

Perfectionistic Self-Presentation Mediates the Relationship Between Perfectionistic Concerns
and Subjective Well-Being: A Three-Wave Longitudinal Study

Sean P. Mackinnon^{a*} and Simon B. Sherry^{ab}

^aDepartment of Psychology, Dalhousie University, 1355 Oxford Street, PO Box 15000, Halifax,
Nova Scotia, Canada B3H4R2

^bDepartment of Psychiatry, Dalhousie University, 5909 Veteran's Memorial Lane, Halifax, Nova
Scotia, Canada B3H2E2

*Corresponding author. Tel.: 1-902-494-7719; fax: 1-902-494-6585.

E-mail address: mackinnon.sean@gmail.com (S.P. Mackinnon)

NOTICE: This is the author's version of a work accepted for publication by Elsevier. The original publication is available at: <http://www.journals.elsevier.com/personality-and-individual-differences/>

Mackinnon, S. P., & Sherry, S. B. (in press). Perfectionistic self-presentation mediates the relationship between perfectionistic concerns and subjective well-being: A three-wave longitudinal study. *Personality and Individual Differences*. doi: 10.1016/j.paid.2012.02.010

Abstract

Dimensions of perfectionism are often proposed, but seldom integrated. Perfectionistic concerns and perfectionistic strivings were conceptualized as traits (core, relatively unchanging aspects of personality) and perfectionistic self-presentation as a characteristic adaptation (a contextualized cognitive-behavioral strategy). Theory suggests traits predispose people to engage in corresponding characteristic adaptations, and that perfectionistic concerns confer vulnerability for subjective well-being (SWB). It was hypothesized that perfectionistic concerns—but not perfectionistic strivings—would have an indirect effect on SWB through perfectionistic self-presentation. Young adults (ages 18-24) transitioning into university for the first time ($N = 127$) participated in a three-wave, 130-day longitudinal study. As hypothesized, perfectionistic self-presentation mediated the relationship between perfectionistic concerns and SWB. In contrast, perfectionistic strivings did not predict longitudinal change in perfectionistic self-presentation or SWB. This research integrates prior theory, and provides a novel test of hypotheses using longitudinal data.

Keywords: perfectionism; self-presentation; well-being; longitudinal; young adulthood

1. Introduction

Most personality research focuses on stable personality traits which crystallize by midlife. This level of personality is referred to as primary stabilities (Wakefield, 1989), the “having” aspect of personality (Cantor, 1990), basic tendencies (McCrae & Costa, 1999), traits (Fleeson & Leicht, 2006) and dispositional signatures (McAdams & Pals, 2006). This first level of personality is thought of as core, relatively unchanging attributes and behavioural tendencies of people. This level represents internal features of people that do not rely on specific contexts or situations. For instance, people high in neuroticism are thought to experience negative affect more strongly than other people, regardless of the situation (Nettle, 2009). We refer to this level of personality as a “trait.”

Human individuality is not composed of traits alone. Theorists propose a second level of personality, which is referred to as secondary stabilities (Wakefield, 1989), the “doing” aspect of personality (Cantor, 1990), states (Fleeson & Leicht, 2006), or characteristic adaptations (McCrae & Costa, 1999; McAdams & Pals, 2006). This level refers to cognitive and behavioural strategies used by individuals to deal with everyday demands of life and includes contextualized features of personality which are contingent on particular situations or developmental milestones. For instance, people are unlikely to be intrinsically motivated in all situations, so intrinsic motivation is best conceptualized at this level. We refer to this level of personality as a “characteristic adaptation.”

1.1 Perfectionism: Trait or characteristic adaptation?

There is growing consensus on two major dimensions of perfectionism: Perfectionistic concerns and perfectionistic strivings (Dunkley, Zuroff, & Blankstein, 2003; Stoeber & Otto, 2006). Perfectionistic concerns include doubts about personal abilities, extreme concern over

mistakes and being evaluated, and strong negative reactions to perceived failure. Perfectionistic strivings include rigidly and ceaselessly demanding perfection of oneself. These dimensions combine constructs from two dominant perfectionism research traditions: Cognitive-behavioral theory (Frost, Marten, Lahart, & Rosenblate, 1990) and personality/interpersonal theory (Hewitt & Flett, 1991). Evidence suggests perfectionistic concerns and perfectionistic strivings are stable, trait-like aspects of perfectionism (Graham et al., 2010; Hewitt & Flett, 1991; Rice & Aldea, 2006). Theory and research suggest these dimensions are not context-specific and widely impact virtually all aspects of a person's life (Hewitt, Flett, Besser, Sherry, & McGee, 2003a). These dimensions are best considered a "trait."

