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THE EFFECT OF PERFECTIONISM AND UNCONDITIONAL SELF-ACCEPTANCE ON DEPRESSION

Joe Scott
University of Warwick, UK

ABSTRACT: The study examined the relationships between perfectionism, unconditional self-acceptance and depression. The non-clinical sample comprised 134 participants, each of whom completed a battery of questionnaires, including the Unconditional Self-Acceptance Questionnaire (USAQ), the Center for Epidemiological Studies Depression Inventory (CES-D) and several measures of perfectionism. Significant levels of association were found between all measures, and support was provided for the concept of perfectionism as having a neutral core, distinguishable from its consequences, and for the theory that it is the negative consequences of perfectionism, rather than perfectionism *per se*, that lead to depression. Path Analysis provided support for the mediator model proposed by Flett et al. [Flett, G. L., Besser, A., Davis, R. A., Hewitt, P. L. (2003). *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 21*, 119–138], in which unconditional self-acceptance mediates the effect of socially prescribed perfectionism on depression, and for a more generic model, in which the core construct of perfectionism can have negative consequences, which lead to low levels of unconditional self-acceptance, and thence to depression. Finally, a distinction was drawn between developmental and operational models of perfectionism.

KEY WORDS: perfectionism; MPS; PQ; unconditional self-acceptance; USAQ; self-esteem; depression; CES-D.

Address correspondence to Joe Scott, University of Warwick, Coventry, UK; e-mail: joe.scott@mail.com.

INTRODUCTION

Perfectionism

Horney (1950) depicts perfectionists as neurotic individuals, constantly striving to become their idealized image of themselves, and Hollender (1965, cited in Ashby & Rice, 2002) expresses a similar view: that perfectionists are motivated by insecurity, and seek acceptance through accomplishments and faultless behavior. These views clearly depict perfectionism as problematic, but also suggest that it serves a purpose: it provides the means whereby insecure individuals can consider themselves acceptable, both to themselves and to others. This is perhaps why perfectionism can become a core aspect of identity that individuals are reluctant to give up (Flett & Hewitt, 2002), and why it is difficult to treat, and an obstacle to treatment of other psychological symptoms (Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998).

Hamachek (1978, cited in Bieling, Israeli, & Antony, 2004) goes a little further, distinguishing between 'normal' and 'neurotic' perfectionists and suggesting that, whilst some aspects of perfectionism are negative, others are positive and foster excellence. There is, however, little empirical support for positive aspects of perfectionism, and research has focused primarily on the negative aspects, with perfectionism being linked to outcomes such as procrastination and feelings of failure (Hewitt & Flett, 1991a), and cited as a factor in a wide range of psychological problems including *Depression* (Hewitt & Flett, 1991b, 1993; Hewitt, Flett, & Ediger, 1996; Lynd-Stevenson & Hearne, 1999), *Obsessive Compulsive Disorder* (Frost & Steketee, 1997; Rhéaume, Ladouceur, & Freeston, 2000), *Eating Disorders* (Garner, Olmstead, & Polivy, 1983) and *Chronic Fatigue Syndrome* (White & Schweitzer, 2000).

There are many measures of perfectionism, and the two most commonly used are both called the Multidimensional Perfectionism Scale (Bieling et al., 2004). Constructed around the same time, they reflect different, but partially overlapping, dimensions; Frost et al.'s measure (MPS-F: Frost, Marten, Lahart, & Rosenblate, 1990) contains six dimensions: the setting of excessively high personal standards (PS), an over-concern for mistakes (CM), doubts about the quality of one's performance (DA); and an over-emphasis on organization (O), perceived parental criticism (PC) and perceived parental expectations

(PE); Hewitt and Flett's measure (MPS-H: Hewitt & Flett, 1991a) contains three dimensions, reflecting the 'source' or 'object' of the perfectionism: self-oriented perfectionism (SOP) is self-imposed and self-directed, other-oriented perfectionism (OOP) is directed towards others, and socially prescribed perfectionism (SPP) is perceived as imposed by others.

The two measures have undoubtedly led to significant advances in understanding perfectionism but, as Hill, Huelsman, Furr, Kibler, Vicente, and Kennedy (2004) point out, they have considerable overlap, yet each has unique factors, so the use of both may sometimes be warranted. Indeed, a number of studies have done just that, and factor analysis in those studies provides strong empirical support for the existence of two high-level factors: Dunkley, Blankstein, Halsall, Williams, and Winkworth (2000) distinguished between Personal Standards Perfectionism (derived from the SOP and PS dimensions) and Evaluative Concerns Perfectionism (derived from the SPP, CM and DA dimensions), and found that only the latter was associated with psychological distress; Frost, Heimberg, Holt, Mattia, and Neubauer (1993) distinguished between Positive Strivings (derived from the PS, O, SOP and OOP dimensions) and Maladaptive Evaluation Concerns (derived from the CM, PC, PE, DA and SPP dimensions); and, more recently, Cox, Enns, and Clara (2002) distinguished between adaptive and maladaptive perfectionism and found that they were differentially associated with depression proneness in adulthood. Although these studies adopt slightly different definitions, they all make the same broad distinction—between striving for high standards, and evaluation—and suggest that not all aspects of perfectionism measured by the two MPSs are dysfunctional.

A slightly different, but complementary, view has been expressed by Rhéaume, Freeston, Dugas, Letarte, and Ladouceur (1995a)—that whilst the MPSs reflect the full complexity of the construct of perfectionism, there is also merit in distinguishing between the *core construct* of perfectionism, and all other aspects. In line with Pacht (1984), they suggest that the core construct should be "the belief that a perfect state exists, that one should try to attain". Thus they suggest, for example, that the PE and PC dimensions represent developmental, rather than core, aspects, and that some individual items (e.g., 'I feel that people are too demanding of me') represent associated, or consequential, effects. This view of perfectionism is reflected in the Perfectionism Questionnaire (PQ), created by Rhéaume,

Freeston, and Ladouceur (1995b), which has separate measures for *perfectionist tendencies* (a core construct deemed to be neutral) and *negative consequences*.

Self-esteem and Unconditional Self-Acceptance

It is often suggested that high self-esteem (or self-acceptance) is healthy and that low self-esteem is dysfunctional. As a consequence, much of the research into self-esteem has focussed on *low* self-esteem. Yet *high* self-esteem can also be problematic, and can lead to a vulnerability to criticism or even a proneness to violence (Chamberlain & Haaga, 2001). Ellis (2003) suggests it is not the *level* of self-esteem that is important but the degree to which it is *conditional*, as that reflects a process of self-rating, which is irrational, there being no objective basis for such a process (Chamberlain & Haaga, 2001).

