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The 2 × 2 Model of Perfectionism:

A Critical Comment and Some Suggestions

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Abstract

The 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010) is an important, timely, and welcome addition to the debate on the adaptiveness versus maladaptiveness of perfectionism. Research has long differentiated two dimensions of perfectionism—evaluative concerns perfectionism (ECP) and personal standards perfectionism (PSP)—but the 2 × 2 model opens new perspectives hypothesizing that pure ECP (the combination of high ECP and low PSP) is more maladaptive than mixed perfectionism (high ECP, high PSP). With this, the model challenges the tripartite model of perfectionism (e.g., Rice & Ashby, 2007) which does not differentiate between pure ECP and non-perfectionism (low ECP, low PSP). However, the 2 × 2 model has some aspects I regard as problematic. First, it is not parsimonious comprising unnecessary and contradictory hypotheses. Second, it encourages the interpretation of statistically nonsignificant results. Third, it makes suggestions about "distinct subtypes" of perfectionism that are confusing because all the model's hypotheses can be tested with moderated regression analysis (Gaudreau, 2012). This comment makes some suggestions on how to address these aspects so future research can make the best use of the 2 × 2 model's hypotheses to further advance our understanding of the adaptiveness and maladaptiveness of perfectionism.

Keywords: evaluative concerns perfectionism; personal standards perfectionism; perfectionistic strivings; perfectionistic concerns; healthy perfectionism; unhealthy perfectionism

Introduction

Traditionally perfectionism has been regarded as a maladaptive personality characteristic (e.g., Burns, 1980; Pacht, 1984; see Flett & Hewitt, 2002 for a review). Some researchers, however, have suggested that some forms of perfectionism may be healthy or adaptive (see Enns & Cox, 2002 for a review)—a suggestion that other researchers have strongly contested, spawning a lively debate on the adaptiveness versus maladaptiveness of perfectionism (e.g., Benson, 2003; Flett & Hewitt, 2006; Greenspon, 2000; Owens & Slade, 2008; Stoeber & Otto, 2006).

It is important to note that the use of the terms "adaptive" and "maladaptive" in association with perfectionism has been duly criticized because these terms usually refer to people's adjustment to environmental conditions and therefore are more appropriate in theory and research in evolutionary psychology (Stoeber & Otto, 2006). Yet, the use of these terms continues to be common practice in perfectionism theory and research across different research groups (e.g., Davis & Wosinski, in press; Owens & Slade, 2008; Rice & Stuart, 2010; Sherry, Hewitt, Sherry, Flett, & Graham, 2010). Therefore, I too will use the terms "adaptive" and "maladaptive" in the present comment in accordance with the perfectionism literature, but want to stress that, in my comment, these terms merely serve as shorthand for "associated with positive characteristics, processes, and outcomes and indicators of good psychological adjustment" and "associated with negative characteristics, processes, and outcomes and indicators of psychological maladjustment" respectively.

How can perfectionism be both adaptive and maladaptive? The answer lies in the fact that perfectionism is a multidimensional and multifaceted personality characteristic (e.g., Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991; Hill et al., 2004; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). In particular, two dimensions of perfectionism need to be

differentiated (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006): evaluative concerns perfectionism (ECP) and personal standards perfectionism (PSP). ECP (also called perfectionistic concerns) captures those aspects of perfectionism associated with concerns over making mistakes, fears of negative social evaluation, feelings of discrepancy between one's expectations and performance, and negative reactions to imperfection. In contrast, PSP (also called perfectionistic strivings) captures those aspects associated with self-oriented striving for perfection and setting exceedingly high personal standards of performance. Even though the two dimensions are positively correlated and often show considerable overlap, they show different, sometimes opposite relationships. ECP consistently shows positive correlations with characteristics, processes, and outcomes that are generally regarded as "negative" (e.g., neuroticism, avoidant coping, negative affect) and with indicators of psychological maladjustment (e.g., depression) which suggests that ECP captures those aspects of perfectionism that are maladaptive. In contrast, PSP—particularly when the negative influence of ECP is controlled for (Hill, Huelsman, & Araujo, 2010)—often shows positive correlations with characteristics, processes, and outcomes that are generally regarded as "positive" (e.g., conscientiousness, problem-focused coping, positive affect) and with indicators of good psychological adjustment (e.g., satisfaction with life), which suggests that PSP captures those aspects of perfectionism that are more adaptive (see Stoeber & Otto, 2006 for a comprehensive review).

