Smith, Martin M. ORCID: https://orcid.org/0000-0002-4754-3032, Sherry, Simon B., Saklofske, Donald H. and Mushqaush, Aislin R. (2017) Clarifying the perfectionism-procrastination relationship using a 7-day, 14-occasion daily diary study. Personality and Individual Differences, 112. pp. 117-123.

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Research at the University of York St John

Clarifying the Perfectionism-Procrastination Relationship Using A 7-Day, 14-Occasion Daily

Diary Study

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—Research Paper (4,980 words)—

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Highlights

- Rigorously tested perfectionistic concerns' (PC) link to procrastination.

- Studied 317 undergraduates, over seven days, using a daily diary design.

- Analyzed data using multilevel structural equation modeling.

- PC increased discrepancies, which in turn triggered procrastination.

- PC creates a gap between the actual and the ideal self, leading to procrastination.

Abstract

Perfectionistic concerns are putative risk factors for procrastination. Even so, rigorously tested models explaining why perfectionistic concerns result in procrastination are scarce. To address this our study proposed, tested, and supported a model explaining why perfectionistic concerns give rise to procrastination. This model posits perfectionistic concerns generate discrepancies (a subjective sense of falling short of one's own standards), which in turn trigger procrastination. Undergraduates ($N = 317$) completed measures of perfectionism. The following day, participants completed online questionnaires measuring discrepancies and procrastination, twice a day, for seven consecutive days. Model predictions were supported. Perfectionistic concerns had a moderate positive association with procrastination. Tests of mediation suggested perfectionistic concerns contributed to procrastination through discrepancies. And results supported the incremental validity of our model beyond perfectionistic strivings. Findings lend credence to theoretical accounts suggesting perfectionistic concerns generate a persistent paralytic gap between the actual and the ideal self that contributes to procrastinatory behavior.

Keywords: perfectionism, discrepancies, procrastination, daily diary study, multilevel structural equation modeling

1. Introduction

Procrastination is a voluntary delay of an intended course of action, despite expecting to be worse-off for the delay (Steel, 2007). Given that procrastination is linked to poor grades, time wasting, self-handicapping, negative life events, and psychological distress, researchers are increasingly interested in testing explanatory models to inform prevention and intervention efforts (e.g., Flett, Blankstein, & Martin, 1995; Steel & Ferrari, 2013). Consistent with calls to improve understanding of why people procrastinate, we used a daily diary design, in conjunction with multilevel structural equation modeling, to test the perfectionism-procrastination link, which we posit hinges on a subjective sense of falling short of one's own standards (i.e., discrepancies).

1.1. Perfectionism and procrastination

Perfectionism is a personality trait characterized by striving for flawlessness and setting excessively high standards for performance accompanied by overly critical evaluations of one's behavior (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Extensive evidence suggests two higher-order factors underlie and account for shared variance among lower-order perfectionism dimensions: perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006). Perfectionistic strivings encompass a family of traits incorporating the tendency to demand perfection of oneself (self-oriented perfectionism; Hewitt & Flett, 1991) and the propensity to hold unrealistically high personal expectations (personal standards; Frost et al., 1990). Perfectionistic concerns comprise a constellation of traits involving the tendency to perceive others as demanding perfection (socially prescribed perfectionism; Hewitt & Flett, 1991), have overly negative reactions to perceived failures (concerns over mistakes; Frost et al., 1990), and doubts about performance abilities (doubts about actions; Frost et al., 1990).

The contention that perfectionism and procrastination go hand in hand is longstanding

and widespread (e.g., Egan, Wade, & Shafran, 2011). In fact, some consider procrastination to be

quintessential to perfectionism. Perfectionism has, for instance, been defined as the tendency to

irrationally delay tasks that should be completed (Lay, 1986). Moreover, many perfectionism

measures, such as Frost et al.'s (1990) Multidimensional Perfectionism Scale, contain items

related to dilatory behavior (e.g., "I tend to get behind on my work because I repeat things over

and over"). Likewise, perfectionism and procrastination share certain characteristics such as

irrational beliefs and excessive fear of failure (Flett et al., 1995).

