Chapter 20

PERFECTIONISM AND ACADEMIC ACHIEVEMENT IN A SAMPLE OF CHILDREN FROM A REGULAR SCHOOL PROGRAM CONTEXT

Lauriane Drolet, Philippe Valois, Jacques Forget, & Pier-Olivier Caron
Université du Québec à Montréal, Canada

ABSTRACT
Perfectionism is a multidimensional construct conceptualized as an excessive need in meeting high standards, striving for flawlessness and harsh self-criticism. Past studies have shown that positive perfectionism is related to a better school performance whereas negative perfectionism is often associated with social and emotional difficulties such as anxiety, depression and lower self-esteem. The current study investigated the associations between negative perfectionism and the performance in reading, mathematics and IQ performance in children from regular classroom who are applying to an international schooling program. Correlation analyses show that a high score on the negative perfectionism scale is related to a lower performance in mathematics, reading and on three IQ subscale tests. These results are important since negative perfectionism seem to affect negatively the performance in mathematics and in reading and thus may lead to negative long term outcomes such as drop out. These findings highlight the significance of developing the research on perfectionism and the importance of prevention and intervention among children.

Keywords: perfectionism, children, mathematics, reading performance.

1. INTRODUCTION

Perfectionism is a multidimensional construct often conceived as a personality trait, mainly characterized by an excessive need in meeting high standards, striving for flawlessness and accompanied by harsh self-criticism (Hewitt & Flett, 1991a, 1991b). More than three decades ago, Hamachèk (1978) challenged the one-dimension dominant model and proposed a new conceptualization comprising of two forms of perfectionism, a positive one referred as "normal perfectionism" and a negative one named "neurotic perfectionism". Normal perfectionism is defined as a set of realistic goals and in which endeavours tend to bring positive feelings such as pleasure. Neurotic perfectionism is related to the set of unrealistic goals that comes along with negative feelings and poor flexibility in regards of their own standards.

Even though the existence of a positive and a negative form of perfectionism is becoming commonly accepted (Bieling, Israeli, & Anthony, 2004; Hill, Huelsman, & Araujo, 2010), some concerns about the existence of positive perfectionism remains. For instance, "positive or functional" have strong connotations and may be deemed inappropriate to define perfectionism (Flett & Hewitt, 2002). Stoeber and Otto (2006) pointed out that the use of different facets to create specific conceptualization could partially explain the lack of agreement and the mixed results. The scientific literature on perfectionism tends to illustrate two main conceptualizations; a dimensional and a categorical conception (Stoeber & Otto, 2006). Accordingly, Slade and Owens (1998) proposed a dualistic model comprising of two types of perfectionism, positive and negative. Their conceptualization is derived from the principles of reinforcement theory. In their model, positive and negative perfectionisms do not refer to the common concept of "good" and "bad" but translate into avoidance or approaching behaviours. More precisely, negative perfectionism is driven by the fear of failure and results in avoiding behaviours (negative reinforcement) whereas positive perfectionism is described as the desire to attain success (positive reinforcement).

In accordance with Slade and Owens (1998) conceptualization, Terry-Short, Owens, Slade, and Dewey (1995) proposed the positive and negative perfectionism scale (PNPS) which aims to capture both negative and positive aspects of perfectionism, in regards to the self and

social dimensions which are captured by two subscales, self-oriented perfectionism and socially prescribed perfectionism. Self-oriented perfectionism translates into constant efforts in order to attain perfection. These individuals tend to set high goals for themselves and to display self-criticism. Socially prescribed perfectionism refers to the beliefs that one individual's have towards others expectations. They believe that others are expecting nothing less than perfection and they are striving to meet those "goals" and to obtain social approbation.

Many studies have focused on the link between perfectionism and its antecedents (Enns, Cox, & Clara, 2005; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens., 2005). Some studies tend to demonstrate that the family context (e.g. parenting style, parents' characteristics, family system) play a role in the emergence of perfectionism (Cook & Kearney, 2009; Craddock, Church & Sands, 2009) whereas other studies have emphasis on the relationship between perfectionism and personality traits. Numerous studies pointed out that perfectionism relates to the Big five personality traits (Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006 ; Rice, Ashby & Slaney, 2007; Stoeber, Otto, & Dalbert, 2009; Stumpf & Parker, 2000). As reported in Stoeber and colleagues (2009), consistent findings have been reported across studies for conscientiousness and neuroticism. More precisely, conscientiousness is positively associated with self-oriented perfectionism whereas neuroticism is positively correlated to socially prescribed perfectionism. Similarly, Stumpf and Parker (2000) investigated the relationship between perfectionism and personality traits in accordance with the NEO Five-Factor Inventory. Results showed that healthy perfectionism is associated with conscientiousness and that unhealthy perfectionism showed correlation with lack of self-esteem (Stumpf & Parker, 2000).