However, perfectionistic self-presentation is better conceptualized as a characteristic adaptation. Hewitt et al. (2003b) identified three components of perfectionistic self-presentation: Perfectionistic self-promotion (showcasing one's supposed perfection), nondisplay of imperfection (concealing one's imperfect behaviours), and nondisclosure of imperfection (avoiding verbal admissions of imperfection). Perfectionistic self-presentation is a contextual, situationally-activated social strategy that becomes more salient in certain relational contexts (Hewitt et al., 2003b), which is within the purview of characteristic adaptations. Consistent with this conceptualization, daily diary research shows self-concealment—a close analogue of nondisplay of imperfection—changes from day-to-day (Uysal, Lin, & Knee, 2010).

McCrae and Costa (1999) assert traits (perfectionistic concerns) will predict increases in characteristic adaptations (perfectionistic self-presentation), rather than the reverse. Supporting this idea, participants with high levels of perfectionistic concerns show greater desire to keep their mistakes and personal information secret (Kawamura & Frost, 2004), even when it would

be clearly advantageous to discuss their problems or limitations (Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008).

1.2 Vulnerability models of perfectionism and subjective well-being

We test a theoretical model of perfectionism which includes traits, characteristic adaptations and subjective well-being (SWB). SWB includes presence of positive affect, absence of negative affect, and general life satisfaction (Busseri & Sadava, 2011). We use a composite model of SWB, which involves summing all three components into a single composite variable. We prefer a composite model to a separate components model (i.e., viewing all three components as separate, orthogonal constructs) because of intercorrelations among SWB components, and because factor analyses support a single underlying factor (Linley, Maltby, Wood, Osborne, & Hurling, 2009). Personality strongly predicts SWB and setting realistic aspirations congruent with one's personal resources is important (Diener, Suh, Lucas, & Smith, 1999). One widely researched model asserts perfectionism confers vulnerability for decreased SWB, but not the reverse (Hewitt & Flett, 2002). Longitudinal research suggests perfectionistic concerns confer vulnerability for decreased SWB (Chang, 2000; Graham et al., 2010; Rice & Aldea, 2006). Perfectionistic self-presentation also confers vulnerability for decreased SWB in longitudinal research (Uysal et al., 2010). Results for perfectionistic strivings are inconsistent, with most research suggesting null relationships with SWB (Graham et al., 2010; Hill, Huelsman, & Araujo, 2010). Moreover, perfectionistic strivings are largely unrelated to depressive symptoms and perfectionistic self-presentation once perfectionistic concerns are taken into account (Graham et al., 2010).

1.3 Rationale and hypotheses

Most perfectionism research focuses on negative affect, rather than absence of positive outcomes. We advance past work by using a more comprehensive measure of functioning which encompasses both positive and negative components of SWB. There is also a shortage of multi-wave longitudinal research in perfectionism literature. Research using more than two waves of data is necessary to make stronger causal inferences about directionality, and is particularly persuasive when examining developmentally important periods of time where change is expected (Cole & Maxwell, 2003). Our research uses a three-wave, 130-day design to study transition to university, following freshman students across their first two semesters at university—a developmental transition associated with changes in personality and SWB (Lodi-Smith, Geise, Roberts, & Robins, 2009). We also use a longitudinal panel test of mediation (Cole & Maxwell, 2003), which represents one of the strongest tests of mediation in the perfectionism literature to date.

Two hypotheses are proposed: (a) Perfectionistic concerns will indirectly affect SWB through perfectionistic self-presentation when controlling for perfectionistic strivings (Figure 1); (b) perfectionistic strivings will not predict longitudinal change in perfectionistic self-presentation or SWB when controlling for perfectionistic concerns.

2. Method

2.1 Participants

Participants ($N = 127$; 77.9% women) were first-year undergraduates attending university for the first time. Participants averaged 18.31 years of age ($SD = 0.80$) and ranged from 18 to 24 years. Participants self-identified as Caucasian (81.1%), Asian (5.5%), Black (3.9%), Arabic (3.9%), or “other” (5.6%). This sample is comparable to prior samples of undergraduates at XXXX University (Graham et al., 2010).

2.2 Materials

Participants were directed to respond to items using a timeframe. A long-term timeframe (“during the past several years”) was used for perfectionistic strivings and perfectionistic concerns, consistent with our conceptualization of these variables as traits. A 7-day timeframe (“during the past 7 days”) was used for perfectionistic self-presentation and SWB, consistent with our conceptualization of perfectionistic self-presentation as a characteristic adaptation and SWB as a malleable outcome.

2.2.1 Perfectionistic concerns

Perfectionistic concerns was measured by standardizing and summing items from three short-form subscales developed by Cox, Enns, and Clara (2002): The 5-item socially prescribed perfectionism subscale (“The better I do, the better I am expected to do;” Hewitt & Flett, 1991), the 5-item concern over mistakes subscale (“If I fail at work/school, I am a failure as a person;” Frost et al., 1990), and the 4-item doubts about actions subscale (“Even when I do something very carefully, I often feel that it is not quite right;” Frost et al., 1990). Participants responded to socially prescribed perfectionism items using 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants responded to concern over mistakes and doubts about actions items using 5-point scales from 1 (*strongly disagree*) to 5 (*strongly agree*). Research supports the reliability and validity of this measure (Graham et al., 2010). We removed one item from Cox et al.’s (2002) 5-item concern over mistakes subscale (“The fewer mistakes I make, the more people will like me”) because of overlap in content with perfectionistic self-presentation.