Several cross-sectional studies have investigated perfectionism and procrastination. In

general, traits subsumed under perfectionistic strivings (self-oriented perfectionism and personal

standards) show negative relationships with procrastination (e.g., Flett, et al., 1995; Uzun,

Bokszczanin, Ederer, & Essau, 2014). Conversely, traits subsumed under perfectionistic

concerns (socially prescribed perfectionism, concern over mistakes, doubts about actions) show

positive relationships with procrastination (Flett et al., 1995; Mushquash & Sherry, 2012; Sherry,

Stoeber, & Ramasubbu, 2016). Nonetheless, as Steel (2007) noted, the perfectionism-

procrastination link is far from robust. We contend this stems from research that neglects

perfectionism's two higher-order factors and overlooks the complex nature of procrastination as

composed of both stable trait-like elements and dynamic state-like processes.

1.2. Perfectionistic concerns and discrepancies

Perfectionistic concerns appear to give rise to harsh, negative self-interpretations (e.g.,

Mushquash & Sherry, 2012; Sherry & Hall, 2009). In fact, perfectionistic concerns set people up

to chronically be disapproving of and dissatisfied with the self. Such interpretations—which we

call discrepancies—appear to be a prototypic form of self-evaluation for people high in

perfectionistic concerns. Our study thus aligns with a long tradition of theory and research noting

people high in perfectionistic concerns are prone to believing they have fallen short of their own

standards (Horney, 1950; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Additionally, although

discrepancies overlap with perfectionistic concerns, prior research reports discrepancies are

neither redundant with nor fully captured by perfectionistic concerns (Sherry et al., 2016).

1.3. Discrepancies and procrastination

Individuals with high discrepancies are more likely to procrastinate (Flett, Stainton,

Hewitt, Sherry, & Lay, 2012; Orellana-Damacela, Tindale, & Suárez-Balcázar, 2000; Rice,

Richardson, & Clark, 2012). And discrepancies may be demotivating in ways that trigger

procrastination (Steel, 2007). Not everyone will rise to the challenge and vigorously pursue their

goals when they sense they are failing. In fact, to some, the gap between the actual and the ideal

self may be experienced as irreducible. This chronic form of discrepancy may result in a sense of

helplessness and hopelessness that is paralytic. Discrepancies may also be aversive in ways that

trigger procrastination. Active contemplation of gaps between the actual and the ideal self is

unpleasant (Orellana-Damacela et al., 2000). And procrastination may provide a means of

escaping an unpleasant sense of self-awareness, and by doing so temporarily relieve distress

(Steel, 2007).

1.4. Limitations of existing studies

Extant research on perfectionism and procrastination has several notable limitations.

First, most studies on the perfectionism-procrastination link (cf. Rice et al., 2012) use cross-

sectional designs, and the majority of these studies test mediational models. This is problematic,

as cross-sectional designs measure variables concurrently, which render tests of mediation

illusory (Cole & Maxwell, 2003). Surprisingly, true mediational analyses of the perfectionism-

procrastination link, in which perfectionism and procrastination are measured at separate time

points, are scarce. Accordingly, factors that might explain why certain perfectionism dimensions

are risk factors for procrastination remain unclear and require explication. Our model was

posited as a conceptual framework capable of filling this void.

Second, although studies have investigated the link between lower-order perfectionism dimensions and procrastination (Flett et al., 1995; Mushquash & Sherry, 2012; Sherry et al., 2016; Uzun et al., 2014), the relationship between higher-order perfectionism factors and procrastination remains to be determined. Third, while some (Egan et al., 2011) advise researchers to focus on models in which discrepancies are paramount, the role of discrepancies in the perfectionism-procrastination link remains unclear and understudied. Fourth, while the trait approach to discrepancies and procrastination predominates, there is ample evidence that situation-specific discrepancies and procrastination merits greater attention (Pychyl, Lee, Thibodeau, & Blunt, 2000; Sherry, Mackinnon, Macneil, & Fitzpatrick, 2013; Steel, 2007; Steel & Ferrari, 2013). Despite this, to date, investigations on the perfectionism-procrastination link have used either cross-sectional or longitudinal designs which, in contrast to daily diary designs, are ill-suited to studying constructs with meaningful within-person variance (Bolger, Davis, & Rafaeli, 2003). These important gaps in knowledge suggest a need for further inquiry.

