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The Role of Perfectionism in Online Questionnaire Completion

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Perfectionism consists of two dimensions: perfectionistic strivings (extremely demanding personal standards) and perfectionistic concerns (fear of failure, concern over mistakes, and doubts about actions). Task efficiency (the ratio of resources input to task performance output) is negatively correlated with perfectionistic strivings. In the context of online questionnaires, task efficiency can be measured in terms of the time required to complete a questionnaire and the number of mouse clicks used to change responses. Perfectionistic strivings and perfectionistic concerns were thus predicted to be related to longer completion times and higher numbers of response revisions. Perfectionistic self-presentation (a behavioural facet of perfectionism) was hypothesized to be correlated with both perfectionism dimensions and to mediate the perfectionistic concerns-task efficacy relationship. To test this hypothesis, 130 undergraduate students completed online questionnaires measuring perfectionistic strivings, perfectionistic concerns, and perfectionistic self-presentation. Completion time and the number of mouse clicks were recorded. Significant relationships were found between both perfectionism dimensions and perfectionistic self-presentation. No other hypotheses were supported.

Self-report psychometric tools have been valued for their ability to assess a variety of traits and attitudes with minimal expenditure of time and resources. Employing an online data collection methodology allows participants to participate at any location provided they have a computer terminal with internet access. Internet availability thus allows participants to forgo the hassle of transporting themselves to a fixed lab environment and complete studies at convenient times and places. This increased ease of access also means that it is convenient for a wider range of people to complete the relevant questionnaire(s), thus expanding the pool of potential participants. Previous studies have demonstrated that such online self-report measures retain strong reliability (Montag & Reuter, 2008), although different questionnaires experience varying psychometric comparability to their paper-and-pencil versions when converted into an online format (Verkuil & Brosschot, 2012).

Key to the interpretation of any self-report measure is an understanding of how individuals differ in their approaches to questionnaire completion. Participants with differing

personality traits may prefer to process stimuli using different cognitive mechanisms, causing them to perceive, process and respond to identical questions in different ways (Brenner, Billy & Grady, 2003). To illustrate, consider two participants completing a self-report measure on anxiety. One participant prefers to skim questions and answer based on his or her initial impulse. The other participant prefers to reread questions and deliberate before answering. Even if these participants have similar anxiety levels, their scores on the measure may differ purely by virtue of their response style. Taking response style differences into account is hence necessary to interpret scores with accuracy and validity.

Task Efficiency

Efficiency is the ratio of input to output (Pritchard, 1995). In psychometrics, efficiency is most relevant in the context of task performance. Task efficiency treats invested cognitive resources (ex. effort, attention, time on task) as inputs, and treats task performance as the output. Consider a task in which two participants must memorize and recall a list of words. Participant A recalls 20 words when tested after investing

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one hour of study. Participant B also recalls 20 words when tested, but after studying the list for two hours. Even though both participants achieves identical task performance levels (i.e. they produce identical outcomes), participant A's task efficiency is superior because she can achieve the same level of task performance with half the resources invested.

In the context of questionnaires, output cannot vary. As long as the questionnaire has been fully completed, it is not possible to perform the task better or worse. Variations in task efficiency hence follow primarily for variations in resources input. Based on this limitation, this study proposes two operationalizations for task efficiency in the context of questionnaires: the *time taken to finish the questionnaire* and the *number of revisions made to previous responses*. Lower scores on both operationalization variables are indicative of higher task efficiency. Though relatively novel, this proposal has some support from previous literature; one study has shown that task efficiency is significantly related to completion time (Stoeber & Eysenck, 2008).

If perfectionism is significantly related to task efficiency, it may indicate that perfectionists and non-perfectionists use different problem-solving strategies and heuristics to generate responses to questionnaire items (Seigler, 1988; Brener et al., 2012). Understanding how perfectionism dimensions affect questionnaire responses may therefore help researchers correct for trait-caused distortions when interpreting questionnaire results. This understanding could then be used to pre-emptively avert or retroactively compensate for any potential perfectionism-related distortion in questionnaire use (ex. statistically correcting for expected response distortion). These potential advantages would be especially applicable to instruments that measure perfectionism dimensions or target populations with specific levels of perfectionism.

Perfectionism

Perfectionism is a stable, higher-order trait comprised of two dimensions: perfectionistic strivings and perfectionistic concerns (Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000; Frost, Heimberg, Holt, Mattia, &

Neubauer, 1993; Stoeber & Otto, 2006). Each dimension is defined by distinct cognitive components and has different relationships with other personality variables, such as distress and neuroticism (Dunkley, Blankstein, Masheb & Grilo, 2006; Hewitt, Flett & Blankstein, 1991). Despite this, studies usually find that individuals with high perfectionistic concerns also have high levels of perfectionistic strivings, though the opposite is not necessarily true (Stoeber & Otto, 2006), and both perfectionism dimensions are positively correlated (Dunkley, Blankstein & Berg, 2012).

