoeber, Negru, & Baban, 2013) others questioning it (e.g., Clark & Coker, 2009). The anxious rearing model proposes development of perfectionism as a result of anxious parents being concerned over mistakes, this model has not been studied yet (Flett et al., 2002).

It is also argued that specific child factors, such as lack of challenge in early educational experiences (e.g., Speirs Neumeister, Williams, & Cross, 2007), heightened sensitivity towards what is expected from them (Emmet & Minor, 1993), intensity of thoughts and feelings (Orange, 1997). Other factors may play role as well: temperament, attachment style, need for approval etc. (Flett et al., 2002).

Only a few research studies have examined the environmental factor as contributing to the development of perfectionism in highly intellectual individuals. Competitive school environment, different types of programs or non-identified intellectual abilities may play role in developing perfectionism (Flett et al., 2002).

The typology used for the research of the relationship between high intellectual abilities and perfectionism have several approaches. There can be individuals with high intellectual ability without any signs of perfectionism – "non-perfectionists", individuals with high intellectual ability and perfectionism trait that can be viewed as "healthy perfectionists" and "dysfunctional perfectionists" (Parker, 1997). Replicating Parker's typology four clusters were found: "mixed-adaptive perfectionists" – high on personal standards, organization, parental expectations, but relatively low on concern over mistakes, doubts about actions and parental criticism; "pervasive perfectionists" – rather high scores on all dimensions of perfectionism; "self-assured, non-perfectionists" – rather low scores on all dimensions of perfectionism and "mixed-maladaptive perfectionists" rather high scores on personal standards, concern over mistakes, doubts about actions and parental criticism and rather low scores of parental expectations and organization (Dixon, Lapsley, & Hanchon, 2004). However later research did not approve the same typology, instead contextual changes were proposed as an explanation, such as, cultural revolution (Portesova & Urbanek, 2013) and cultural shift (Mofield & Parker Peters, 2015).

It is also important to note that in interaction between gifted and significant others may be seen specific traits typical to gifted person: high intellectual abilities, perfectionism, high sensitivity and intensity (Mendaglio & Pyryt, 2003). This high sensitivity may develop procrastination and as a result of it avoiding coping strategy, anxiety, refuse and failure (Neihart, Reis, Robinson, & Moon, 2002).

However, these findings might be addressed rather to maladaptive perfectionists, than perfectionists as such. Although giftedness (including high intellectual ability has been linked to anxiety and depression (Cross, Cassady, Dixon, & Adams, 2008), perfectionism, empathy, the feeling of justice, and creativity (Greene, 2006), and sadness (Vialle, Heaven, & Ciarrochi, 2007), all describing complicated personality of gifted individual. Perfectionism is not attributable to all gifted individuals, and even if there is perfectionism trait it could well be adaptive perfectionism as striving for perfection, but it has to be noted that maladaptive perfectionism itself is connected to psychological distress (Flett et al., 1998) anxiety, depressive symptoms (Soenens et al., 2007) self-esteem (Grzegorek et al., 2004) and others.

Conclusions

Most research is done on students in special gifted programmes but it does not give a clear understanding on relationship of individual with high intellectual abilities in general population. No matter that the clusters in typology differ, mainly because of culture related reasons, it is important to understand that, first of all, individuals with high intellectual abilities may not have perfectionist traits, but if they do have perfectionistic traits those could be adaptive or maladaptive. The factors promoting development of perfectionists should be considered in terms of possible interventions for maladaptive perfectionists. Further studies are needed to clarify the cognitive and affective processes of perfectionism in both general population and population with high intellectual abilities.

References

Adler, A. (1956). *The Individual Psychology of Alfred Adler*. H.L. Ansbacher & R.R. Ansbacher (Eds.). New York, NY: Harper Torchbooks.

Horn, J.L., & Cattell, R.B. (1966). Refinement and test of the theory of fluid and crystallized general intelligences. *Journal of Educational Psychology, 57*(5), 253-270.

Becker, K.A. (2003). *History of the Standford-Binet Intelligence Scales: Content and Psychometrics*. Riverside Publishing.

Bergold, S., Wirthwien, L., Rost, D.H., & Steinmayr, R. (2015). Are gifted adolescents more satisfied with their lives than their non-gifted peers? *Frontiers in Psychology, 6*, 1-10.

Cattell, R.B. (1949). *Culture Free Intelligence Test, Scale 1, Handbook*. Champaign: Institute of Personality and Ability.

Chan, D.W. (2010). Perfectionism among Chinese gifted and non-gifted students in Hong Kong: The use of the Revised Almost Perfect Scale. *Journal for the Education of the Gifted, 34*(1), 68-98.

Clark, Sarah & Coker, S. (2009). Perfectionism, self-criticism and maternal criticism: A study of mothers and their children. *Personality and Individual Differences, 47*(4), 321-325.