Most researchers investigating adaptive and maladaptive aspects of perfectionism follow a variable-centered approach investigating individual differences in the two dimensions. Some researchers, however, follow a person-centered approach investigating differences between different "subtypes" of perfectionists. In the latter approach, the most prevalent model is the tripartite model of perfectionism (e.g., Parker, 1997; Rice & Ashby, 2007; Rice & Slaney, 2002).

The tripartite model was originally proposed by Parker (1997) differentiating healthy perfectionists, dysfunctional perfectionists, and non-perfectionists. Today's most prominent tripartite model is Rice and Ashby's (2007) model. The model differentiates three subtypes of perfectionists: (a) adaptive perfectionists (also called healthy perfectionists) who are low in ECP and high in PSP, (b) maladaptive perfectionists (also called unhealthy perfectionists) who are high in ECP and high in PSP, and (c) non-perfectionists who are low in PSP (Stoeber & Otto, 2006). When the three subtypes of perfectionists are compared, unhealthy perfectionists consistently show higher levels of negative characteristics, outcomes, and processes and higher levels of psychological maladjustment (and lower levels of positive characteristics, processes, and outcomes and lower levels of good psychological adjustment) than both healthy perfectionists and non-perfectionists, suggesting that the combination of high ECP and high PSP is maladaptive. In contrast, healthy perfectionists often show higher levels of positive characteristics, processes, and outcomes and good psychological adjustment (and lower levels of negative characteristics, processes, and outcomes and psychological maladjustment) than non-perfectionists, suggesting that the combination of low ECP and high PSP is more adaptive (see again the review by Stoeber & Otto, 2006).

The 2 × 2 Model of Perfectionism: Hypothesis 2 is Key

The 2 × 2 model of perfectionism introduced by Gaudreau and Thompson (2010; Gaudreau, 2012) challenges the tripartite model of perfectionism by suggesting that it is important to differentiate not three, but four subtypes of perfectionism: (a) pure PSP (low ECP, high PSP), (b) mixed perfectionism (high ECP, high PSP), (c) pure ECP (high ECP, low PSP), and (d) non-perfectionism (low ECP, low PSP). Pure PSP in the 2 × 2 model corresponds to healthy perfectionism in the tripartite model, and mixed perfectionism corresponds to unhealthy perfectionism. Pure ECP and non-perfectionism do not have a corresponding subtype in the

tripartite model, because the latter regards all individuals with low PSP as non-perfectionists and does not differentiate individuals with low PSP and low ECP from individuals with low PSP and high ECP. This differentiation, however, is central to the 2 × 2 model of perfectionism because the model hypothesizes that the most maladaptive combination of ECP and PSP is pure ECP (high ECP, low PSP), and not what the tripartite model regards as unhealthy or maladaptive perfectionism (high ECP, high PSP).

The 2 × 2 model comprises four hypotheses (Gaudreau, 2012; Gaudreau & Thompson, 2010): Hypothesis 1a states that pure PSP is more adaptive than non-perfectionism, Hypothesis 1b that pure PSP is more maladaptive than non-perfectionism, and Hypothesis 1c that pure PSP and non-perfectionism do not differ in adaptiveness/maladaptiveness; Hypothesis 2 states that pure ECP is more maladaptive than any other combination of ECP and PSP; Hypothesis 3 states that mixed perfectionism is less maladaptive than pure ECP; and Hypothesis 4 states that mixed perfectionism is more maladaptive than pure PSP.

In my view, Hypothesis 2 is the key hypothesis of the 2 × 2 model of perfectionism, because—stating that pure ECP is the most maladaptive combination of PSP and ECP—it presents the main challenge to the tripartite model's conception of maladaptive perfectionism. Hypotheses 1b and 1c present further challenges to the tripartite model because they run contrary to the model's assumption that the combination of low ECP and high PSP is healthy or adaptive when compared to non-perfectionism. In contrast, Hypotheses 1a and 4 conform with the tripartite model. Note, however, that non-perfectionism in the 2 × 2 model is not the same as non-perfectionism in the tripartite model because the latter includes pure ECP in its definition of non-perfectionism. Consequently, Hypothesis 1a only partly conforms with the tripartite model.