2.2.2 Perfectionistic strivings

Perfectionistic strivings was measured by standardizing and summing items from three short-form subscales: A 5-item self-oriented perfectionism subscale (“I strive to be as perfect as I

can be;” Cox et al., 2002; Hewitt & Flett, 1991), a 4-item personal standards subscale (“I set higher goals than most people;” Frost et al., 1990; Cox et al., 2002), and a 4-item self-oriented perfectionism subscale based on the Eating Disorder Inventory (“I hate being less than best at things;” Garner, Olmstead, & Polivy, 1983; McGrath et al., submitted). Participants responded to Hewitt and Flett’s (1991) self-oriented perfectionism items using 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants responded to personal standards items using 5-point scales from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants responded to Garner et al.’s (1983) self-oriented perfectionism items using 6-point scales from 1 (*never*) to 6 (*always*). Research supports the reliability and validity of this measure (McGrath et al., submitted).

2.2.3 *Perfectionistic self-presentation*

Perfectionistic self-presentation was measured by summing the 10-item perfectionistic self-promotion subscale (“I always tried to present a picture of perfection”), the 10-item nondisplay of imperfection subscale (“I hated to make errors in public”), and the 7-item nondisclosure of imperfection subscale (“I always kept my problems to myself”) of the Perfectionistic Self Presentation Scale (Hewitt et al., 2003b). Participants responded to items using 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Research supports the reliability and validity of this measure (Hewitt et al., 2003b).

2.2.4 *Subjective well-being*

Subjective well-being (SWB) was measured by summing and standardizing items from three subscales: A 10-item positive affect subscale (“Inspired;” Watson, Clark, & Tellegen, 1988), a 10-item negative affect scale (“Distressed;” Watson et al., 1988) and the 5-item Satisfaction with Life Scale (“I was satisfied with my life;” Diener, Emmons, Larson, & Griffin,

1985). Negative affect was reverse-coded such that higher values equal higher SWB. Participants responded to the positive and negative affect scales using 5-point scales from 1 (*very slightly or not at all*) to 5 (*extremely*). Participants responded to the Satisfaction with Life Scale using 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Research supports the use of summed total scores (Busseri & Sadava, 2011) and the reliability and validity of this measure (Linley et al., 2009).

2.3 Procedure

Students signed up for the study by contacting researchers via email. Participants learned about the study from four sources: Flyers ($N = 56$), class announcements ($N = 54$), subject pool ($N = 24$), and word-of-mouth ($N = 14$). Participants were screened for inclusion criteria before completing questionnaires (i.e., first year student between ages 18-25 attending post-secondary education for the first time). Eligible participants completed pen-and-paper questionnaires in a laboratory across a three-wave, 130-day study. All participants completed Wave 1 within the first 50 days of fall term. Participants were scheduled to complete Wave 2 during second half of fall term (45 days after Wave 1) and Wave 3 at the beginning of winter term (130 days after Wave 1). Questionnaires were identical across waves. Participants were provided with phone and email reminders and monetary incentive (\$25.00-\$55.00) to complete their assessments as scheduled. All 127 participants (100.0%) completed Wave 1; 125 participants (98.4%) completed Wave 2; and 115 participants (90.6%) completed Wave 3. Wave 2 occurred 44.96 ($SD = 4.97$) days after Wave 1, and Wave 3 occurred 133.18 ($SD = 8.08$) days after Wave 1, on average.

3. Results

3.1 Data analytic strategy

Overall, 6.3% of data were missing and covariance coverage ranged from 0.86 to 0.97. Listwise deletion was used for preliminary analyses and full information maximum likelihood estimation was used for hypothesis testing. In path analyses, we used MLR estimation in Mplus 6.0, which is robust against violations of multivariate normality (Muthen & Muthen, 2010). Model fit was assessed using multiple fit indices. Well-fitting models are suggested by a comparative fit index (CFI) and a Tucker-Lewis index (TLI) around .95 and a root-mean-square error of approximation (RMSEA) less than .06 (Kline, 2005).

Mediation occurs if independent variables (perfectionistic concerns) lead to the mediator (perfectionistic self-presentation), which in turn leads to the dependant variable (SWB). We used Cole and Maxwell's (2003) procedure for testing mediation with longitudinal data (Figure 1). This improves on cross-sectional mediation by controlling for prior levels of variables at Wave 1 and Wave 2, allowing researchers to examine rank-order change in outcomes over time. Indirect effects were calculated by multiplying paths from the independent variable to the mediator (a-paths) by paths from the mediator to the outcome (b-paths). When indirect effects are statistically significant, mediation has occurred. Statistical significance of indirect effects were calculated using bias-corrected bootstrapping with 20,000 resamples. If 95% bootstrapped confidence intervals (95% CI) do not contain zero, mediation has occurred (Little, Preacher, Selig, & Card, 2007). Bootstrapping is a nonparametric alternative used because the indirect effect typically has a skewed distribution. When model comparison tests are conducted, we used Δ CFI. Models are significantly different from one another if Δ CFI > -0.01 (Cheung & Rensvold, 2002). When conducting tests of equivalence, we compared the unconstrained model (i.e., all paths allowed to freely vary) with a constrained model (i.e., paths constrained to equality across waves). If model fit significantly worsens when constraints are added, equivalence across waves cannot be