Rational Emotive Behavior Therapy suggests a 'healthy alternative' to self-esteem, within its three tenets of unconditional other-acceptance, unconditional life-acceptance, and unconditional self-acceptance. Acceptance, in this context, should not be construed as resignation—it does not mean that things *must* be a certain way, merely that they *are*. Interpreted in this manner, unconditional other-acceptance is similar to Carl Rogers' (1996) unconditional positive regard; and unconditional life-acceptance is similar to the Buddhist philosophy of accepting life 'the way it is', which is not to say that change should not be pursued, but that expending energy merely 'wishing it were otherwise' achieves nothing. It is, however, the third tenet (unconditional self-acceptance) that is of particular relevance to the present study, as it allows individuals to pursue excellence, and to seek the approval of others, not because of internalized absolutes, or over-generalized needs, but to satisfy desires and preferences (Ellis, 2003). In such a situation, failure or rejection leads to the *healthy and adaptive* emotions of frustration and regret, rather than the *dysfunctional and debilitating* feelings of total failure or complete incompetence.

In many respects, the distinction between conditional and unconditional self-acceptance mirrors Hamachek's (1978) distinction between *neurotic* perfectionists, who *need* success and acceptance, and *normal* perfectionists, who pursue excellence without negative consequences. Where unconditional self-acceptance differs from perfectionism, however, is that the link with psychological health has rarely been

demonstrated empirically (Chamberlain & Haaga, 2001). This was initially due to the absence of a suitable measure, however, Chamberlain and Haaga (2001), constructed the Unconditional Self-Acceptance Questionnaire (USAQ), and found that low levels of unconditional self-acceptance were detrimental to psychological health, and associated with depression, anxiety and low levels of happiness (Chamberlain & Haaga, 2001).

Relationships between Perfectionism, Unconditional Self-Acceptance and Depression

As the constructs of perfectionism and unconditional self-acceptance have some conceptual similarities, and as both have an impact on psychological well-being, there appears to be merit in further exploring (a) the relationship between them, and (b) their separate and joint relationships with psychological health.

A number of studies have found a significant association between perfectionism and psychological distress (see above), and Chamberlain and Haaga (2001) found a significant association between unconditional self-acceptance and depression but, as Dunkley et al. (2000) observe, few studies have tested for mediation. Tests of mediation are important as, according to Baron and Kenny (1986), *mediators explain* the relationship between predictor and dependent variable, whereas *moderators* specify the conditions under which the relationship holds, and vary the size of that relationship.

One study of perfectionism and psychological distress that did test for mediation was that of Preusser, Rice, and Ashby (1994), and this concluded that self-esteem mediates the relationship between socially prescribed perfectionism and depression. More recently, Flett, Besser, Davis, and Hewitt (2003) investigated the relationship between perfectionism, unconditional self-acceptance and depression, and concluded that unconditional self-acceptance mediates the effect of socially prescribed perfectionism on depression.

These studies raise a number of issues. Firstly, they used the MPS-H, which, as indicated above, may include aspects of perfectionism that are not detrimental to psychological health. If this is so, then the correlation between perfectionism and depression may be lower than when the negative (detrimental) aspects only are measured, and any effects may be hidden, or understated. In any event, aspects of perfectionism that are detrimental and aspects that are

not, may each be conceptually meaningful, and therefore warrant separate investigation.

Secondly, aspects that are not core components of perfectionism, but which are included in the MPS-H, may influence levels of association with other variables, according to whether or not those aspects are also included in those other variables' measures. A more accurate correlation between perfectionism and depression may therefore be provided by measuring perfectionism as a core construct.

Thirdly, the model supported by Flett et al.'s (2003) study, in which unconditional self-acceptance mediates the effect of socially prescribed perfectionism on depression, implies that perfectionism reduces unconditional self-acceptance (i.e., it makes self-acceptance more conditional); however, although one could easily envisage perfectionism (through its inevitable 'failures') reducing *the level* of self-acceptance, it is less clear how it might influence *the degree to which self-acceptance is conditional*. An alternative explanation of the relationships might be derived from the views of Horney (1950) and Hollender (1965), that perfectionism provides a way for insecure individuals to become acceptable to themselves. According to such a model, insecure individuals have low levels of unconditional self-acceptance, and, *as a consequence*, adopt perfectionism; but, as perfection is not achievable, this leads to depression. In other words, the alternative model hypothesizes that perfectionism mediates the effect of unconditional self-acceptance on depression. Such a model would not only be consistent with the views of Horney (1950) and Hollender (1965), but with views expressed by Rogers (1996): that perfectionism stems from *contingent* parental approval; and by Flett and Hewitt (2002): that perfectionism is a coping response used by individuals to compensate for the belief that they are unloved.

To explore this possibility further, the present study compares the model proposed by Flett et al. (2003) with the alternative and, whilst so doing, also explores the comments expressed about the MPS-H, using three different measures of perfectionism: (a) multidimensional perfectionism; (b) the negative aspects of perfectionism only; and (c) the core construct of perfectionism.

The study therefore tests the following hypotheses:

1. that, consistent with previous studies, perfectionism and unconditional self-acceptance are significantly associated with depression;

2. that the association between perfectionism and depression varies according to the measure of perfectionism used: specifically, that the association is greatest when only the negative aspects of perfectionism are measured; it is lower when perfectionism is measured as a multidimensional construct; and it is lowest when perfectionism is measured as a (neutral) core construct;
3. that, contrary to Flett et al.'s (2003) model, socially prescribed perfectionism mediates the effect of unconditional self-acceptance on depression;
4. that the models compared in 3, above, generalize across different measures of perfectionism.

The testing of hypotheses 3 and 4 requires the construction of structural equation models representing the following six scenarios:

(a) The **MPS-H → USA** model: Unconditional self-acceptance mediates the effect of perfectionism on depression, where perfectionism is conceptualized as multidimensional and measured using the MPS-H. This is the model proposed by Flett et al. (2003), but with re-estimated coefficients.
(b) The **USA → MPS-H** model: Perfectionism mediates the effect of unconditional self-acceptance on depression, where, again, perfectionism is conceptualized as multidimensional and measured using the MPS-H. This is a direct alternative to the model proposed by Flett et al. (2003).
(c) The **PQ (Negative) → USA** model: As (a), but perfectionism is conceptualized as comprising the negative aspects only, using the PQ: perfectionist consequences sub-scale (Rhéaume et al., 1995b).
(d) The **USA → PQ (Negative)** model: As (b), but perfectionism is conceptualized as comprising the negative aspects only, using the PQ: perfectionist consequences sub-scale (Rhéaume et al., 1995b).
(e) The **PQ (Core) → USA** model: As (a), but perfectionism is conceptualized as a core construct, using the PQ: perfectionist tendencies sub-scale (Rhéaume et al., 1995b).
(f) The **USA → PQ (Core)** model: As (b), but perfectionism is conceptualized as a core construct, using the PQ: perfectionist tendencies sub-scale (Rhéaume et al., 1995b).

METHOD

Participants

The study involved 134 participants who were either non-students, or psychology undergraduates from the University of Warwick. A mixed sample was considered to better represent the general population than a sample comprising only students, and a breakdown of participants is shown in Table 1. Non-students were known to the researcher, or to people known to the researcher, and were individually invited to participate; students were recruited by emails to groups of undergraduates. In both cases, participation was on a voluntary basis, without course credit, or other incentive.