Cross, T.L., Cassady, J.C., Dixon, F., & Adams, C.M. (2008). The Psychology of Gifted Adolescents as Measured by the MMPI-A. *Gifted Child Quarterly 52*(4), 326-339. DOI:10.1177/0016986208321810

Cruce, S.E., Pashak, T.J., Handal, P.J., Munz, D.C., & Gfeller, J.D. (2012). Conscientious Perfectionism, Self-Evaluative Perfectionism, and the Five-Factor Model of personality traits. *Personality and Individual Differences, 53*(3), 268-273.

Damian, L.E., Stoeber, J., Negru, O., & Baban, A. (2013). On the development of perfectionism in adolescence: Perceived parental expectations predict longitudinal increases in socially prescribed perfectionism. *Personality and Individual Differences, 55*, 688-693.

Dixon, F.A., Lapsley, D.K., & Hanchon, T.A. (2004). An Empirical Typology of Perfectionism in Gifted Adolescents. *Gifted Child Quarterly, 48*(2), 95-106. DOI: http://dx.doi.org/10.1177/001698620404800203

Dunkley, D.M., Zuroff, D.C., & Blankstein, K.R. (2003). Self-Critical Perfectionism and Daily Affect: Dispositional and Situational Influenceson Stress and Coping, *Journal of Personality and Social Psychology, 84*(10), 234-252.

Dunkley, D.M., Blankstein, K.R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology, 47*, 437–453.

Dweck, C.S., & Sorich, L.A. (1999). *Mastery-oriented thinking*. In Snyder, C.R. (Ed.), *Coping* (232-251). New York, NY: Oxford University Press.

Emmett, J.D., & Minor, C.W. (1993). Career decision-making factors in gifted young adults. *The Career Development Quarterly, 41*(4), 350-366. DOI: http://dx.doi.org/10.1002/j.2161-0045.1993.tb00409.x

Flett, G.L., Hewitt, P.L., Blankstein, K.R., & Gray, L. (1998). Psychological Distress and the Frequency of Perfectionistic Thinking. *Journal of Personality and Social Psychology 75*(5), 1363-1381.

Flett, G.L., Hewitt, P.L., Oliver, J.M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G.L. Flett & P.L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatmen*t (89-132). Washington, DC, US: American Psychological Association. DOI: http://dx.doi.org/10.1037/10458-004

Frost, R.O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*(5), 449-468. DOI: http://dx.doi.org/10.1007/BF01172967

Gardner, H., & Hatch, T. (1989). Multiple Intelligences Go to School: Educational Implications of the Theory of Multiple Intelligence. *Educational Researcher, 18*(8), 4-10.

Gnilka, P.B., McLaulin, S.E., Ashby, J.S., & Allen, M.C. (2017). Coping resources as mediators of multidimensional perfectionism and burnout. *Consulting Psychology Journal: Practice and Research, 69*(3), 209-222.

Greene, M.J. (2006). Helping Build Lives: Career and Life Development of Gifted and Talented Stdents. *Professional School Counseling, 12*, 162-165.

Grzegorek, J.L., Slaney, R.B., Franze, S., & Rice, K.G. (2004). Self-criticism, dependency, self-esteem, and grade point average satisfaction among clusters of perfectionists and nonperfectionists. *Journal of Counseling Psychology, 51*, 192-200.

Hamachek, D.E. (1978) Psychodynamics of normal and neurotic perfectionism, *A Journal of Human Behavior, 15*(1), 27-33.

Hewitt, P., & Flett, G. (1989). The Multidimensional Perfectionism Scale: Development and validation. *Canadian Psychology, 30*, 339-346.

Hewitt, P.L., & Flett, G.L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*(3), 456-470. DOI: http://dx.doi.org/10.1037/0022-3514.60.3.456

Hollender, M.H. (1965). Perfectionism. *Comprehensive Psychiatry, 6*(2), 94-103.

Kamins, M.L., & Dweck, C.S. (1999). Person versus process praise and criticism: Implications for contingent self-worth and coping. *Developmental Psychology, 35*, 835-847.

Kornblum, M., & Ailey, M. (2005). Perfectionism and the gifted: A study of an Australian school sample. *International Education Journal, 6*, 232-239.

Margot, K.C., & Rinn, A.N. (2016). Perfectionism and gifted adolescents: A replication and extension. *Journal of Advanced Academics, 27*, 190-209.

Maslow, A.H. (1970). *Motivation and personality*. New York: Harper & Row.

Matte, M., & Lafontain, M-F. (2012). Assessment of Romantic Perfectionism: Psychometric Properties of the Romantic Relationship Perfectionism Scale. *Measurement and Evaluation in Counseling and Development, 42*(20), 113-132.

Missildine, W.H. (1991). *Your Inner Child of the Pas*t. Simon & Schuster.

Mofield, E., & Parker Peters, M. (2015). Multidimensional perfectionism within suburban adolescents: An exploration of typology and comparison of samples. *Roeper Review, 37*, 97-109.