1.5. The present study

Against this background, our study used multilevel structural equation modeling to evaluate whether within-person fluctuations in discrepancies are connected to within-person fluctuations in procrastination and whether between-person differences in discrepancies mediate perfectionistic concerns' relationship with procrastination. We anticipated that (a) discrepancies will increase procrastination at both within-person and between-person levels; (b) discrepancies will mediate perfectionistic concerns' relationship with procrastination; and (c) the paths predicted by our model would remain significant and largely unaltered after controlling for perfectionistic strivings. Perfectionistic strivings may suppress the relationship between perfectionistic concerns and negative outcomes (see Stoeber & Gaudreau, 2017), making

perfectionistic strivings an important covariate to include when testing the impact of

perfectionistic concerns on procrastination. Finally, we conducted a secondary analysis to test the

assertion that perfectionism has, at best, a small association with procrastination (Rice et al.,

2012; Steel, 2007; Steel & Klingsiech, 2016). In particular, we examined if such weak

associations would be observed when procrastination's within-person effects are separated from

its between-person effects.

2. Method

2.1. Participants

A sample of 317 students (247 women) was recruited via Dalhousie's participant subject

pool. Participants were compensated $10 and awarded three credits for a psychology course

mark. The mean age was 20.3 years ($SD = 4.3$). Self-reported ethnicities were 82.3% White,

5.4% Asian, 3.8% Black, 3.6% Multiracial, and 4.9% other. Most participants were in their first

(49.2%) or second (35.1%) year of study.

2.2. Measures

A long-term timeframe (during the past several years) was used to measure

perfectionistic concerns and strivings. A short-term timeframe (since your last entry) was used to

measure discrepancies and procrastination. To reduce participant burden and to increase response

rates, daily measures were shortened (see Mushquash & Sherry, 2012 for details). This approach

is common in diary studies (e.g., Sherry & Hall, 2009).[1] Perfectionistic strivings, perfectionistic

concerns, discrepancies, and procrastination were measured as latent variables, each with three

indicators; adequate internal consistency was observed (alpha $\geq$ .70; see Table 1).

2.2.1. Perfectionistic strivings

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[1]We conducted a cross-sectional supplemental study to evaluate the psychometric properties of our modified measures. A sample of 78 students (70 female) was recruited. The mean age was 20.2 ($SD = 2.57$). This supplemental study is referenced as Sherry (2017).

Perfectionistic strivings were assessed using three subscales: Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (HFMPS) self-oriented perfectionism subscale (15 items; HFMPS-SOP), Frost et al.'s (1990) Multidimensional Perfectionism Scale personal standards subscale (7 items; FMPS-PS), and Garner, Olmstead, and Polivy's (1983) Eating Disorder Inventory self-oriented perfectionism subscale (4-items; EDI-SOP; see Sherry & Hall, 2009). Participants responded to the HFMPS-SOP using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*), to the FMPS-PS using a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), and to the EDI-SOP using a 6-point scale from 1 (*never*) to 6 (*always*). Research supports the use of these three subscales to measure perfectionistic strivings (Smith, Saklofske, Yan, & Sherry, 2015). These measures have also shown adequate reliability (Smith et al., 2015).

2.2.2. Perfectionistic concerns

Perfectionistic concerns were measured using three subscales: Hewitt and Flett's (1991) HFMPS socially prescribed perfectionism subscale (15-items; HFMPS-SPP), Frost et al.'s (1990) FMPS concerns over mistakes subscale (9 items; FMPS-COM), and Frost et al.'s (1990) FMPS doubts about actions subscale (4-items FMPS-DAA). The HFMPS-SPP uses a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*), while the FMPS-COM and FMPS-DAA use a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). We selected these three subscales given research suggesting they measure the core interpersonal, cognitive, and behavioral features of perfectionistic concerns (Sherry, Stoeber, & Ramasubbu, 2016). All three subscales have demonstrated reliability and validity (Sherry et al., 2016; Smith et al., 2015).