Measures

Multidimensional Perfectionism Scale: MPS-H (Hewitt & Flett, 1991a). This reflects the multidimensional nature of perfectionism, and has three sub-scales, each comprising 15 items.

Perfectionism Questionnaire: PQ (Rhéaume et al., 1995b). This measure has two sub-scales: perfectionist tendencies, consisting of 10 items; and perfectionist consequences, consisting of 24 items. A third score—dysfunctional perfectionism—may also be calculated, as the product of the first two scores divided by 100 (Rhéaume et al., 2000).

Unconditional Self-Acceptance Questionnaire: USAQ (Chamberlain & Haaga, 2001). A 20-item instrument, constructed to measure the extent to which self-acceptance is unconditional.

Center for Epidemiological Studies Depression Inventory: CES-D (Radloff, 1977). A 20-item measure of affective and somatic symptoms of depression, designed specifically for use with non-clinical participants.

Table 1

Participants

Category of participant	*Female*	*Male*	*Total number*	*Mean Age (years)*	*SD*
First-year psychology students	43	4	47	18.51	.59
Third-year psychology students	36	2	38	21.37	3.00
Non-students	25	24	49	47.98	15.51
Total	104	30	134	30.10	16.63

Procedure

The original instruments were re-formatted to achieve a general consistency of appearance, but no changes were made to the instructions, the individual items, or the measurement scales. The instruments were collated in random order to minimize the likelihood of carry-over effects, and participants were asked to complete and return them 'at their earliest convenience'.

Models were constructed and tested using LISREL (Student Version 8.71—October 2004), and were based on correlation matrices, using the maximum-likelihood estimation method. Following the generally adopted approach of using multiple measures of fit, and to aid comparison with the model proposed by Flett et al. (2003), the study used two absolute measures of fit: the *Chi-square statistic* and the *Goodness of Fit Index* (Jöreskog & Sörbom, 1993), two incremental measures: the *Comparative Fit Index—CFI* (Bentler, 1990) and the *Normed Fit Index—NFI* (Bentler & Bonett, 1980), and *Chi-square divided by df*.

The *Chi-square statistic* measures the discrepancy between the actual data and hypothesized variance–covariance matrices with values closer to zero indicating a better fit and the associated *p-value* indicating whether the discrepancy is significant, thus p-values >.05 represent an adequate fit. The Goodness of Fit Index (GFI) is analogous to the multiple correlation coefficient squared (R^2) in multiple regression, and the Comparative Fit Index (CFI) and Normed Fit Index (NFI) both assess the extent to which the predicted model is superior to the null, or independent model. For these three indices, values range from zero to one, with values closer to one indicating a better fit, and values exceeding .90 generally considered acceptable. *Chi-square divided by df* provides a means of comparing similar models, with lower ratios being preferred (Grimm & Yarnold, 1997).

RESULTS

Exploratory Data Analysis

The data were examined for gender and age-related differences. ANOVAs for each of the variables shown in Table 2 reported no significant gender differences: ($F \leq 3.97$, $p \geq .06$); similarly, no significant

Table 2

Zero-order Correlations, Men Scores and Standard Deviations

Variables		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*Mean*	*SD*
1	Perfectionist tendencies									31.77	6.82
2	Perfectionist consequences	.687**								63.93	21.37
3	Dysfunctional perfectionism	.868**	.940**							21.30	10.61
4	Unconditional self-acceptance	−.289**	−.530**	−.473**						78.68	15.56
5	Self-oriented perfectionism	.745**	.705**	.779**	−.412**					67.72	16.97
6	Other-oriented perfectionism	.383**	.392**	.415**	−.355**	.506**				55.55	13.17
7	Socially-prescribed perfectionism	.460**	.560**	.575**	−.452**	.551**	.353**			54.49	13.45
8	Depression	.213*	.434**	.376**	−.510**	.281**	.216*	.395**		17.98	11.90

n = 134.
**Correlation is significant at the .01 level (2-tailed).
*Correlation is significant at the .05 level (2-tailed).

correlation was found between any of the study variables and age ($r \leq .16$, $p \geq .06$). Age and gender were not, therefore, included in subsequent analyses.

As participants relate to three distinct groups (1st year students, 3rd year students and non-students), the data were further examined for systematic differences between these groups but none were found. The data was therefore analyzed as a single sample.

Correlation Analyses

Mean scores, standard deviations and zero-order correlations for the complete sample are shown in Table 2. In addition to the (anticipated) high levels of inter-correlation between the various measures of perfectionism, the table also shows significant correlations between all aspects of perfectionism and depression; between all aspects of perfectionism and unconditional self-acceptance; and between unconditional self-acceptance and depression. This broadly supports previous research (e.g., Dunkley et al, 2000; Rice et al., 1988), but differs from Flett et al.'s (2003) results, which show a significant correlation between depression and socially prescribed perfectionism: $r(93) = .27$, $p < .01$, but not between depression and self-oriented perfectionism: $r(93) = -.05$, ns, nor between depression and other-oriented perfectionism: $r\ (93) = .01$, ns.

Predictive Strength of Different Conceptualizations of Perfectionism

If perfectionism and unconditional self-acceptance are viewed as 'causing' depression, the correlations listed in line 8 of Table 2 represent the 'predictive strength' of each independent variable i.e., a measure of the variation in depression predicted by the variable. In this context, dysfunctional perfectionism is not as effective a predictor as perfectionist consequences, and its extremely high correlation with perfectionist tendencies and perfectionist consequences (.868 and .940, respectively) suggest that it is unlikely to add substantially to the models being considered. For these, and other reasons discussed below, the measure was not included in subsequent analyses. Of the remaining perfectionism measures, perfectionist consequences (reflecting the 'negative aspects' of perfectionism) was the most effective individual predictor of depression, and perfectionist tendencies (the 'core construct') the least effective.

Two further points were apparent: firstly, not only was the 'core construct' the least effective predictor, when depression was regressed on the core construct and *any* other perfectionism variable, the effect of the core construct became non-significant; secondly, perfectionist consequences alone were more effective at predicting depression than the three dimensions of the MPS-H combined (r^2 = .188: F (1, 132) = 30.577, $p < .001$, compared with R^2 = .165: F (3, 130) = 8.572, $p < .001$); however, when unconditional self-acceptance was also included in the regressions, the difference became minimal: R^2 = .297 (unconditional self-acceptance plus perfectionist consequences) compared with R^2 = .294 (unconditional self-acceptance plus the three dimensions of the MPS-H).

Tests for Mediation

Baron and Kenny (1986) identify three conditions that must be satisfied to demonstrate mediation: firstly, variations in the independent variable (the predictor) must significantly account for variations in the dependent variable; secondly, variations in the predictor must significantly account for variations in the proposed mediator; thirdly, when regressing the dependent variable on both the predictor and the proposed mediator, the effect of the proposed mediator must be significant, and the effect of the predictor must show a significant drop from its previous effect. Full (but not necessarily exclusive) mediation is said to occur when the drop is not merely significant but reduces the (direct) effect of the predictor to zero.