Neihart, M., Reis, S.M., Robinson, N.M., & Moon, S.M. (Eds.). (2002). *The social and emotional development of gifted children: What do we know?* Waco, TX, US: Prufrock Press.

Neisser, U. et al. (1996). Intelligence: Knowns and Unknowns. *American Psychologist, 51*, 77-101. DOI: https://doi.org/10.1037/0003-066X.51.2.77

Orange, C. (1997). Gifted students and perfectionism. Roeper Review. *A Journal on Gifted Education, 20*(1), 39-41. DOI: http://dx.doi.org/10.1080/02783199709553849

Parker, W.D. (1997). An empirical typology of perfectionism in academically talented children. American *Educational Research Journal, 34*, 545-562. DOI:10.3102/ 00028312034003545

Perino, S.C., & Perino, J. (1981). *Parenting the gifted: Developing the promise*. New York: Bowker.

Pfeiffer, S.I. (Ed.) (2008). *Handbook of Giftedness in Cildren. Psycho-educational Theory, Research, and Best Practices*. Springer.

Portesova, Š., & Urbanek, T. (2013). Typology of Perfectionism in a group of mathematically gifted Czech adolescents over one decade. *The Journal of Early Adolescence, 33*(8), 1116-1144. DOI: http://dx.doi.org/10.1177/0272431613487603

Pyryt, M.C., & Mendaglio, S. (1994). The Multidimensional self-concept: A comparison of gifted and average ability adolescents. *Journal for the Education of Gifted, 17*, 299-305.

Rice, K.G., Ashby, J.S., & Slanely, R.B. (2007). Perfectionism and the Five-Factor Model of Personality, *Assessment, 14*(4), 385-398.

Schuler, P. (1999). *Voices of perfectionism: Perfectionistic gifted adolescents in a rural middle school*. National Research Center on the Gifted and Talented, University of Connecticut

Slaney, R.B., Rice, K.G., Mobley, M., Trippi, J., & Ashby, J.S. (2001). The Revised Almost Perfect Scale. *Measurement and Evaluation in Counseling And Development, 34*(3), 130-145.

Smith, M.M., Saklofske, D.H., Yan, G., & Sherry, S.B. (2017). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism? A study of Canadian and Chinese undergraduates. *Journal of Individual Differences, 38*(2), 63-70.

Soenens, B., Luyckx, K., Vansteenkiste, M., Lyuten, P., Duriez, B., & Goossens, L. (2008). Maladaptive perfectionism as an intervening variable between psychological control and adolescent depressive symptoms: A three-wave longitudinal study. *Journal of Family Psychology, 22*, 465-474.

Speirs Neumeister, K.L. (2004). Understanding the Relationship Between Perfectionism and Achievement Motivation. *Gifted Child Quarterly, 48*(3), 219 – 231. DOI: 10.1177/001698620404800306

Speirs Neumeister, K.L., Williams, K.K., & Cross, T.L. (2007). Perfectionism in Gifted High-School Students: Responses to Academic Challenge. *Roeper Review, 29*(5), 11 – 18. DOI: 10.1080/02783193.2007.11869219

Speirs Neumeister, K.L., Williams, K.K., & Cross, T.L. (2009). Gifted High-School Students' Perspectives on the Development of Perfectionism. *Roeper Review, 31*(4), 198 – 206. DOI: 10.1080/02783190903177564

Speirs Neumeister, K.L., Fletcher, K.L., & Burney, V.H. (2015). Perfectionism and Achievement Motivation in High-Ability Students: An Examination of the 2 × 2 Model of Perfectionism. *Journal for the Education of the Gifted, 38*(3), 215–232. DOI: https://doi.org/10.1177/0162353215592502

Sternberg, R.J., & Detterman, D.K. (Eds.). (1986). *What is intelligence? Contemporary viewpoints on its nature and definition*. Norwood, NJ: Ablex.

Sternbeg, R.J. (2004). *Definitions and Conceptions of Giftedness*. Corwin Press.

Stoeber, J., & Stoeber, F.S. (2009). Domains of perfectionism: Prevalence and relationships with perfectionism, gender, age, and satisfaction with life. *Personality and Individual Differences, 46*, 530-535.

Stöber, J. (1998). The Frost Multidimensional Perfectionism Scale: More perfect with four (instead of six) dimensions. *Personality and Individual Differences, 24*(4), 481-491.

Strauss, E., Sherman, E.M.S., & Spreen, O. (2006). *A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary*, Third Edition.Oxford University press.

Van Tassel-Baska, J. (2005). *Acceleration: Strategies for Teaching Gifted Learners*. Waco, TX: Prufrock Press Inc.

Vialle, W., Heaven, P.C.L., & Ciarrochi, J. (2007). On being gifted, but sad and misunderstood: Social, emotional, and academic outcomes of gifted students in the Wollongong Youth Study. *Educational Research & Evaluation, 13*(6), 569-586.