Other studies have investigated the consequences of perfectionism among youths and/or adults (Bulik et al., 2003; Stoeber & Rambow, 2007; Turgeon, Forget, & Senécal, 2011). Negative perfectionism has been associated with anxiety (Saboonchi & Lundh, 1997), eating disorder conducts (Bulik et al., 2003; Pratt, Telch, Labouvie, Wilson, & Agras, 2001; Turgeon et al., 2011), depression (Hewitt & Flett, 1991a; Kawamura, Hunt, Frost, & DiBartolo, 2001; Turgeon et al., 2011), and higher level of anxiety towards statistics (Onwuegbuzie & Daley, 1999) whereas positive perfectionism has been related with better outcomes such as higher level of motivation, better academic achievement (Accordino, Accordino, & Slaney, 2000; Gilman & Ashby, 2003; Rice & Slaney, 2002; Stoeber & Rambow, 2007), better performance in laboratory test's setting (Slade, Newton, Butler, & Murphy, 1991) and higher scores at aptitudes tests, which are often used in a selection contest (Stoeber & Kersting, 2007). To date, most studies have been conducted with adolescents (Dixon, Lapsley, & Hanchon, 2004; Nounopoulos, Asbhy, & Gilman, 2006; Stoeber & Rambow, 2007), undergraduates (Ashby & Kottman, 1996; Enns, Cox, Sareen, & Freeman, 2001; Hewitt & Flett, 1991b; Landa & Bybee, 2007; Stoeber & Kersting, 2007; Zhang, Gan, & Cham, 2007) and adults (Cheng, 2001; Stoeber & Stoeber, 2009). Few studies have been carried on adolescents and children and, when it was the case, most of them were conducted with gifted children (Chan, 2007; McArdle, 2010; Tsui & Mazzocco, 2006), which might not be representative of the general population.

2. BACKGROUND AND OBJECTIVES

To our knowledge, there are few studies assessing perfectionism in children who are part of a regular school program. For instance, the study of Stornelli, Flett, and Hewitt (2009), which aimed to assess the link between academic achievement and the social dimension of perfectionism among middle aged children, who were part of different schooling programs (gifted, regular and arts programs), showed a positive association between mathematics achievement and perfectionism in gifted children only. Negative perfectionism was also associated with negative feelings such as sadness and anxiety. Notwithstanding the previous results, Stornelli and her colleagues (2009) found little evidence of group differences in levels of perfectionism and were mostly unrelated to levels of reading and mathematics achievement. Given that Stornelli and her colleagues (2009) only used the social dimension of perfectionism and that little is known on perfectionism in younger children who are part of a regular school program and on its possible negative outcomes, our study aims to investigate the associations

between negative perfectionism and the performance in reading and mathematics among children from regular elementary (6th grade) school in regards to the Slade and Owens model (1998).

3. METHODS

The study was lead in the context of an agreement between a high school and our laboratory. The school has an international schooling program in which all 6th graders children could apply. They requested our assistance in order to conduct the assessment. It is worthy to note that our team did not determine the selection of the children. Our results were sent to the school direction and were reviewed according to their own selection criteria (e.g., reports).

3.1. Participants

Participants consisted of 140 French-speaking children applying for an international schooling program. They were in 6th grade (aged between 10 to 12 years old) at the time of the study. They were recruited from elementary schools in Quebec, Canada. The sample consisted of 89 girls and 51 boys taken from two cohorts (73 students in the first one and 67 in the second one). No significant differences between the cohorts were found. No restriction regarding admission to the study was imposed; any child from 6th grade level could participate. Children and their parents needed to have completed a written consent form to participate in the study.