2.2.3. Discrepancies

Discrepancies were assessed using the short-form of three subscales: Flett and Hewitt's (2012) Multidimensional Discrepancies Inventory (MDI) intrapersonal discrepancy subscale (3-items; MDI; see Sherry & Hall, 2009), Bagby, Parker, Joffe, and Buis' (1994) Reconstructed

Depressive Experiences Questionnaire discrepancy subscale (3-items; DEQ; see Mackinnon et al., 2011), and Slaney et al.'s (2001) Almost Perfect Scale-Revised discrepancy subscale (3-items; APS; see Sherry & Hall, 2009). Participants responded to the MDI using a 4-point scale from 1 (*not at all*) to 4 (*very much*) and the DEQ and APS using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). We selected these three subscales given research suggesting they are reliable and valid measures of discrepancies (Sherry & Hall, 2009). Sherry (2017) found the original and short-form DEQ correlated .73, the original and short-form APS correlated .60, and the original and short-form MDI correlated .74.

2.2.4. Procrastination

Procrastination was measured using the short-form of three subscales: Lay's (1986) General Procrastination Scale (4 items; GPS), Tuckman's (1991) Procrastination Scale (5 items; TPS), and Aitken's (1982) Procrastination Inventory (3 items; API). For the GPS, we used the four items with the highest loadings from Simpson and Pychl (2009). For the TPS, we used the five highest loading items from Tuckman (1991). And for the APS, we used the three highest loading items from Aitken (1992). Participants responded to the GPS using a 5-point scale from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me since*), to the TPS using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*), and to the API using a 5-point scale from 1 (*false*) to 5 (*true*). Sherry (2017) found the original and modified TPS correlated .71. The GPS and the API were not included in Sherry (2017).

2.5. Procedure

Our study involved two phases. In phase 1, participants completed measures of perfectionistic strivings and concerns. Phase 2 commenced the day after phase 1 and involved completing measures of discrepancies and procrastination twice a day (eight hours after waking and just before going to bed), for seven consecutive days.

2.6. Analytic strategy

Data were analyzed using a general multilevel structural equation modeling (MSEM) framework for multilevel mediation (Preacher, Zyphur, & Zhang, 2010, 2011; syntax in Supplemental Material A and power analysis in Supplemental Material B). In our model (see Figure 1), the effect of perfectionistic concerns on procrastination was strictly a between-person effect due to perfectionistic concerns reflecting a stable dispositional tendency, which was assumed to remain relatively consistent across measurement occasions (Sherry & Hall, 2009). As perfectionistic concerns were measured only once during phase 1, perfectionistic concerns contained no within-person variance.

In contrast, discrepancies and procrastination were measured on multiple occasions and consequently were partitioned into two parts: one occurring strictly at the between-person level and the other occurring solely at the within-person level. Doing so accommodates the possibility that the effect of discrepancies on procrastination may differ over measurement occasions within individuals and that there may be between-person differences in the effect of discrepancies on procrastination. At the within-person level, discrepancies and procrastination can be conceptualized as dynamic situational variables that vary from day-to-day. At the between-person level, discrepancies and procrastination can be conceptualized as trait-like variables that are consistent across measurement occasions.

Compared to traditional multilevel modeling, MSEM has notable advantages. MSEM provided us with a means of (a) calculating the correct standard errors for our hierarchical data set, (b) accommodating a mediational model in which both the mediator (discrepancies) and the outcome (procrastination) are measured at the between-person level, (c) measuring latent variables composed of multiple indicators and, by doing so, increasing generalizability of findings that are not dependent on a single scale, (d) estimating both direct and indirect effects

simultaneously, and (e) separating the effect of the mediator (discrepancies) and outcome

(procrastination) into within-person and between-person components to yield a more accurate

and less misleading estimation of indirect effects (Kline, 2015; Preacher et al., 2010, 2011).

Data analysis was conducted in three stages (Byrne, 2013). First, based on the full sample

covariance matrix with clustering ignored, we conducted traditional structural equation modeling

(SEM) as a means of evaluating our hypothesized mediational model. Second, assuming

evidence of at least marginal fit of the traditional SEM model is obtained, the factor structure

pertinent to both the within-person and between-person levels of analysis will be tested

simultaneously using MSEM (Byrne, 2013). Third, the intraclass correlation coefficients (ICCs)

provided at Step 2, will be used as a means of evaluating whether continued use of our MSEM

model is justified. Research suggests that when ICC values exceed .10 the multilevel structure of

the data should not be ignored (Byrne, 2013; Kline, 2015).