Regression equations may be used to determine the various effects involved, except the *drop in effect* of the predictor. This drop equates to the *indirect* effect of the predictor (via the mediator), and may therefore be determined by path analysis, or structural equation modelling (SEM). This is illustrated by Figure 1, where path *a* represents the *direct* effect of the predictor on the dependent variable and path *b* + *c* (combined) represents the *indirect* path. To avoid confusion, and for ease of reference, the direct effect of the predictor *before*

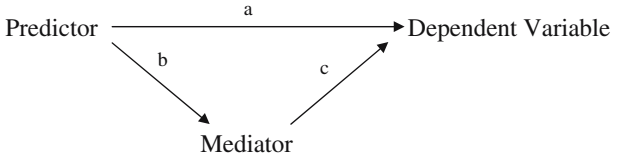

Figure 1. Illustrative mediation model.

the drop, is referred to as the *full direct effect*, and the direct effect *after the drop* as the *reduced direct effect*. The full direct effect is *not* shown in path diagrams, and is calculated by regressing the dependent variable on the predictor *in the absence of the mediator*; the reduced direct effect *is* shown on path diagrams, and is provided as part of the model, or path diagram, as are the indirect effect and a measure of its significance.

Thus mediation may be demonstrated when *all* of the following are significant: (i) the full direct effect of the predictor on the dependent variable (the dependent variable regressed on the predictor); (ii) the effect of the predictor on the mediator (path *b*); (iii) the effect of the mediator on the dependent variable (path *c*); and (iv) the indirect effect of the predictor on the dependent variable (path *b* + *c*). *Full mediation* occurs when the reduced direct effect of the predictor on the dependent variable (path *a* in the presence of path *b* + *c*) is non-significant.

MPS-H → USA Model

The model in Figure 2 is as proposed by Flett et al. (2003) (but with re-estimated coefficients); it shows socially prescribed perfectionism (PSOCIAL) as the predictor, depression (DEPRESS) as the dependent variable, and unconditional self-acceptance (USA) as a

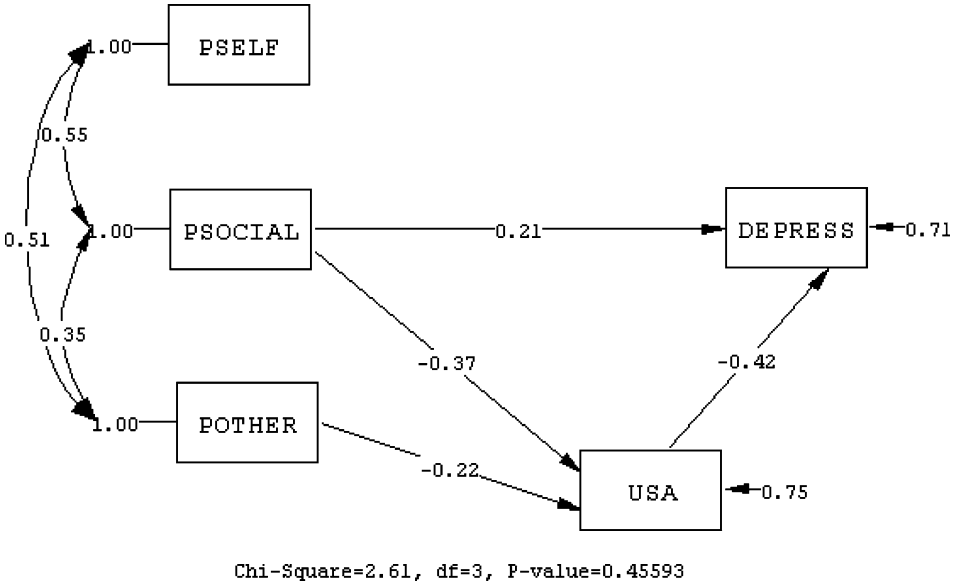

Figure 2. Data fit to model proposed by Flett et al. (2003) .

Table 3

Measures of Fit for MPS-H → USA Model

Data	*n*	*Chi-square*	*df*	*p*	*Chi-square/df*	*GFI*	*CFI*	*NFI*	*Variance of depression explained (%)*
Flett et al. (2003)	94	5.48	3	.14	1.83	.98	.97	.94	13
Present study	134	2.61	3	.46	.87	.99	1.00	.99	29

potential mediator; it also shows other-oriented perfectionism (POTHER) as (partly) predicting unconditional self-acceptance.

The measures of fit for the model are shown in Table 3, along with those reported by Flett et al. (2003). This shows that, not only does the model provide an acceptable fit for Flett et al.'s (2003) data, it provides a good fit for the data from the present study.

Tests for mediation produced the following results—firstly, the full direct effect of socially prescribed perfectionism (predictor) on depression (dependent variable) was significant: path coefficient = .40, $t = 4.95$, $p < .001$; secondly, the effect of socially prescribed perfectionism (predictor) on unconditional self-acceptance (proposed mediator) was significant: path coefficient = −.37, $t = -4.60$, $p < .05$; thirdly, the effect of unconditional self-acceptance on depression was significant: path coefficient = −.42, $t = -5.04$, $p < .001$; and fourthly, the *indirect* effect of socially prescribed perfectionism on depression, via unconditional self-acceptance, was significant: coefficient = .16, $t = 3.40$, $p < .001$. Thus unconditional self-acceptance may be considered to mediate the effect of socially prescribed perfectionism on depression. Unlike Flett et al.'s (2003) study, however, the reduced direct effect of socially prescribed perfectionism on depression remained significant with the present data: path coefficient = .21, $t = 2.50$, $p < .05$, suggesting that unconditional self-acceptance is a partial, rather than a full mediator.

The model proposed by Flett et al. (2003) was also re-built by starting with a fully recursive model, that is one with each variable linked to each other, and systematically removing non-significant paths. Significance of a path may be assessed by the effect of its removal on the Chi-square statistic, or provided directly by structural equation modeling software. This process produced the model shown in Figure 3, which represents the stage before Flett et al.'s (2003) final model (having one additional path).