3.2. Measures

3.2.1. Mathematic and reading tests. To assess their academic performances, children completed mathematic and reading tests. Tests were in accordance with the regular curriculum of the Ministry of Education in Québec. The mathematic test included seven short-answers and twenty-two multiple-choice items appropriate for the 6th grade level. Each item was a success/failure question with a maximum score of 29 for the complete test. Observed minimum and maximum scores were 0 and 27, with a mean of 16.6 and a standard deviation of 4.43. The reading test consisted of eight short-answer questions based on a text about skunks. These tests assess several abilities such as capacity to recall, gather, and infer information as well as their abilities to exercise judgment. Each item has a unique scoring method with a maximum score of 50 for the complete test. Observed minimum and maximum scores were 0 and 50, with a mean of 30.66 and a standard deviation of 11.

3.2.2. Chené-Daigle's intellectual quotient group test. Intellectual quotient was measured by the *Chené-Daigle's intellectual quotient group test,* a validated measurement within French speakers (Chené & Daigle, 1983). The test is composed of eight subscales. Only three subtests were retained: similarities, blocks and construction subscales, assessing respectively abstraction and visual-spatial skills. Given the time constraint and considering that children had other tests to complete throughout the day, only these three subscales were retained, because they correlate well with the global score. Observed minimum and maximum scores were 60 and 136 with a mean of 100.34 and a standard deviation of 14.67. Its constancy was .85 and its homogeneity was .91.

3.2.3. Perfectionism. Positive and negative perfectionism (PNPS) were measured by the *Échelle de Perfectionnisme Positif et Négatif* (Seidah, Bouffard, & Vezeau, 2002) which is a French version of the *Positive and Negative Perfectionism Scale* (Terry-Short et al., 1995). The positive and negative perfectionism scale is both composed of two subscales: self-oriented perfectionism and socially prescribed perfectionism. Each subscale includes 10 items based on a 6-point Likert-like scale, for a total of 40 items. The individual scores for each scale were the average score on all items of the scale. Observed minimum and maximum scores for the positive scale were 2.2 and 5.85, with a mean of 4.18 and a standard deviation of 0.79. Observed minimum and maximum scores for the negative scale were 1 and 5.4, with a mean of

2.68 and a standard deviation of 0.83. Cronbach's alphas for positive and negative perfectionism subscales were respectively from .74 to .80 and from .78 to .85 and their test-retest reliability were both .70 (Seidah et al., 2002).

3.3. Procedure

Prior to the study, school direction distributed consent forms to children who brought them home to their parents. Only children who obtained their parents' signatures were included in the analysis of the study. Children without a signed consent form or refusing to participate in the data collection were still included in the selection process but their data was not comprised in the study. The evaluation took place in classrooms. This evaluation period was split into two sessions: a morning session and an afternoon session with a one hour lunch period between both.

The intellectual quotient group test (Chené & Daigle, 1983), a time task assessment, along with the PNPS scale were administered during the morning, on a two hours period. Considering the classroom format in which the testing took place, directives were given to the entire group and children were required to listen before answering each test or subtest.

The afternoon period consisted of the mathematic and reading assessments. Research assistants explained all evaluations, but there was no specific structure or order completion. Children were instructed that they had 2 hours to complete all tests and they were free to start with either one of the tests, at their own pace. Research assistants advised the children of the remaining time twice (one hour and half an hour before the end).

4. RESULTS

Pearson correlation coefficients were carried out for all five assessments. Table 1 shows the result for all correlations. Mathematics and reading showed a significant positive medium correlation ($r = .384$, $p < .001$), as for reading and IQ ($r = .397$, $p < .001$). Mathematics and IQ showed a positive high correlation, which was expected ($r = .512$, $p < .001$). Positive perfectionism did not show correlations with other assessment, except for a positive medium correlation with negative perfectionism ($r = .460$, $p < .001$). Negative perfectionism showed negative low correlation with reading ($r = -.246$, $p < .001$), mathematics ($r = -.257$, $p < .001$) and IQ ($r = -.213$, $p < .01$).

Table 1. Correlations between reading, mathematics, IQ, positive and negative perfectionism assessment.