Assuming ICC values exceed .10, an indirect effect will be computed. If the 95%

confidence interval for the indirect effect does not contain 0 in its upper and lower bounds, it

indicates mediation (Kline, 2015). The Satorra-Bentler Scaled χ^2 difference test ($\Delta\chi^2$) was used

to test if the model with all effects present differed from a model with non-significant direct

effects constrained to 0. The means of the level-1 variables varied freely across people.

We used the following fit indices for model evaluation: the root mean error of

approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the

standardized root mean square residual (SRMR). The RMSEA is an indicator of the level of

misfit per degrees of freedom, with values of .08 or below being acceptable and values of .05 or

less indicating close model fit (Kline, 2015). CFI and TLI values above .95 suggest good model

fit and values between .90 and .95 suggest marginally acceptable model fit (Kline, 2015). The

SRMR represents the average value of all standardized residuals, with a threshold of SRMR $\leq$

.08 for acceptable model fit (Kline, 2015). All analysis employed robust maximum likelihood

estimation (MLR) and were conducted using *Mplus* version 7.4 (Muthén & Muthén, 1998-2012).

3. Results

3.1. Descriptive statistics

Daily diary data contained 4438 daily reports, 83.1% of which were useable (e.g., blank

reports were considered unusable). The average number of useable reports was 11.5, ranging

from 1 to 14. Missing data were handled using full information maximum likelihood. Means,

standard deviations, and Cronbach's alpha for indicators are in Table 1. Bivariate correlations are

in Table 2. Separate bivariate correlations for men and women are in Supplemental Table C1;

gender differences are in Supplemental Table C2.

3.2. Conventional SEM

We first tested our mediation model using traditional SEM, ignoring the structure of our

hierarchically clustered data. Fit indices indicated acceptable fit: $\chi^2_{(24)} = 436.35$, RMSEA = .062

[95% CI .057, .067], CFI = .982, TLI = .972, SRMR = .037. Standardized coefficients were

significant ($p < .001$) and factor loadings exceeded .40. Thus, we proceeded to conduct a

simultaneous analysis of our model accounting for between- and within-person levels of data.

3.3. Between-person variation

The proportion of between-subject variance in discrepancies and procrastination was

estimated by calculating intraclass correlation coefficients (ICC; see Table 1). Following

Preacher et al.'s (2011) guidelines for ICC effect size (.05 = small; .10 = medium; .20 = large) all

ICC values were large (ICCs from .39 to .46). Accordingly, ICC values indicated the hierarchical

structure of our data should not be ignored and suggested the use of MSEM was justified.

3.4. MSEM

We tested if discrepancies mediate the effects of perfectionistic concerns on

procrastination. Fit indices indicated acceptable fit: $\chi^2_{(32)} = 195.97$, RMSEA $= .034$, CFI $= .983$,

TLI $= .972$, SRMR$_{within}$ $= .036$, SRMR$_{between}$ $= .051$. Factor loadings and standardized

coefficients were substantial ($> .40$), and significant ($p < .001$; see Figure 1). At the within-

person level, daily discrepancies positively predicted daily procrastination ($\beta = .33$, $p < .001$,

95% CI [.29, .40]). At the between-person level, individuals with high discrepancies tended to

procrastinate ($\beta = .67$, $p < .001$, 95% CI [.54, .81]). And baseline perfectionistic concerns

positively predicted discrepancies ($\beta = .66$, $p < .001$; 95% CI [.56, .75]).

As expected, the 95% confidence interval for the indirect effect did not contain zero,

suggesting significance. Specifically, the unstandardized indirect effect of baseline

perfectionistic concerns on procrastination through discrepancies was .23 ($p < .001$), 95% CI

[.16, .30]. Constraining the direct effect of perfectionistic concerns on procrastination to zero did

not result in a significant loss of fit: $\Delta\chi^2_{(1)} = 0.08$, $p < .001$. Our MSEM model (see Figure 1)

accounted for 48.3% of the variance in procrastination. Findings held when gender was entered

as a covariate (see Supplemental Material D and Supplemental Figure D1).

3.5. Incremental validity

A model, identical to the one in Figure 1, was also tested with one change: Perfectionistic

strivings was added as a covariate. Model fit was marginally acceptable: $\chi^2_{(57)} = 326.13$, RMSEA

$= .033$, CFI $= .976$, TLI $= .965$, SRMR$_{within}$ $= .036$, SRMR$_{between}$ $= .091$. All paths involving

perfectionistic concerns remained significant and the indirect effect of perfectionistic concerns

on procrastination via discrepancies also remained significant .19 ($p < .001$), 95% CI [.14, .24].