assumed. The most parsimonious model is the constrained model, which assumes relationships do not vary across different time lags. Two types of correlated error were specified a priori: (a) Within-trait, cross-wave correlated error and (b) same-trait, within-wave correlated error (Cole & Maxwell, 2003). These correlated error terms are used to account for violations of the independence assumption which typically occurs in longitudinal research. Wave 1 perfectionistic strivings was entered as a control variable by allowing it to correlate with all Wave 1 variables, and by including paths to perfectionistic self-presentation at Waves 2 and 3.

3.2 Preliminary analyses

Means and standard deviations appear in Table 1 and bivariate correlations appear in Table 2. Means fell within one standard deviation of means from past studies of undergraduates (Graham et al., 2010). Alpha reliabilities ranged from .89 to .96, and test-retest correlations ranged from .60 to .91, supporting reliability. Perfectionistic strivings, perfectionistic concerns, and perfectionistic self-presentation were strongly correlated across waves (r s from .45 to .79). SWB was strongly and negatively correlated with perfectionistic concerns and self-presentation (r s from -.42 to -.61), but more weakly correlated with perfectionistic strivings (r s from -.15 to -.38) across waves. Perfectionistic strivings were uncorrelated with perfectionistic self-presentation and SWB at Waves 2 and 3 once controlling for perfectionistic concerns (r s from .00 to .12; p s > .05)

3.3 Discriminant validity

Though the correlation between perfectionistic concerns and perfectionistic self-presentation at Wave 1 was large ($r = .79$), the bias-corrected, bootstrapped 95% CI for this correlation ranged from .71 to .84. Because the 95% CI does not include 1.0, this provides

evidence of discriminant validity (Anderson & Gerbing, 1988). See Hewitt et al. (2003b) for further data supporting the discriminant validity of perfectionistic self-presentation.

3.4 Path analysis

Cole and Maxwell's (2003) procedure for testing mediation was used (see Figure 1). We first conducted tests of equivalence to determine if paths could be constrained to equality across waves. The unconstrained model was not a significant improvement over the constrained model, $\Delta CFI = -.003$. Thus, we constrained all paths to equality across waves. The direct effect from perfectionistic concerns to SWB ($\beta = -.05, p > .05$) and the direct effect from perfectionistic strivings to SWB ($\beta = -.04, p > .05$) were both nonsignificant, and did not improve model fit, $\Delta CFI = .001$. These paths were not added to the final model. The model in Figure 2 fit the data well: $\chi^2(N = 127) = 33.66, p = .07; \chi^2/df = 1.46; CFI = .99; TLI = .98; RMSEA = .06$ (90% CI: .00, .10). The bias-corrected, bootstrapped indirect effect from perfectionistic concerns to SWB through perfectionistic self-presentation was statistically significant, 95% CI [-.005, -.0003]. Standardized paths in Figure 2 differ slightly despite equality constraints (see Kline, 2005).

Perfectionistic strivings was positively correlated with wave 1 perfectionistic concerns ($\beta = .58, p < .001$), wave 1 perfectionistic self-presentation ($\beta = .53, p < .001$), and wave 1 SWB ($\beta = -.18, p < .05$). However, paths from perfectionistic strivings to perfectionistic self-presentation at waves 2 and 3 were nonsignificant ($\beta = -.02, p > .05$). The indirect effect of perfectionistic strivings on SWB through perfectionistic self-presentation was also nonsignificant, 95% CI [-.005, .016].

Alternative models of SWB suggest positive affect, negative affect and life satisfaction are orthogonal constructs (Busseri & Sadava, 2011). Data were re-analyzed examining each SWB component separately. Mediation occurred when predicting positive affect and negative

affect, but not life satisfaction. Perfectionistic concerns had an indirect effect on positive affect through perfectionistic self-presentation, 95% CI [-.03, -.001]. A similar indirect effect was found for negative affect, 95% CI [.0005, .041], but not life satisfaction, 95% CI [-.03, .002].

4. Discussion

Both hypotheses were supported. Perfectionistic concerns indirectly affected SWB through perfectionistic self-presentation, supporting our first hypothesis. Our longitudinal approach to mediation allows for stronger causal inferences compared to cross-sectional data and two-wave longitudinal designs (Little et al., 2007). Results are consistent with personality theory suggesting traits (e.g., perfectionistic concerns) predict changes in characteristic adaptations (e.g., perfectionistic self-presentation) over time (McCrae & Costa, 1999). These results are also consistent with theory and research suggesting both perfectionistic concerns and perfectionistic self-presentation confer vulnerability to psychopathology and decreased well-being (Hewitt & Flett, 2002). Moreover, perfectionism variables exhibited strong rank-order stability over time. Relatively few studies present test-retest correlations for perfectionism variables, so these results represent an important psychometric contribution.