	Math	IQ	PP	PN
Reading	.384***	.397***	.054	-.246***
Math	-	.512***	.087	-.257***
IQ		-	.012	-.213**
PP			-	.460***

Note: PP = positive perfectionism, NP = negative perfectionism
* = p < .05 ** = p < .01 *** = p < .001

Based on the result, partial correlations were computed between negative perfectionism and reading and between negative perfectionism and mathematics, controlling for IQ. After controlling for the influence of IQ and positive perfectionism, the correlation between negative perfectionism and reading ($r = -.180$, $p < .05$) and the correlation between negative perfectionism and mathematics ($r = -.177$, $p < .05$) were significant.

5. FUTURE RESEARCH DIRECTIONS

The current study assessed the relation between academic performance and perfectionism in a sample of children aged from 10 to 12 years old. This study found a relation

between perfectionism and school achievement showing that perfectionism can be present among young children in a regular school program. This result appeals for more extensive and comprehensive researches.

Our results share additional support for a dualistic model comprising of positive and negative perfectionism (Slade & Owens., 1998). More insights can be gain by dividing perfectionism into two poles (approaching and avoidance behaviours). For instance, we have found that they were differently related to academic achievement, which was not supported by previous studies (Stornelli et al., 2009). These results directly contradict the work of Stornelli and her colleagues (2009) who showed that perfectionism was mostly unrelated to levels of reading and mathematics achievement. Specifically, their results suggested no significant correlations among children in regular school program. By using the Slade and Owens model (1998) of perfectionism, the current study found that negative perfectionism was negatively related to school achievement. Our results showed that a high score on the negative perfectionism scale was related to a lower performance in mathematics and reading.

One possible explanation is that these tests were administered under time limits (two hours to complete all the tests). In other words, students needed to manage their time. It might be hypothesised that students showing higher level of negative perfectionism do not manage their time effectively. For instance, Klibert, Langhinrichsen-Rohling, and Saito (2005) found that individuals who tend to have a more positive type of perfectionism possessed effective time management skills compared to others. In disagreement with this hypothesis, the current study did not find a significant relationship between positive perfectionism and academic skills. However, individuals who tend to have a more negative type of perfectionism were less likely to have good academic skills. Further studies should investigate this relation among children since it could lead to important clinical interventions such as time management skills.

Another possible and related explanation for these results may be that negative perfectionism increased the level of anxiety when confronted with evaluation, thus altering their performance. The level of anxiety was not measured in the current study and we cannot examine this hypothesis further. However, one can conceptualise that anxiety and poor time management are closely related to each other. Saboonchi and Lundh (1997) showed that negative perfectionism was positively correlated with anxiety. Since they both imply a negative reinforcement mechanism, a positive relationship is expected. Future studies could assess which one, between poor time management or anxiety, accounts for the lower level of performance of children with higher level of negative perfectionism. However, given that negative perfectionism was also negatively correlated to the three IQ subscale tests, we favoured the time-management hypothesis.

Contrary to previous studies (Accordino et al., 2000); Gilman & Ahsby, 2003; Rice & Slaney, 2002; Stoeber & Rambow, 2007), the current study did not identify better academic achievement associated with positive perfectionism. In disagreement with Stoeber and Kersting (2007), no higher scores at aptitudes tests were related to neither positive nor negative perfectionism. The contradictory results may be due to the choice of the measurement. The PNPS distinguishes perfectionism on the basis of perceived consequences, which is derived from a behavioural distinction between approaching (positive perfectionism) and avoidance (negative perfectionism) behaviours, may have led to the discrepancy because of its inherent conceptualization (Terry-Short et al., 1995). Herein, positive and negative perfectionism did not refer to their etymological root. This distinction could possibly explain the confusion and the lack of agreement on perfectionism.

The correlation between both perfectionism rise questions about the orthogonal structure of the two scales. The validation study by Seidah and colleagues (2002) did not found that the positive and negative perfectionism scales were related. Similarities between Seidah and her colleagues' study and the current results remain unclear. It may be hypothesis that an oblique structure, where both variables share some common variance, is more appropriate to represent the model. No correlation between positive perfectionism and others variables were found whereas negative perfectionism was correlated with mathematics and reading performance. This result suggests that another dimension may enable to distinguish between both types of perfectionism.

A second hypothesis is that the current sample was younger than most studies and was not composed of specifically gifted children. They were also in an evaluation context. Considering that assessments were contingent to the admission to the international schooling program, an alternative hypothesis could be that children may have felt pressure from their parents to perform well during the evaluation and therefore may have increased their anxiety. Again, since no measures of stress were taken, the influence that could have mediated the relation between evaluation and perfectionism cannot be assessed. Nevertheless, the current results show that perfectionism can be present among young children in a regular school program and have an association with performance.