3.6. Secondary analysis

A secondary analysis was conducted to address the claim that perfectionism has, at most,

a small association with procrastination (Rice et al., 2012; Steel, 2007; Steel & Klingsieck,

2016). To this aim, we removed discrepancies from our MSEM model (see Figure 1). The fit of

the model was acceptable: $\chi^2_{(8)} = 19.32$, RMSEA = .018, CFI = .998, TLI = .995, SRMR$_{within}$ =

.000, SRMR$_{between}$ = .044. Following Cohen's (1992) guidelines for large, medium, and small

effects (r = .50, .30, .10, respectively), perfectionistic concerns had a moderate positive

association with procrastination (β = .47, p < .001; 95% CI [.35, .59]). When perfectionistic

strivings were entered as a covariate, model fit was again acceptable $\chi^2_{(24)} = 116.02$, RMSEA =

.029, CFI = .984, TLI = .974, SRMR$_{within}$ = .000, SRMR$_{between}$ = .071. Perfectionistic strivings

had a moderate negative association with procrastination (β = -.44, p < .001; 95% CI [-.65, -

.23]), whereas perfectionistic concerns had a large positive association with procrastination (β =

.78, p < .001; 95% CI [56, .99]). Accordingly, results suggest perfectionistic strivings suppressed

the relationship between perfectionistic concerns and procrastination.

4. Discussion

Our study represents the most rigorous test of the perfectionism-procrastination

relationship to date. Using a daily diary design, discrepancies and procrastination were

conceptualized and measured both as stable dispositional constructs and as fluctuating situational

constructs. Doing so allowed us to observe the unfolding of discrepancies and procrastination in

daily life and to test whether, and to what the extent, the effect of perfectionistic concerns on

procrastination are explained by discrepancies. As expected, at the within-person level, daily

discrepancies were positively related to the amount of procrastination on a given day. And at the

between-personal level, people with higher discrepancies tended to have higher procrastination.

These findings suggest discrepancies prompt avoidance: The perception of falling short of one's

own standards does not bolster task-approach; rather, it triggers procrastination.

Moreover, our findings indicated between-person differences in discrepancies account for

perfectionistic concerns' relationship with procrastination. People who feel pressured by others

to be perfect, who are racked with self-doubt, and who experience extreme fear over mistakes,

appear to perceive a larger gap between how they are and how they would like to be, which in turn triggers procrastination. Results also indicated perfectionistic concerns influenced procrastination through discrepancies even after controlling for perfectionistic strivings.

Given the magnitude of associations observed in our secondary analysis, the contention that perfectionism has little relevance to procrastination (Rice et al., 2012; Steel, 2007; Steel & Klingsieck, 2016) was not borne out by our findings. Rather, at the between-person level, perfectionistic strivings had a moderate negative association with procrastination, whereas perfectionistic concerns had a large positive association with procrastination. Moving forward, we encourage researchers to address the relevance of perfectionism to procrastination research by measuring perfectionistic concerns as a latent variable, removing variance attributable to perfectionistic strivings (Stoeber & Gaudreau, 2017), and going beyond cross-sectional data.

4.1. Limitations and future directions

Future research might use a clinical sample. Since neuroticism is associated with perfectionistic concerns (Smith et al., 2016) and procrastination (Steel, 2016), future research might examine if perfectionistic concerns add incrementally to the prediction of procrastination beyond neuroticism. Research on the generalizability of our findings in a more gender balanced sample is also needed. Future studies might also incorporate additional dynamic perfectionism-related processes (e.g., perfectionistic self-presentation; Hewitt et al., 2003) into our model.

4.2. Concluding remarks

Some authors (Rice et al., 2012; Steel, 2007) contend perfectionism has little relevance to procrastination. Our findings strongly challenge this assertion. Our results also clarify why people high in perfectionistic concerns procrastinate. People high in perfectionistic concerns experience a chronic sense of falling short of their own personal standards, which in turn leads to procrastination. Our findings lend credence to theoretical accounts suggesting perfectionistic

concerns are part of the premorbid personality of people who consistently put off until tomorrow,

what is better done today.