As hypothesized, perfectionistic strivings did not predict longitudinal change in perfectionistic self-presentation or SWB when controlling for perfectionistic concerns. Research suggests personal standards (Frost et al., 1990)—a key component of perfectionistic strivings—are uncorrelated with nondisclosure of imperfection, nondisplay of imperfection, and self-concealment (Hewitt et al., 2003b; Kawamura & Frost, 2004). Research also suggests perfectionistic strivings are inconsistently related to SWB; negative relationships between perfectionistic strivings and SWB tend to disappear once perfectionistic concerns are controlled for (Hill et al., 2010; Graham et al., 2010).

When components of SWB were analyzed separately, perfectionistic self-presentation predicted change in positive and negative affect, but not life satisfaction. Perfectionistic self-presentation may be more strongly linked to affective components of well-being than cognitive appraisals of global life satisfaction. This inference is made cautiously, as this finding is in need of replication.

4.1 Theoretical Implications

Despite numerous calls to return to more comprehensive models of personality where multiple levels of personality are meaningfully integrated, examples of such models are scarce. By situating perfectionism research within broader integrative personality frameworks suggested by McCrae and Costa (1999), McAdams and Pals (2006), and others, we are able to better understand personality as a dynamic system. Within this framework, enduring traits increase the likelihood people will think, feel, or act in a particular way within any given situation (i.e., their characteristic adaptations). For most practical purposes, characteristic adaptations should have the most influence on a person's well-being. People high in perfectionistic concerns may not be intrinsically less happy than other people; instead, they might characteristically behave and think in ways which impede their happiness. Perfectionistic concerns involve a dispositional tendency to perceive others as critical and demanding, so perfectionistic self-presentation may represent a "solution" to this problem. However, this seeming solution is not without consequence: Presenting a false, "perfect" self comes at the expense of subjective well being. By engaging in perfectionistic self-presentation, others are by necessity kept at a distance. In many relationships, development of intimacy is strongly dependant on mutual self-disclosure (Sprecher & Hendrick, 2004). Developing close, intimate relationships is a core developmental task for emerging adults

(Arnett, 2000), so characteristic adaptations (e.g., perfectionistic self-presentation) which impede development of intimacy are also likely to undermine SWB.

4.2 Limitations and Future Research

We did not have sufficient statistical power to use structural equation modelling—a more valid analytic technique that better accounts for measurement error. Future studies should collect larger samples and use this superior analytic technique. This study also used a relatively short-term, 130-day measurement schedule. Given that personality change tends to be gradual (Lodi-Smith et al., 2009), future research might benefit from longer lags between measurement occasions. Finally, this study relied exclusively on self-report questionnaires. McAdams and Pals (2006) suggest autobiographical narratives are another key aspect of personality. In their view, autobiographical narratives are necessary to form a comprehensive picture of the whole person; future research could integrate traits, characteristic adaptations and autobiographical narratives into a single model.

4.3 Conclusions

Our study tested an integrative model of perfectionistic concerns, perfectionistic self-presentation, and SWB which not only draws on theory and research on perfectionism literature (Hewitt & Flett, 2002), but also broad theories of personality (McCrae & Costa, 1999; McAdams & Pals, 2006). This research has theoretical importance for work on perfectionism. By conceptualizing perfectionistic personality as a dynamic system, we can develop greater understanding of processes which contribute to SWB, and ultimately how to help people lead happier, more fulfilling lives.

References

- Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice. *Psychological Bulletin, 103*, 411-423. doi:10.1037/0033-2909.103.3.411
- Arnett, J.J. (2000). Emerging adulthood. *American Psychologist, 55*, 469-480. doi:10.1037/0003-066X.55.5.469
- Busseri, M.A., & Sadava, S.W. (2011). A review of the tripartite structure of subjective well-being. *Personality and Social Psychology Review, 15*, 209-314. doi:10.1177/1088868310391271
- Cantor, N. (1990). From thought to behavior: 'Having' and 'doing' in the study of personality and cognition. *American Psychologist, 45*, 735-750. doi:10.1037/0003-066X.45.6.735
- Chang, E.C. (2000). Perfectionism as a predictor of positive and negative psychological outcomes. *Journal of Counseling Psychology, 47*, 18-26. doi:10.1037/0022-0167.47.1.18
- Cheung, G.W., & Rensvold, R.B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233-255. doi:10.1207/S15328007SEM0902_5
- Cole, D.A., & Maxwell, S.E. (2003). Testing mediational models with longitudinal data. *Journal of Abnormal Psychology, 112*, 558-577. doi:10.1037/0021-843X.112.4.558
- Cox, B.J., Enns, M.W., & Clara, I.P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment, 14*, 365-373. doi:10.1037/1040-3590.14.3.365
- Diener, E., Emmons, R.A., Larson, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.