One strength of the present study is that children came from a regular elementary school program and this program was open to any child (gifted and ungifted children). This is a better representation of the population in general, especially when most previous studies have focused on gifted children. Our study also contains some limitations. First, our analysis is based on self-report responses which might be subject to social desirability. This factor certainly has a non-negligible influence, since the respondents were in an assessment context for their future high school admission. Thus, children may have felt pressure by their parents to perform well. Second, we used a correlational approach, which cannot infer causality. Further longitudinal studies should examine the link between academic performance and perfectionism.

6. CONCLUSION/DISCUSSION

In conclusion, our study shed light on the negative outcomes which accompanied negative perfectionism, and which may eventually lead to drop out, a diminution of motivation towards school or a lower sense of worth. The results sustain the importance to intervene among these children by teaching them appropriate coping skills to help them manage the emotional distress and negative outcomes that often accompanied negative perfectionism. Considering that negative perfectionism is associated with negative outcomes, school psychologist should be involved in the development of prevention programs in order to ensure their academic pursuit but also to prevent psychological distress. Considering the influence of parents on children, developmental studies should also investigate the transmission of perfectionism between family members in order to better understand its root and guide clinician towards the best type of intervention (e.g., family intervention versus individual counselling).

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AUTHOR(S) INFORMATION

Full name: Lauriane Drolet
Institutional affiliation: Université du Québec à Montréal
Institutional address: C.P. 8888, succ. Centre-ville. Montréal, Qc, Canada, H3C 3P8

Biographical sketch: Lauriane Drolet is pursuing her graduate studies in psychology at the Université du Québec à Montréal under the supervision of Dr Jacques Forget. She obtained the grant from the Social Sciences and Humanities Research Council. Her main research interests are into the fields of educational and developmental psychology. She is leading projects that aimed to develop parenting programs for specific populations, such as parents who have a child with autism spectrum disorder and parents with special needs or psychiatric conditions. The author also shares interests in organizational psychology, most notably in regards to disability at work and prevention.

Full name: Philippe Valois
Institutional affiliation: Université du Québec à Montréal
Institutional address: C.P. 8888, succ. Centre-ville. Montréal, Qc, Canada, H3C 3P8
Biographical sketch: Philippe Valois is completing a PhD in educational psychology at the Université du Québec à Montréal under the supervision of Dr Jacques Forget. His mains interests are in the field of Behaviour Analysis, specifically on behaviour variability. His researches are in creativity assessment, school achievement and related topics, but he also works on epistemological believes about psychology among undergraduate students. He is currently working on integrating divergent thinking and generativity theory in a creative skills assessment.

Full name: Jacques Forget
Institutional affiliation: Université du Québec à Montréal
Institutional address: C.P. 8888, succ. Centre-ville. Montréal, Qc, Canada, H3C 3P8
Biographical sketch: Jacques Forget is currently a full Professor in the Department of Psychology at the Université du Québec à Montréal as well as Director of the Laboratoire des sciences appliquées du comportement. From 2000-2006, Dr Forget was the Director of the undergraduate studies program in psychology. He was recently nominated, for a second time, as the Director of the undergraduate studies program. From 2008-2009, he was the Vice Dean of the Human Sciences Research Faculty. His main research interests are in the fields of Applied Behaviour Analysis and Behavioural Pedagogy. Most precisely, his main areas of research are the spheres of social sensitivity of children with autism spectrum disorder, children with conduct disorder, integration of children with special needs and most recently with eating disorders problems. From an epistemological standpoint, Dr Forget is interested into Behavioural Sciences and its disunion.

Full name: Pier-Olivier Caron
Institutional affiliation: Université du Québec à Montréal
Institutional address: C.P. 8888, succ. Centre-ville. Montréal, Qc, Canada, H3C 3P8
Biographical sketch: Pier-Olivier Caron is a doctoral student in psychology. He is currently supervised by Dr Jacques Forget. His main interests are in the mathematical models from the experimental analysis of behaviour, multivariate data analyses, statistical modeling and computation. He is currently devoted to quantify social sensitivity.