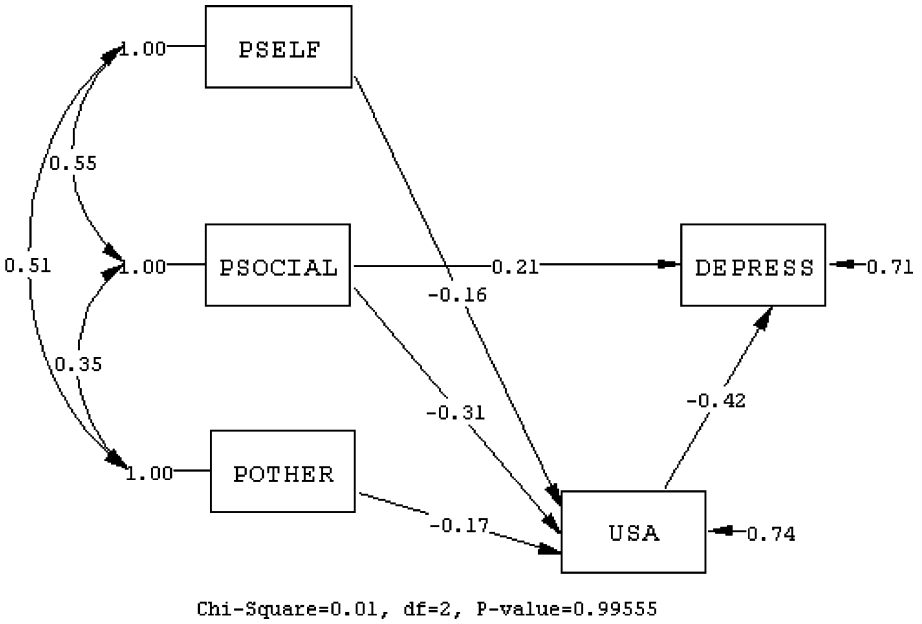

Figure 3. Revised version of model proposed by Flett et al. (2003) .

In this model, the paths from self-oriented perfectionism (PSELF), and from other-oriented perfectionism (POTHER) to unconditional self-acceptance (USA) are both non-significant: path coefficient = .16, t = 1.61, ns, and path coefficient = .17, t = 1.90, ns, respectively; yet, because they are approaching significance, removal of either path results in the other path becoming significant. In terms of the model, they may thus be considered as having almost identical effects. Furthermore, whilst the original model is more parsimonious, the fit of the revised model is better according to all measures used (these are shown in Table 4, where the corresponding measures for the original

Table 4

Measures of Fit for revised MPS-H → USA Model

Model	*n*	*Chi-square*	*df*	*p*	*Chi-square/df*	*GFI*	*CFI*	*NFI*	*Variance of depression explained (%)*
Original	134	2.61	3	.46	.87	.99	1.00	.99	29
Revised	134	.01	2	.996	.005	1.00	1.00	1.00	29

model are repeated for comparison); and whilst the improvement in fit (determined from differences in Chi-square and df), is not significant: Chi-square$_{diff}$ (1, n = 134) = 2.60, p = .10, it does approach significance. The revised model is therefore preferred to the original.

USA → MPS-H Model

The hypothesized alternative to the MPS-H → USA model is the USA → MPS-H model and this is shown in Figure 4. It was derived by incorporating the variables shown into a fully recursive model, with a direction of flow from unconditional self-acceptance to perfectionism to depression, and trimming to remove all non-significant paths.

In this model, unconditional self-acceptance (USA) is the predictor, depression (DEPRESS) is the dependent variable, and socially prescribed perfectionism (PSOCIAL) is a potential mediator.

As Table 5 shows, the USA → MPS-H model is an excellent fit to the data.

Tests for mediation provided the following results: firstly, the full direct effect of unconditional self-acceptance on depression was

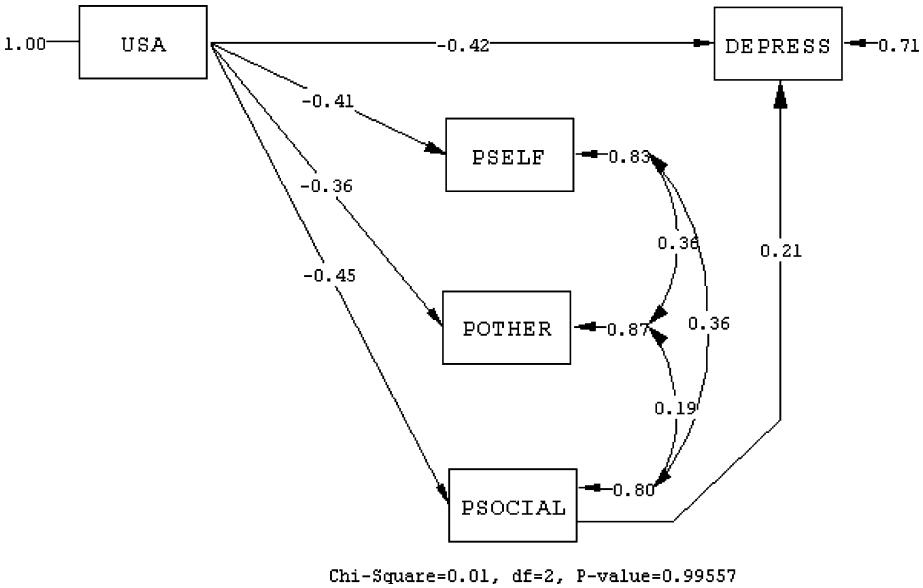

Figure 4. MPS-H mediating effects of unconditional self-acceptance.

Table 5

Measures of Fit for USA → MPS-H Model

Model	*n*	*Chi-square*	*df*	*p*	*Chi-square / df*	*GFI*	*CFI*	*NFI*	*Variance of depression explained (%)*
USA → MPS-H	134	.01	2	.996	.005	1.00	1.00	1.00	29

significant: path coefficient = −.51, t = −6.81, $p < .001$; secondly, the effect of unconditional self-acceptance on socially prescribed perfectionism was significant: path coefficient = −.45, t = −5.83, $p < .001$; thirdly, the effect of socially prescribed perfectionism on depression was significant: path coefficient = .21, t = 2.52, $p < .05$; and fourthly, the *indirect* effect of unconditional self-acceptance on depression, via socially prescribed perfectionism, was significant: coefficient = .09, t = 2.32, $p < .05$. Thus socially prescribed perfectionism may be considered to mediate the effect of unconditional self-acceptance on depression. As with the revised MPS-H → USA model, however, the reduced direct effect of unconditional self-acceptance on depression remained significant: path coefficient = −.42, t = −5.08, $p < .001$, suggesting that socially prescribed perfectionism is a partial, rather than a full mediator.

Models Using Alternative Views of Perfectionism

A series of four further models were constructed, in the same manner as above, but using the two measures of perfectionism provided by the Perfectionism Questionnaire (Rhéaume et al., 1995b): perfectionist tendencies (the core construct), and perfectionist consequences (the negative aspects), instead of the multidimensional measures. Each model is illustrated and discussed separately below, but the measures of fit for all four models are shown in Table 6, which indicates that each model provides an acceptable fit to the data.

Table 6

Measures of Fit for Models using PQ Measures of Perfectionism

Model	*Chi-square*	*df*	*p*	*Chi-square / df*	*GFI*	*CFI*	*NFI*	*Variance of depression explained (%)*
PQ (Negative) → USA	3.08	2	.21	1.54	.99	.99	.98	30
USA → PQ (Negative)	1.12	1	.29	1.12	1.00	1.00	.99	30
PQ (Core) → USA	.84	1	.36	.84	1.00	1.00	.98	26
USA → PQ (Core)	.84	1	.36	.84	1.00	1.00	.98	26

PQ (Negative) → USA Model

Although the main purpose of this model is to assess whether unconditional self-acceptance (USA) mediates the effect of perfectionist consequences (PCONS) on depression (DEPRESS), perfectionist tendencies (PTEND) were also included, for completeness (Figure 5).