- Diener, E., Suh, E. M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being. *Psychological Bulletin*, *125*, 276-302. doi:10.1037/0033-2909.125.2.276
- Dunkley, D.M., Zuroff, D.C., & Blankstein, K.R. (2003). Self-critical perfectionism and daily affect. *Journal of Personality and Social Psychology*, *84*, 234-252. doi:10.1037/0022-3514.84.1.234
- Fleeson, W., & Leicht, C. (2006). On delineating and integrating the study of variability and stability in personality psychology. *Journal of Research in Personality*, *40*, 5-20. doi:10.1016/j.jrp.2005.08.004
- Frost, R.O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, *14*, 449-468. doi:10.1007/BF01172967
- Garner, D.M., Olmstead, M.P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, *2*, 15-34. doi:10.1002/1098-108X(198321)2:2<15::AID-EAT2260020203>3.0.CO;2-6
- Graham, A.R., Sherry, S.B., Stewart, S.H., Sherry, D.L., McGrath, D., ... & Allen, S.L. (2010). The existential model of perfectionism and depressive symptoms. *Journal of Counseling Psychology*, *57*, 423-438. doi: 10.1037/a0020667
- Hewitt, P.L., & Flett, G.L. (1991). Perfectionism in the self and social contexts. *Journal of Personality and Social Psychology*, *60*, 456-470. doi:10.1037/0022-3514.60.3.456
- Hewitt, P.L., & Flett, G.L. (2002). Perfectionism and stress processes in psychopathology. In G.L. Flett & P.L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 255-284). Washington, DC: American Psychological Association. doi:10.1037/10458-011

- Hewitt, P.L., Flett, G.L., Besser, A.A., Sherry, S.B., & McGee, B. (2003a). Perfectionism is multidimensional (2002). *Behaviour Research and Therapy*, *41*, 1221-1236.
doi:10.1016/S0005-7967(03)00021-4
- Hewitt, P.L., Flett, G.L., Sherry, S.B., Habke, M., Parkin, M., Lam, R.W., & ... Stein, M.B. (2003b). The interpersonal expression of perfection. *Journal of Personality and Social Psychology*, *84*, 1303-1325. doi:10.1037/0022-3514.84.6.1303
- Hewitt, P.L., Habke, A., Lee-Baggley, D.L., Sherry, S.B., & Flett, G.L. (2008). The impact of perfectionistic self-presentation on the cognitive, affective, and physiological experience of a clinical interview. *Psychiatry: Interpersonal and Biological Processes*, *71*, 93-122.
doi:10.1521/psyc.2008.71.2.93
- Hill, R.W., Huelsman, T.J., & Araujo, G. (2010). Perfectionistic concerns suppress associations between perfectionistic strivings and positive life outcomes. *Personality and Individual Differences*, *48*, 584-589. doi:10.1016/j.paid.2009.12.011
- Kawamura, K.Y., & Frost, R.O. (2004). Self-Concealment as a mediator in the relationship between perfectionism and psychological distress. *Cognitive Therapy and Research*, *28*, 183-191. doi:10.1023/B:COTR.0000021539.48926.c1
- Kline, R.B. (2005). *Principles and practice of structural equation modeling*. New York, NY: Guilford.
- Linley, P., Maltby, J., Wood, A.M., Osborne, G., & Hurling, R. (2009). Measuring happiness. *Personality and Individual Differences*, *47*, 878-884.
doi:10.1016/j.paid.2009.07.010

- Little, T.D., Preacher, K.J., Selig, J.P., & Card, N.A. (2007). New developments in latent variable panel analyses of longitudinal data. *International Journal of Behavioral Development, 31*, 357-365. doi:10.1177/0165025407077757
- Lodi-Smith, J., Geise, A.C., Roberts, B.W., & Robins, R.W. (2009). Narrating personality change. *Journal of Personality and Social Psychology, 96*, 679-689.
doi:10.1037/a0014611
- McAdams, D.P., & Pals, J.L. (2006). A new big five. *American Psychologist, 61*, 204-217.
doi:10.1037/0003-066X.61.3.204
- McCrae, R.R., & Costa, P.R. (1999). A five-factor theory of personality. In L.A. Pervin, O.P. John (Eds.), *Handbook of personality: Theory and research (2nd ed.)* (pp. 139-153). New York, NY: Guilford.
- McGrath, D.S., Sherry, S.B., Stewart, S.H., Graham, A.R., Sherry, D.L., ... & Nealis, L.J. (submitted). *Reciprocal relations between self-critical perfectionism and depressive symptoms.*
- Muthen, L.K. & Muthen, B.O. (2010). *Mplus User's Guide (6th ed.)*. Los Angeles, CA: Muthen & Muthen.
- Nettle, D. (2009). *Personality: What makes you the way you are*. New York, NY: Oxford.
- Rice, K.G., & Aldea, M.A. (2006). State dependence and trait stability of perfectionism. *Journal of Counseling Psychology, 53*, 205-213. doi:10.1037/0022-0167.53.2.205
- Sprecher, S., & Hendrick, S.S. (2004). Self-disclosure in intimate relationships. *Journal of Social and Clinical Psychology, 23*, 857-877. doi:10.1521/jscp.23.6.857.54803

- Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism. *Personality and Social Psychology Review, 10*, 295-319. doi:10.1207/s15327957pspr1004_2
- Uysal, A., Lin, H.L. & Knee, R.C. (2010). The role of need satisfaction in self-concealment and well-being. *Personality and Social Psychology Bulletin, 36*, 187-199.
doi:10.1177/0146167209354518
- Wakefield, J.C. (1989). Levels of explanation in personality theory. In D.M. Buss & N. Cantor (Eds.), *Emerging issues in personality psychology* (pp. 333–346). New York, NY: Springer-Verlag.
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect. *Journal of Personality and Social Psychology, 54*, 1063-1070. doi:10.1037/0022-3514.54.6.1063

Table 1

Means and Standard Deviations

Variable	Wave 1		Wave 2		Wave 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Perfectionistic strivings						
HFMPs Self-oriented perfectionism	4.74	1.07	4.52	1.11	4.26	1.23
FMPS Personal standards	3.39	0.82	3.38	0.90	3.30	0.92
EDI Self-oriented perfectionism	3.24	1.08	3.19	1.13	3.22	1.12
Perfectionistic concerns						
HFMPs Socially prescribed perfectionism	3.88	1.39	3.80	1.35	3.60	1.42
FMPS Doubts about actions	2.75	0.96	2.76	0.97	2.74	1.02
FMPS Concern over mistakes	2.88	1.22	2.92	1.21	2.73	1.21
Perfectionistic self-presentation						
Perfectionistic self-promotion	3.65	1.15	3.60	1.23	3.57	1.18
Nondisplay of imperfection	4.18	1.31	3.93	1.44	3.76	1.42
Nondisclosure of imperfection	3.67	1.21	3.51	1.19	3.35	1.21
Subjective well-being						
Positive affect	3.37	0.79	3.25	0.84	3.33	0.87
Negative affect	2.15	0.69	2.17	0.81	1.98	0.74
Life satisfaction	4.52	1.42	4.65	1.39	4.81	1.51

Note. $N = 100$. HFMPs = Hewitt and Flett's (1991) Multidimensional Perfectionism Scale; FMPS = Frost et al.'s (1990) Multidimensional Perfectionism Scale; EDI = Garner et al.'s (1983) Eating Disorder Inventory. Means and standard deviations are based on averages calculated by summing all subscale items together then dividing by the number of items.

Table 2

Bivariate Correlations and Alpha Reliabilities

Variable	Wave 1				Wave 2				Wave 3				α	
	1	2	3	4	5	6	7	8	9	10	11	12		
Wave 1														
1. Perfectionistic strivings	--													.91
2. Perfectionistic concerns	.59	--												.89
3. Perfectionistic self-presentation	.57	.77	--											.95
4. Subjective well-being	-.19	-.49	-.49	--										.91
Wave 2														
5. Perfectionistic strivings	.77	.53	.45	-.16	--									.92
6. Perfectionistic concerns	.55	.91	.72	-.50	.61	--								.91
7. Perfectionistic self-presentation	.56	.72	.87	-.49	.55	.73	--							.96
8. Subjective well-being	-.15	-.43	-.43	.69	-.19	-.50	-.56	--						.92
Wave 3														
9. Perfectionistic strivings	.68	.54	.45	-.20	.81	.56	.52	-.23	--					.93
10. Perfectionistic concerns	.51	.89	.72	-.53	.51	.90	.71	-.49	.65	--				.92
11. Perfectionistic self-presentation	.46	.73	.79	-.46	.45	.72	.87	-.50	.54	.79	--			.96
12. Subjective well-being	-.27	-.49	-.42	.60	-.34	-.52	-.55	.71	-.38	-.61	-.58	--		.94

Note. $N = 100$. Test-retest correlations appear in bold. Correlations with absolute values greater than .20 are significant at $p < .05$; correlations greater than .25 are significant at $p < .01$; and correlations greater than .32 are significant at $p < .001$.