Problematic Aspects

As a researcher who regards perfectionism as a multidimensional personality characteristic that has both positive and negative aspects, I see the 2 × 2 model of perfectionism as an important, timely, and welcome addition to the debate on the adaptiveness versus maladaptiveness of perfectionism. However, there are three aspects that I regard as problematic and I think need to be addressed so that the 2 × 2 model can realize its full potential: These are (a) lack of parsimony and consistency, (b) interpretation of nonsignificant results, and (c) confusing suggestions about "distinct subtypes of perfectionism" (e.g., Gaudreau, 2012, p. 26).

Lack of Parsimony and Consistency

First, the 2 × 2 model lacks parsimony because it contains unnecessary hypotheses. Hypothesis 2 states that pure ECP is more maladaptive than any other combination of ECP and PSP, and Hypothesis 3 states that mixed perfectionism is less maladaptive than pure ECP. Because Hypothesis 2 implies Hypothesis 3, Hypothesis 3 is unnecessary. (In addition, Hypothesis 1c may be regarded as unnecessary because it merely represents the null hypothesis of Hypotheses 1a and 1b.) Moreover, the model lacks consistency because it contains contradictory hypotheses. Hypothesis 1a states that pure PSP is more adaptive than non-perfectionism, whereas Hypothesis 1b states the opposite, and Hypothesis 1c suggests that pure PSP is no more adaptive or maladaptive than non-perfectionism. Whereas I appreciate the prudence and openness of the model which allows incorporating opposite findings, it can be argued that good models and theories in personality, like psychological models and theories in general, should be parsimonious (i.e., not make more assumptions than necessary) and consistent (i.e., not contain contradictions) (e.g., Hall & Lindzey, 1957). Even if one would take a perspectivist approach to theory construction (McGuire, 2004) declaring that "all hypotheses and theories are true, as all are false, depending on the perspective from which they are viewed" (p. 173), one would need to state under which perspective Hypothesis 1a is true, and under which

perspective Hypothesis 1b. The 2 × 2 model, however, does not specify under which perspectives Hypothesis 1a would be true and under which perspective Hypothesis 1b. (For example, it could be argued that Hypothesis 1a holds if we regard perfectionism's effects on performance, as PSP is usually associated with higher performance [see Stoeber, 2012 for a review], whereas Hypothesis 1b holds if we regard perfectionism's effects on personal relationships, as PSP when directed at others is usually associated with negative interpersonal qualities [e.g., Hewitt & Flett, 1991, 2004; Hill, Zrull, & Turlington, 1997]). Hence there is an inconsistency in the 2 × 2 model that I think needs to be addressed.

Interpretation of Nonsignificant Results

Second, the 2 × 2 model contains a null-hypothesis: Hypothesis 1c. According to Hypothesis 1c, pure PSP and non-perfectionism do not differ in terms of adaptiveness or maladaptiveness. Consequently, when investigating their associations with positive and negative characteristics, processes, and outcomes, both combinations should show no differences. With this, the model encourages the interpretation of statistically nonsignificant results as support for Hypothesis 1c. For example, Gaudreau and Verner-Filion (2012) investigated the 2 × 2 model's hypotheses examining well-being in athletes. Results showed no statistically significant differences in positive affect and vitality between pure PSP and non-perfectionism. The authors interpreted this nonsignificant result as support for Hypothesis 1c.

This is a frequent misunderstanding of null hypothesis significance testing (NHST) and a misinterpretation of nonsignificant results (Nickerson, 2000). In NHST, an alternative hypothesis (suggesting a difference or association) is tested against the null hypothesis (suggesting no difference or association). When the resulting statistic deviates significantly from the distribution expected under the null hypothesis—usually when the associated *p* value is smaller than .05—we have a significant result, the null hypothesis is rejected, and the alternative hypothesis is

accepted. If the statistic does not deviate significantly from the distribution expected under the null hypothesis ($p \geq .05$), we have a nonsignificant result, and the null hypothesis is retained. This, however, does not mean that the null hypothesis is accepted and the alternative hypothesis is rejected. Under the assumptions of NHST, significant results provide supportive evidence for the alternative hypothesis, but nonsignificant results do not provide supportive evidence for the null hypothesis. NHST, despite the many controversies around it, is the standard procedure for significance testing and the most widely used and accepted procedure for testing hypotheses in the psychological sciences. Consequently, it can be argued that good psychological theories and models should be comprised of alternative hypotheses and should not contain null-hypotheses, because only significant results in NHST can be interpreted as empirical support for a hypothesis, not nonsignificant results (see Nickerson, 2000 for a comprehensive review).