Tests for mediation provided the following results: the full direct effect of perfectionist consequences on depression was significant: path coefficient = .43, $t = 5.53$, $p < .001$; the effect of perfectionist consequences on unconditional self-acceptance was significant: path coefficient = −.53, $t = -7.12$, $p < .001$; the effect of unconditional self-acceptance on depression was significant: path coefficient = −.39,

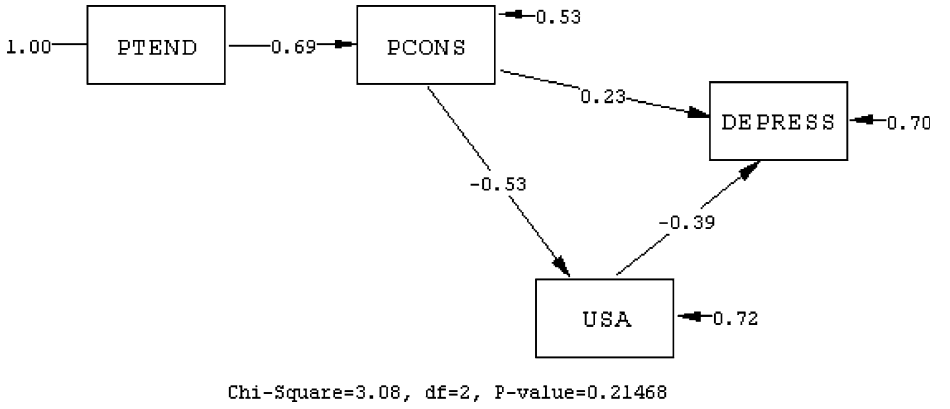

Figure 5. Unconditional self-acceptance mediating effects of negative aspects of perfectionism.

$t = -4.56$, $p < .001$; the *indirect* effect of perfectionist consequences on depression, via unconditional self-acceptance was significant: coefficient = .21, $t = 3.84$, $p < .001$; and the reduced direct effect of perfectionist consequences on depression remained significant: path coefficient = .23, $t = 2.65$, $p < .01$. Thus unconditional self-acceptance may be considered to partially mediate the effect of perfectionist consequences on depression.

The model also presents two other potential examples of mediation, namely that perfectionist consequences may mediate the effect of perfectionist tendencies, on unconditional self-acceptance, and/or on depression. Tests confirmed the former, i.e., that perfectionist consequences mediate the effect of perfectionist tendencies on unconditional self-acceptance and, as the reduced full effect was non-significant, this is an example of full mediation; perfectionist consequences do not, however, mediate the effect of perfectionist tendencies on depression as, in the specified model, the full direct effect of perfectionist tendencies on depression is non-significant, due to the presence of unconditional self-acceptance (regression coefficient = .072, $t = .915$, ns).

USA → PQ (Negative) Model

This model also has other potential examples of mediation, but tests were restricted to whether perfectionist consequences (PCONS) mediate the effect of unconditional self-acceptance (USA) on depression (DEPRESS) (Figure 6).

Tests for mediation provided the following results: the full direct effect of unconditional self-acceptance on depression was significant: path coefficient = −.51, $t = -6.81$, $p < .001$; the effect of unconditional self-acceptance on perfectionist consequences was significant: path coefficient = −.36, $t = -6.23$, $p < .001$; the effect of perfectionist consequences on depression was significant: path coefficient = .23, $t = 2.64$, $p < .01$; the *indirect* effect of unconditional self-acceptance on depression, via perfectionist consequences was significant: coefficient = −.12, t = −2.48, $p < .05$; and the reduced direct effect of unconditional self-acceptance on depression remained significant: path coefficient = −.39, $t = -4.53$, $p < .001$. Thus perfectionist consequences may be considered to partially mediate the effect of unconditional self-acceptance on depression.

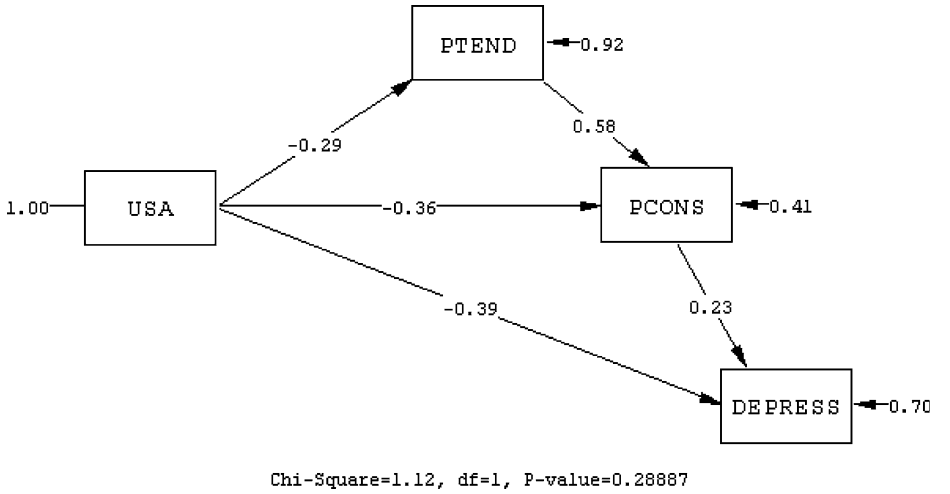

Figure 6. Negative aspects of perfectionism mediating effects of unconditional self-acceptance.

PQ (Core) → USA Model

This model tests whether unconditional self-acceptance (USA) mediates the effect of perfectionist tendencies (PTEND) on depression (DEPRESS) (Figure 7).

Tests for mediation provided the following results: the full direct effect of perfectionist tendencies on depression was significant: path coefficient = .21, $t = 2.50$, $p < .05$; the effect of perfectionist tendencies on unconditional self-acceptance was significant: path coefficient = −.29, $t = -3.46$, $p < .001$; the effect of unconditional self-acceptance on depression was significant: path coefficient = −.51,

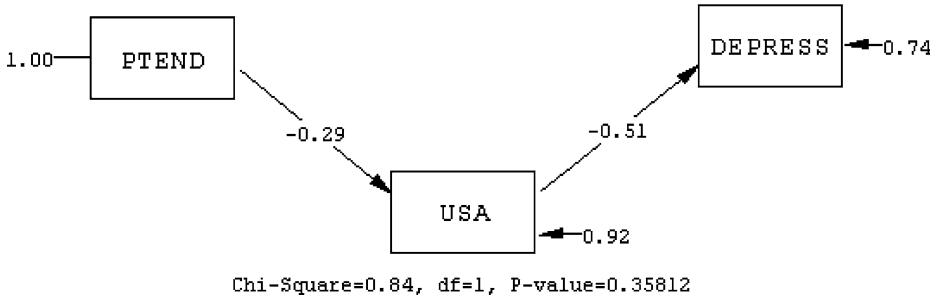

Figure 7. Unconditional self-acceptance mediating effects of core construct of perfectionism.