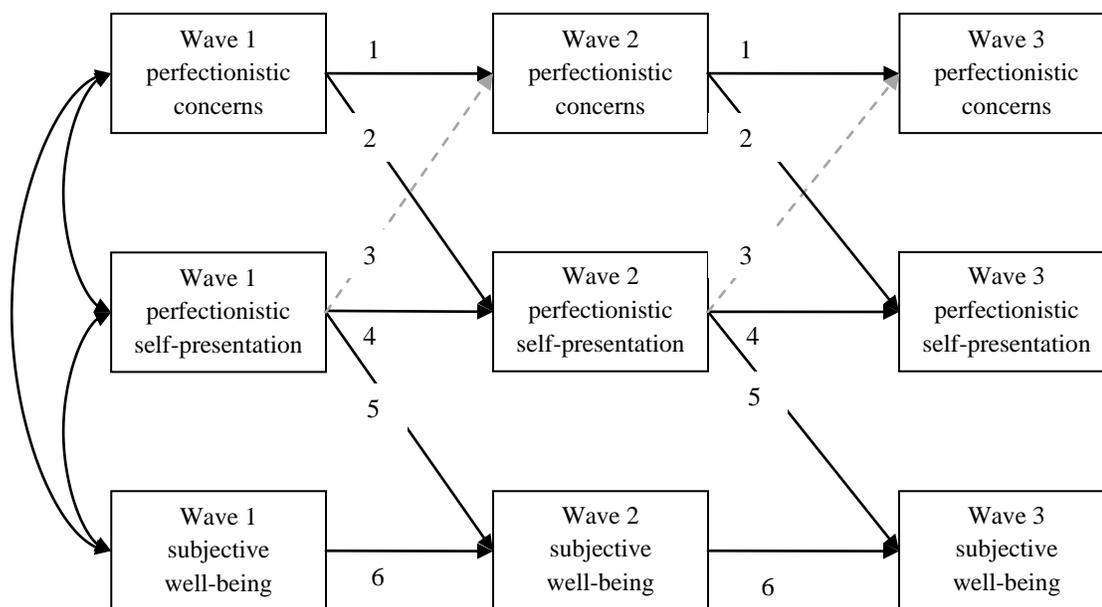


Figure 1. Cross-lagged panel model of mediation. Rectangles represent measured variables. Black arrows represent hypothesized significant effects; grey dotted arrows represent hypothesized nonsignificant effects. Paths sharing the same number were constrained to equality. The indirect effect of perfectionistic concerns on subjective well-being through perfectionistic self-presentation was calculated by multiplying paths 2 and 5. Residual error terms are not displayed. Though not shown, perfectionistic strivings was entered in the model as a control variable.

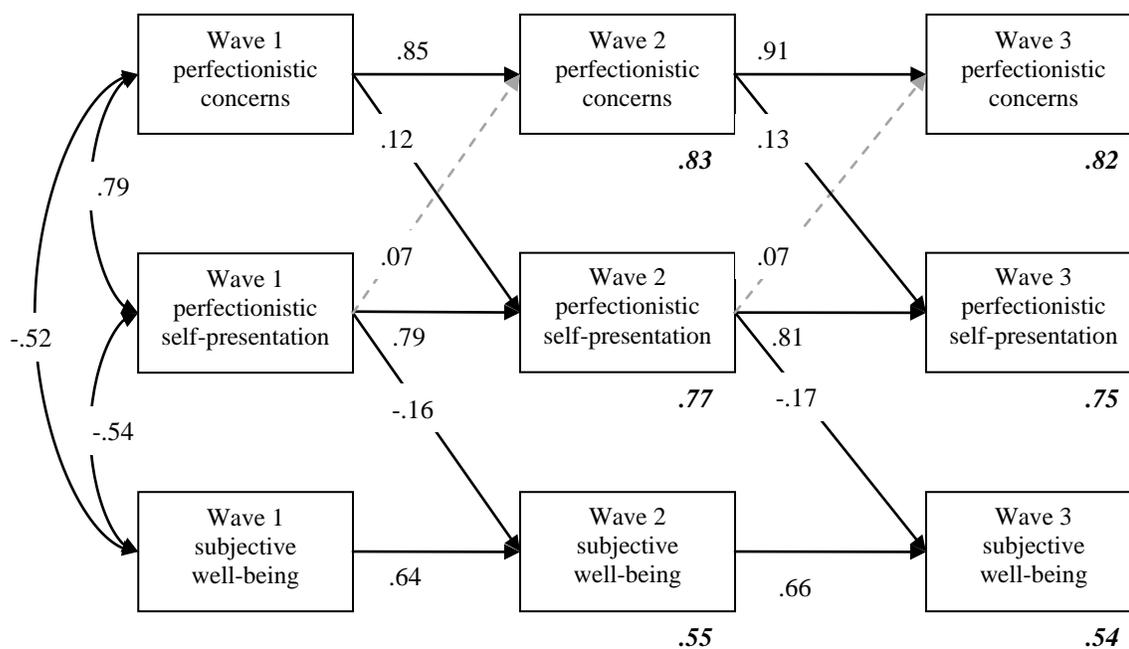


Figure 2. Cross-lagged panel test of mediation. Rectangles represent measured variables.

Numbers beside paths represent standardized path coefficients or correlations. Italicized, bolded numbers represent the proportion of variance accounted for by exogenous variables. Residual error terms are not displayed. Though not shown, perfectionistic strivings was entered in the model as a control variable. Solid black lines are statistically significant ($p < .05$). Dotted grey lines are nonsignificant ($p > .05$).