Confusing Suggestion of "Distinct Subtypes" of Perfectionism

Third, the 2 × 2 model's terminology labeling pure PSP, mixed perfectionism, pure ECP, non-perfectionism as "distinct subtypes" of perfectionism is unnecessary, confusing, and potentially misleading. Whereas Gaudreau (2012) regards the proposed subtypes as "fuzzy regions in a two-dimensional space" (p. 26) and suggests that they should be "interpreted as a heuristic to define and distinguish theoretically-driven within-person combinations of perfectionism" (p. 27), the terminology is problematic. The reason is that, in personality research, speaking of "types" suggests that we expect that there are distinct classes of people who differ in the *kind* of personality characteristics they show, instead of individual differences between people who differ in the *degree* to which they show differences in these personality characteristics (see Meehl, 1992 for a comprehensive review). In the same vein, speaking of "subtypes" of perfectionism suggests that there are distinct classes of perfectionism that differ in kind, rather than in the degree of their characteristics. A recent taxometric analysis of

perfectionism, however, found convincing evidence that perfectionism is best conceptualized and treated as a dimensional characteristic, not a categorical characteristic (Broman-Fulks, Hill, & Green, 2008).

Gaudreau (2012) himself suggests that "scores of perfectionism should be analyzed as quantitative distributions rather than as naturally existing dichotomies" (p. 27). Moreover, Gaudreau demonstrates that all of the 2 × 2 model's hypotheses regarding differences between pure PSP, pure ECP, mixed perfectionism, and non-perfectionism can be tested using moderated regression analysis; and he provides detailed instructions on how to calculate regression slopes that represent pure PSP, pure ECP, mixed perfectionism, and non-perfectionism, how to test differences between the slopes, and what differences between slopes provide support for each of the hypotheses of the model (see also Gaudreau & Verner-Filion, 2012). Moderated regression analyses, however, makes the assumption that the predictor variables are continuous and follow a multivariate normal distribution (e.g., Cohen, Cohen, West, & Aiken, 2003). Consequently, if moderated regression analysis is appropriate to investigate the 2 × 2 model's hypothesis, PSP and ECP must be assumed to be continuous variables following a bivariate normal distribution. Hence, in my view, pure PSP, mixed perfectionism, pure ECP, and non-perfectionism simply represent different combinations of individual differences in the degree to which people show ECP and PSP, and should not be regarded as distinct subtypes of perfectionism.

Some Suggestions

Fortunately the three aspects of the 2 × 2 model I regard as problematic can be easily addressed, and I would like to make some suggestions to this effect. To address the first and second aspect (lack of parsimony and consistency, interpretation of nonsignificant results), I would suggest pruning the 2 × 2 model's hypotheses by deleting unnecessary and untestable hypotheses. Because Hypothesis 3 is implied in Hypothesis 2, Hypothesis 3 is unnecessary and

can be deleted from the model without any loss of information. Furthermore Hypothesis 1c is a null hypothesis and thus is untestable using NHST. Moreover, it is the null hypothesis to Hypotheses 1a and 1b, and thus it too can be deleted from the model without loss of information.

But how to address the issue of the two contradictory hypotheses, Hypothesis 1a and Hypothesis 1b? Because, all other things being equal, contradictory hypotheses cannot form part of the same model if the model is to be consistent, I suggest formulating two versions of the 2 × 2 model: one that accommodates Hypothesis 1a (Version A) and one that accommodates Hypothesis 1b (Version B). Version A would comprise Hypotheses 1a, 2 and 4. Consequently, Version A would hold that pure PSP is more adaptive than non-perfectionism (Hypothesis 1a), pure ECP is more maladaptive than any other combination of ECP and PSP (Hypothesis 2), and mixed perfectionism is more maladaptive than pure PSP (Hypothesis 4). Version B would comprise Hypotheses 1b, 2, and 4. Consequently, Version B would hold that pure PSP is more maladaptive than non-perfectionism (Hypothesis 1b), pure ECP is more maladaptive than any other combination of ECP and PSP (Hypothesis 2), and mixed perfectionism is more maladaptive than pure PSP (Hypothesis 4).