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Table 1

Means, standard deviations, alpha reliabilities, and intraclass correlations for manifest indicators

	M	*SD*	Cronbach's alpha (α)	Potential range	Actual range	ICC
1. HFMPS socially prescribed perfectionism	47.57	14.56	.87	15-105	21-92	—
2. FMPS concern over mistakes	19.77	7.34	.88	9-45	9-45	—
3. FMPS doubts about actions	9.96	4.09	.85	4-20	4-20	—
4. DEQ discrepancies	7.52	5.10	.94	3-21	3-21	.46
5. MDI discrepancies	5.25	2.62	.93	3-12	3-12	.41
6. APS-R discrepancies	6.24	4.61	.93	3-21	3-21	.46
7. GPS procrastination	9.90	5.42	.91	4-20	4-20	.39
8. API procrastination	6.87	2.62	.92	3-15	3-15	.43
9. TPS procrastination	15.59	10.27	.90	5-35	5-25	.45

Note. Values based on aggregated data (*N* = 317). **ICC** = intraclass correlation coefficient. **HFMPS** = Hewitt and Flett's (1991) Multidimensional Perfectionism Scale; **FMPS** = Frost et al.'s (1990) Multidimensional Perfectionism Scale; **DEQ** = Bagby et al.'s (1994) Reconstructed Depressive Experiences Questionnaire; **MDI** = Flett and Hewitt's (2012) Multidimensional Discrepancies Inventory; **APS-R** = Slaney et al.'s (2001) Almost Perfect Scale-Revised; **GPS** = Lay's (1986) General Procrastination Scale; **TPS** = Tuckman's (1991) Procrastination Scale; **API** = Aitken's (1982) Procrastination Inventory.

Table 2

Bivariate correlations

	1	2	3	4	5	6	8	9	10	11	12	13
1. HFMPS self-oriented perfectionism	—	.76*	.71*	.45*	.56*	.38*	.22*	.19*	.16	.04	-.03	.07
2. FMPS personal standards		—	.69*	.36*	.47*	.21*	.15	.13	.10	-.01	-.07	.01
3. EDI self-oriented perfectionism			—	.53*	.68*	.50*	.38*	.37*	.32*	.23*	.15	.26*
4. HFMPS socially prescribed perfectionism				—	.66*	.49*	.44*	.37*	.51*	.29*	.23*	.27*
5. FMPS concern over mistakes					—	.60*	.57*	.53*	.55*	.39*	.31*	.41*
6. FMPS doubts about actions						—	.55*	.56*	.50*	.42*	.33*	.42*
8. DEQ discrepancies							—	.94*	.92*	.67*	.53*	.69*
9. MDI discrepancies							.74*	—	.83*	.68*	.52*	.70*
10. APS-R discrepancies							.74*	.54*	—	.64*	.59*	.63*
11. GPS procrastination							.29*	.31*	.18*	—	.68*	.98*
12. API procrastination							.18*	.20*	.11*	.47*	—	.68*
13. TPS procrastination							.29*	.31*	.18*	.84*	.50*	—