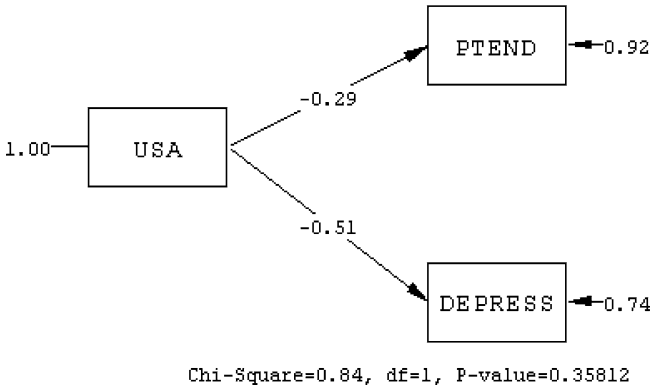

Figure 8. Core construct of perfectionism not mediating effects of unconditional self-acceptance.

t = −6.81, $p < .001$; the *indirect* effect of perfectionist tendencies on depression, via unconditional self-acceptance was significant: coefficient = .15, $t = 3.09$, $p < .01$; and the reduced direct effect of perfectionist tendencies on depression was non-significant: path coefficient = .07, $t = .92$, ns. Thus unconditional self-acceptance may be considered to *fully* mediate the effect of perfectionist tendencies on depression.

USA → PQ (Core) Model

The final model demonstrates that perfectionist tendencies (PTEND) do not mediate the effect of unconditional self-acceptance (USA) on depression (DEPRESS), as although the effect of unconditional self-acceptance on depression was significant: path coefficient = −.51, t = −6.81, $p < .001$, and the effect of unconditional self-acceptance on perfectionist tendencies was also significant: path coefficient = −.29, $t = -3.46$, $p < .001$, the effect of perfectionist tendencies on depression, in the presence of unconditional self-acceptance, was non-significant (Figure 8).

DISCUSSION

As predicted, the study found perfectionism (all measures) and unconditional self-acceptance to be significantly associated with depression, and with each other. This extends the previous findings of Preusser et al. (1994) who found perfectionism to be associated

with self-esteem, and with depression, and is in partial agreement with the findings of Flett et al. (2003). The association of *all* measures of perfectionism with unconditional self-acceptance is particularly interesting, as Flett et al. (2003) interpreted an association between self-oriented perfectionism and unconditional self-acceptance as consistent with the notion that self-oriented perfectionism involves a contingent sense of worth. If this is true, then the present study extends that notion, suggesting that a contingent sense of worth is common to all 'types' of perfectionism, in which case, it could be considered to be a core aspect of perfectionism.

The associations found by the present study differ slightly from those of Flett et al. (2003), which did not find self-oriented perfectionism or other-oriented perfectionism to be significantly associated with depression. Numerous other studies *have* found self-oriented perfectionism to be correlated to depression (Cox et al., 2002; Hewitt & Flett, 1991b, 1993; Preusser et al., 1994), and Hewitt and Flett (1991b) provide a number of reasons why this should be so, including the tendency of self-oriented perfectionists to set unrealistic standards and to equate performance and self-worth. The results of the present study are therefore consistent both with previous research, and with underlying theory, in respect of self-oriented perfectionism.

The significant association between other-oriented perfectionism and depression is not, however, consistent with the previous studies cited, or with Flett et al. (2003). One possible explanation is that the studies cited had a lower number of participants, as data exploration in the present study shows that the association between other-oriented perfectionism and depression is non-significant for each of the sub-groups (1st year students, 3rd year students, and non-students) and only becomes significant on aggregation. Alternatively, the finding of significance in the present study might reflect the inclusion of non-students, who were also mainly of a higher age group, although this appears to be unlikely, as the association for non-students alone was non-significant. Although significant, the level of association (.216) is lower than for other measures of perfectionism, and it is therefore possible, that the finding may be due to chance.

Also as predicted, the association between depression and perfectionism varied according to the different measures used, with perfectionist consequences (negative aspects only) having the greatest association, the three individual dimensions of the MPS-H (containing

both positive and negative aspects) having somewhat less, and perfectionist tendencies (neutral) having the least; this order was maintained, even when the three dimensions of the MPS-H were combined. These findings are consistent with the suggestion that the association between depression and perfectionism is largely due to the negative aspects of perfectionism, rather than perfectionism *per se*, and with Rhéaume et al.'s (1995b) view of perfectionism as a (neutral) core construct, with positive or negative consequences.

Although perfectionist consequences, alone, were more effective at predicting depression than the three dimensions of the MPS-H, jointly, perfectionist consequences and unconditional self-acceptance, together, were not significantly more effective than the three dimensions of the MPS-H plus unconditional self-acceptance. This suggests that the features of perfectionist consequences that lead to more effective prediction are also included in the measure of unconditional self-acceptance. This is perhaps not surprising, in view of earlier comments about their conceptual similarities, and may partly explain why unconditional self-acceptance has a greater association with perfectionist consequences than with any other measure of perfectionism. This finding suggests that future research might benefit from reviewing the two measures to identify common aspects, and perhaps from devising a measure of unconditional self-acceptance using the same approach that Rhéaume et al. (1995b) adopted for perfectionism i.e., one that measures a core construct and consequences. If this latter option were taken, it is likely that the consequences of perfectionism, and of unconditional self-acceptance would have further common aspects, and these could then be extracted, as they could not be claimed to be a central part of either construct.

As dysfunctional perfectionism was less effective at predicting depression than perfectionist consequences, despite its being (partly) derived from them, this raises doubts about the benefit of the construct. Firstly, a construct of dysfunctional perfectionism would always be negative, irrespective of other factors, which is not only contrary to the concept of perfectionism as a neutral core with positive or negative consequences, but it is also inconsistent with the notion that whether perfectionism is 'good' or 'bad' depends upon the circumstances e.g., whether an individual is experiencing success or failure (Flett, Hewitt, Oliver, & MacDonald, 2002). Secondly, the *method* of calculating dysfunctional perfectionism means that similar scores may be obtained for individuals who have different levels of

perfectionist tendencies and perfectionist consequences. This is most likely to occur when scores are in the middle of the range suggesting that the measure is not appropriate for non-clinical samples; but even for extreme scores, it is unclear how someone who scores highly in perfectionist consequences can have anything other than high levels of perfectionist tendencies. Overall, therefore, the measure of dysfunctional perfectionism appears to be redundant, and provides nothing additional to the measure of perfectionist consequences.

Turning to the mediator models, Flett et al.'s (2003) original model (with re-estimated coefficients) was found to be a good fit to the (new) data, it explained 29% of the variation in depression scores, and it satisfied the criteria for mediation. Given that this model had been specified using a different sample, the present study provides strong additional support for that model. However, a revised version, incorporating one additional path, was a better fit to the current data, and it is that revised model, that is referenced in the discussions below.