Note that Version A and Version B differ only with respect to Hypothesis 1. Hypothesis 2, the key hypothesis of the 2 × 2 model, is the same in both versions, as is Hypothesis 4. Further note that in Version A of the model, the three hypotheses can be combined to form a single hypothesis, rank-ordering the four combinations of perfectionism in terms of their adaptiveness and maladaptiveness as indicated by differences in positive and negative outcomes (see Table 1). This is not possible in Version B (see again Table 1). Hence, Version A appears to be the more parsimonious (and more elegant) version of the two.

Finally, to address the third aspect (confusing assumptions of "distinct subtypes" of perfectionism), I would suggest to abandon the terminology of referring to the four possible

combinations of high versus low ECP and PSP—pure PSP, pure ECP, mixed perfectionism, and non-perfectionism—as *subtypes* of perfectionism. Instead I suggest referring to them as different *combinations* of ECP and PSP to avoid misinterpretation and confusion with typological approaches.

Conclusion

Because the 2 × 2 model of perfectionism (Gaudreau, 2012; Gaudreau & Thompson, 2010) is a very recent addition to the debate on the adaptiveness and maladaptiveness of perfectionism, only a few studies have investigated the 2 × 2 model of perfectionism directly or used moderated regression analyses probing the interaction of ECP and PSP that allow us to examine *post hoc* how the studies' findings support the model's hypotheses.[1] Consequently, the empirical support for the 2 × 2 model is still very limited. Yet, the limited data we have indicate substantial initial support for most of the model's hypotheses. First and foremost, a number of studies (e.g., Gaudreau, 2012; Gaudreau & Thompson, 2010, 2011; Gaudreau & Verner-Filion, 2012) have found support for Hypothesis 2 (pure ECP is more maladaptive than all other combinations of ECP and PSP) thus supporting the model's argument that it is important to differentiate between pure ECP and non-perfectionism (low ECP, low PSP) and not regard people with low PSP as a homogenous group of "non-perfectionists" as does the tripartite model. In addition, a number of studies (Gaudreau, 2012; Gaudreau & Thompson, 2010, 2011; Douillez & Lefèvre, 2011; Stoeber & Yang, 2010) have found support for Hypothesis 3 (pure ECP is more maladaptive than mixed perfectionism) and Hypothesis 4 (mixed perfectionism is more maladaptive than pure PSP). Regarding Hypothesis 1, however, the findings are mixed because the reviewed studies (Gaudreau, 2012; Gaudreau & Thompson, 2010, 2011; Stoeber & Yang, 2010) found support only for Hypothesis 1a (pure PSP is more adaptive than non-perfectionism),

but not for Hypothesis 1b (pure PSP is more maladaptive). Consequently, at present, there is empirical support only for Version A of the 2 × 2 model, but not for Version B (cf. Table 1).

Many more studies will be needed before we can make any judgment on the empirical validity of the different hypotheses of the 2 × 2 model and its success in challenging the tripartite model of perfectionism (e.g., Rice & Ashby, 2007). Notwithstanding this caveat, I am confident and optimistic that the 2 × 2 model will help advance our knowledge and understanding of perfectionism and—by suggesting that we look at all possible combinations of the two dimensions of perfectionism including their additive and interactive effects—will make a significant contribution towards answering the question of how perfectionism can be both adaptive and maladaptive

Footnotes

[1]Note that the 2 × 2 model does not require the interaction to be significant, but it is important to probe for the interaction (see Gaudreau, 2012 for details).

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Table 1

The 2 × 2 Model of Perfectionism, Version A and Version B: Hypothesized Relationships with Positive and Negative Characteristics, Processes, and Outcomes

Version A
Positive characteristics/processes/outcomes: pure PSP > NP > MP > pure ECP
Negative characteristics/processes/outcomes: pure PSP < NP < MP < pure ECP
Version B
Positive characteristics/processes/outcomes: (pure PSP < NP) and (pure PSP > MP) and (NP > MP > pure ECP)
Negative characteristics/processes/outcomes: (pure PSP > NP) and (pure PSP < MP) and (NP < MP < pure ECP)

Note. Version A combines Hypotheses 1a, 2, and 4 of the 2 × 2 model of perfectionism. Version B combines Hypotheses 1b, 2, and 4. (In both versions, Hypothesis 3 is included in Hypothesis 2.) PSP = personal standards perfectionism, NP = non-perfectionism, MP = mixed perfectionism, ECP = evaluative concerns perfectionism; pure PSP = combination of low levels of ECP and high levels of PSP (low ECP, high PSP), NP = (low ECP, low PSP), MP = (high ECP, high PSP), pure ECP = (high ECP, low PSP).