Note. Between-person correlations are above the diagonal and are based on between-person aggregated data ($N = 317$ participants). Within-person correlations are below the diagonal based on the total sample ($N = 4438$ daily reports). **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; **DEQ**= Bagby et al.'s (1994) Reconstructed Depressive Experiences Questionnaire; **MDI** = Flett and Hewitt's (2012) Multidimensional Discrepancies Inventory; **APS-R** = Slaney et al.'s (2001) Almost Perfect Scale-Revised; **GPS** = Lay's (1986) General Procrastination Scale; **TPS** = Tuckman's (1991) Procrastination Scale; **API** = Aitken's (1982) Procrastination Inventory.
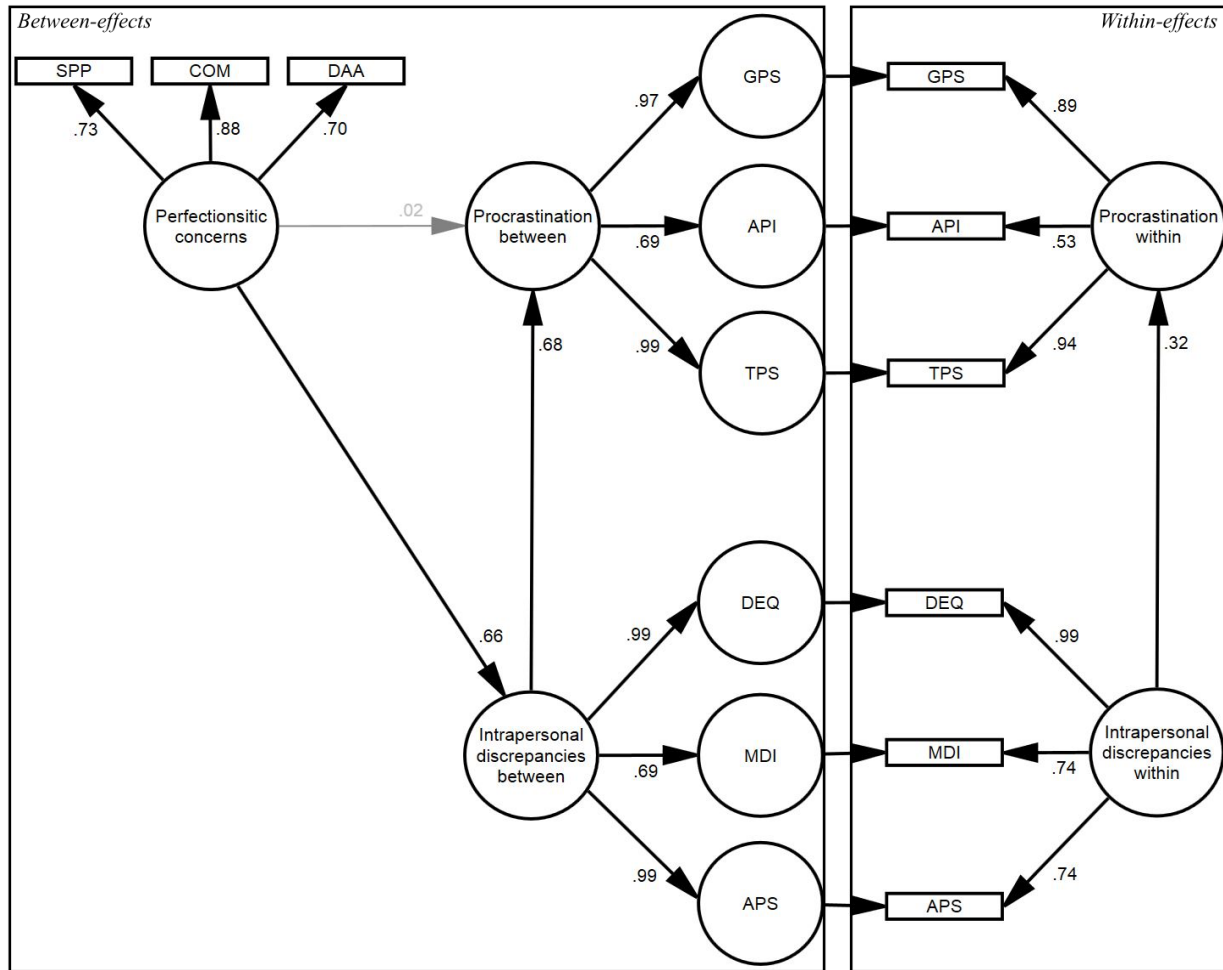*$p < .00$

Figure 1. All estimates are standardized. Ovals represent latent variables; rectangles represent manifest variables. Black arrows indicate significant effects (*p* < .05). Grey arrows indicate non-significant effects (*p* > .05). **SPP** = Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (HFMPS) socially prescribed perfectionism subscale; **COM** = Frost et al.'s (1990) Multidimensional Perfectionism Scale (FMPS) concern over mistakes subscale; **DAA** = FMPS doubts about actions subscale; **DEQ** = Bagby et al.'s (1994) Reconstructed Depressive Experiences Questionnaire discrepancies subscale; **MDI** = Flett and Hewitt's (2012) Multidimensional Discrepancy Inventory subscale; **APS** = Slaney et al.'s (2001) Almost Perfect Scale discrepancies subscale. **GPS** = Lay's (1986) General Procrastination Scale; **TPS** = Tuckman's (1991) Procrastination Scale; **API** = Aitken's (1982) Procrastination Scale.