The six models tested represent two generic models:

The MPS-H → USA, the PQ (Negative) → USA, and the PQ (Core) → USA models all test unconditional self-acceptance as a mediator, although each uses a different measure of perfectionism. Because they are all based on Flett et al.'s (2003) original model, the generic model that they represent will be referred to as *'the Flett model'*.
The USA → MPS-H, the USA → PQ (Negative), and the USA → PQ (Core) models all test perfectionism as a mediator, although each uses a different measure of perfectionism; because they are all based on alternatives to Flett et al.'s (2003) model, the generic model that they represent will be referred to as *'the alternative model'*.

Corresponding models from each set constitute a pair of models, and provide the means for comparison between different features of the underlying generic models.

The first pair of models, the MPS-H → USA and the USA → MPS-H models, have almost identical measures of fit, and both satisfy the criteria for partial mediation, thus it is not possible to categorically state that one model is better than the other. One way that a preference could be identified would be to use the relative 'drop' in the direct path from the predictor to depression to indicate the proportion of the effect that is mediated, with larger (proportionate) mediation being 'preferred'; at the extreme, drops to zero reflect full mediation, which may be considered as providing a better explanation than partial mediation.

In the MPS-H → USA model, the drop represents 47.5% of the total predictor effect, i.e., 47.5% of the predictor effect is mediated, whereas in the USA → MPS-H model, only 17.6% of the predictor effect is mediated. For the second pair of models, whilst the USA → PQ (Negative) model is a marginally better fit, the predictor effect is only 23.5% mediated, in comparison to the PQ (Negative) → USA model, where the predictor effect is 46.5% mediated. Based upon these observations, a preference might be expressed for the MPS-H → USA and PQ (Negative) → USA models (and thus, for the generic Flett model).

The first two pairs of models cannot be objectively ranked because each one contains a saturated sub-model (essentially a triad of variables) consisting of predictor, mediator, and dependent variable, and the paths between each of these are all significant. In such models, where levels of association are sufficient, mediation can be demonstrated in more than one direction (e.g., A → B → C; or B → A → C), but little assistance is provided for preferring one over the other, except 'rules of thumb', such as a drop in effect, discussed above. This problem does not, however, apply to the third pair of models, where a clear difference may be observed: in the PQ (Core) → USA model, unconditional self-acceptance fully mediates the effect of perfectionist tendencies on depression, whereas, in the USA → PQ (Core) model, no mediation takes place.

Overall, therefore, the analysis of mediation lends greater support to the generic Flett model (i.e., that perfectionism mediates the effect of unconditional self-acceptance on depression) than to the alternative model. There is clear support for this when perfectionism is measured as a core construct, and marginal support in models using other measures of perfectionism. Added to this, Flett et al.'s (2003) original model provides a good fit for two different data samples, which provides further strong support. If we accept the generic Flett model, however, we need to consider how to reconcile it with the theory expounded earlier, which argued for the alternative. One possible explanation, albeit *post-hoc*, is that the *development* of perfectionism may differ from its *operation*, and that the views of Horney (1950), Hollender (1965), and others, may better reflect the developmental process. To explore this possibility it is necessary to first consider what that developmental process might be.

As individuals '*like to feel good*' (Becker, 1968, cited in Brown, 1998), self-worth is a strong motivator i.e., individuals will act in

ways that promote feelings of self-worth. Throughout development, feelings of self-worth become increasingly dependent upon the approval of others, and where such approval is excessively contingent on performance, self-worth becomes similarly contingent. In these circumstances, the child pursues ever-increasing levels of performance, and ultimately perfection, as a way of promoting feelings of self-worth. Thus, developmentally, contingent self-worth, or low levels of unconditional self-acceptance, may lead to the pursuit of perfection, which is consistent with the theories of Horney (1950) and others.

Although described as developmental, the process may continue throughout an individual's life; however, once a 'core' of perfectionist tendencies has been established, the path suggested by Flett et al. (2003) also becomes possible i.e., perfectionism can then lead to low levels of unconditional self-acceptance. The PQ (Negative) → USA model explains how this might occur, by showing that perfectionist consequences fully mediate the effect of perfectionist tendencies on unconditional self-acceptance, which could be interpreted as perfectionism lowering unconditional self-acceptance via its consequences: i.e., negative consequences 'prove' to the perfectionist that not achieving perfectionism 'hurts', which reinforces the message that self-worth depends on success (i.e., that it is conditional), which decreases unconditional self-acceptance. Adopting this perspective, a full *operational* model would reflect perfectionist tendencies (or core perfectionism) leading to perfectionist consequences (or negative aspects), which lead to low levels of unconditional self-acceptance, which lead to depression. In practice, as already suggested, the *developmental* model may continue alongside the *operational* model, resulting in reciprocal influence between perfectionism and unconditional self-acceptance. If so, the constructs would be mutually reinforcing, which could explain both the stability and persistence of perfectionism, as well as the equivocal results obtained across different studies. As noted above, however, this is a *post-hoc* explanation, and therefore 'speculative', but it provides the basis for further future research.

To summarize, the present study advances research into perfectionism in a number of areas: it supports and extends previous findings of significant levels of association between perfectionism, unconditional self-acceptance, and depression, using different measures of perfectionism; it provides empirical support for the view that the negative aspects of perfectionism, rather than perfectionism *per se*, lead to depression; it provides support for the concept of

perfectionism as a neutral core construct with positive and negative consequences, as measured by the Perfectionism Questionnaire (Rhéaume et al., 1995b) (although it questions the validity of dysfunctional perfectionism, as derived from that measure); and, finally, it provides strong support for the model proposed by Flett et al. (2003), that unconditional self-acceptance mediates the effect of socially prescribed perfectionism on depression, and proposes a generic version incorporating the core construct of perfectionism; in so doing, it draws a distinction between developmental and operational relationships with perfectionism, and suggests that this may enable differing theoretical perspectives and empirical findings to be reconciled.

These findings must, however, be interpreted within the context of certain limitations inherent in the study. Firstly, the raw data are provided by self-report questionnaires and may therefore be susceptible to bias. Enns and Cox (2002) have commented, however, that there is strong evidence for the validity of existing self-report measures, and doubt whether alternative methods, such as observer ratings would justify the additional time and effort required. Secondly, the findings are based upon structural equation models, which are derived from correlations. Whilst such models can provide valuable *support* for causal theories, by establishing whether or not the data are consistent with causal predictions, the issue of causality can only be definitively addressed by longitudinal studies. If longitudinal studies were to be undertaken, they could also usefully investigate whether there is, indeed, a difference between developmental and operational models. Finally, because the sample was a non-clinical one, individual depression scores spanned the entire range of the CES-D. With a clinical sample (i.e., one restricted to participants suffering from severe depression) the reduced range of depression scores may result in different correlations. The conclusions of this study cannot, therefore, be generalized to clinical levels of depression without further research.

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