Perfectionistic strivings. Perfectionistic strivings consist of extremely demanding and rigid personal standards (Frost et al., 1993) for oneself and for others (Stoeber & Otto, 2006). Individuals with high perfectionistic strivings are intrinsically motivated to excel (Stoeber & Eismann, 2007) and feel as if activities are not worth doing if not done flawlessly (Hewitt & Flett, 1991). As a result, they tend to invest more time and energy in tasks than people with low perfectionistic strivings (Stoeber, Chesterman & Tarn, 2010). When success is achieved, individuals with high perfectionistic strivings are more likely to experience a stronger positive emotional response (Sagar & Stoeber, 2009). Accordingly, people with high perfectionistic strivings generally exhibit superior task performance; this trend has been demonstrated across contexts such as in-lab testing, aptitude tests, and academic examinations (Stoeber, Chesterman & Tarn, 2010). This generally heightened task performance is accompanied by both high self-efficacy and high aspiration levels (Stoeber, Hutchfield, & Wood, 2008).

Perfectionistic strivings and task efficiency. In spite of the association between perfectionistic strivings and task performance, there is an inverse relationship between perfectionistic strivings and task efficiency (Stoeber, Chesterman, & Tarn, 2010). In fact, completion time fully mediates the relationship between perfectionistic striving and task performance (Stoeber et al., 2010).

In a seminal study, participants were asked to edit a document for grammatical errors. Participants with high perfectionistic strivings tended to identify more grammar errors where none existed. These false positives resulted in a

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lower accuracy to time ratio (Ishida, 2005); subsequent replications have shown comparable results (Stoeber & Eysenck, 2008; Stoeber, 2011).

Research has proposed that impaired prioritization can explain this relationship (Stoeber, 2011). Editing tasks confront participants with a large amount of ambiguous information. Individuals with low perfectionistic strivings may filter out less task-relevant information, while individuals with high perfectionistic strivings may process ambiguous information less discriminately (Stoeber & Eysenck, 2008). This excessively thorough information processing means that although individuals with high perfectionistic strivings invest more effort, that effort is wasted because it is not being directed towards goals. High perfectionistic strivings also seem to incline individuals to value accuracy over speed and thus make individuals prone to investing more time and effort in any given task (Stoeber, 2011; Stober et al., 2010; Stober & Eismann, 2007). As such, although outcomes may better meet the goals of a task, output increases may not be proportional to input increases.

This proposed ability to impair prioritization is consistent with the observed correlates of perfectionistic strivings. For example, psychologists that possess high perfectionistic strivings tend to publish at lower rates, leading to less recognition in their field (Sherry, Hewitt, Sherry, Flett, & Graham, 2010). These possibilities challenge traditional characterizations of perfectionistic strivings as an unambiguously desirable aspect of perfectionism (Stoeber & Otto, 2006).

As such, it is proposed that perfectionistic strivings will be related to task efficiency in the following manner:

H₁: Perfectionistic strivings will be positively related to completion time in online questionnaires.

H₂: Perfectionistic strivings will be positively related to response revision frequency in online questionnaires.

Perfectionistic concerns. Perfectionistic concerns consist of fears that one will fail to measure up to others' standards (Stoeber, Harris, & Moon, 2007). Chronic self-doubt, a sense of falling short, and concern over mistakes are all

key aspects of perfectionistic concerns (Stoeber & Otto, 2006). Those with high perfectionistic concerns do not necessarily believe those standards are justified. Rather, they have internalized externally imposed standards (Stoeber & Eismann, 2007) and are motivated to avoid feeling "not good enough" (Mouratidis & Michou, 2011). When failure does occur, people high in perfectionistic concerns experience stronger negative emotional responses (DiBartolo, Frost, Dixon & Almodovar, 2001), lower confidence levels, and greater disappointment (Frost, Turcotte, Heimberg, Mattia, Holt, & Hope, 1995). Moreover, these individuals tend to cope poorly (Dunkley et al., 2000), compensating with behaviours that alleviate negative affect in the short-term but amplify negative affect in the long-term (e.g. alcohol abuse, binge eating; Sherry et al., 2012).

For these reasons, perfectionistic concerns have been characterized as the "dark side" of perfectionism, opposite perfectionistic strivings (Stoeber & Otto, 2006). For example, perfectionistic strivings are inversely correlated with fear of embarrassment, shame (Sagar & Stoeber, 2009), and stress (Achtziger & Bayer, 2013) whereas perfectionistic concerns are positively related to social anxiety (Rosser, Issikidis, & Peters, 2003), fear of negative evaluations (Jain & Sudhir, 2010), stress (Achtziger & Bayer, 2013) and negative affect (Frost et al., 1995; Mackinnon & Sherry, 2012). Perfectionistic concerns have also been associated with numerous mental health problems, including but not limited to low self-esteem, depression, anxiety, suicidal ideation, obsessive-compulsive symptoms (Stober & Otto, 2006), and eating disorders (Ellickson-Larew, Naragon-Gainey, & Watson, 2013). Some research indicates that perfectionistic concerns also interfere with the relationship between perfectionistic strivings and positive outcomes (Hill, Huelsman, & Arauljo, 2010).

Perfectionistic concerns and task efficiency. Empirical support for a direct relationship between task efficiency and perfectionistic concerns is not well-developed. Notwithstanding this gap, research does indicate a generally consistent negative relationship between perfectionistic concerns and task performance output (Gotwals, Stoeber, Dunn &

Stoll, 2012; Stoeber & Otto, 2006). Even when made aware of the debilitating impact of their rigid approaches on task performance, individuals with high perfectionistic concerns may resist changing those approaches (Hall, Kerr, Kozub, & Finnie, 2007). However, it may be that the nature of this relationship is inconsistent, particularly across task iterations. In one study, high perfectionistic concerns were associated with decreased performance during the first trial of a basketball training task, but this association disappeared on subsequent trials (Stoll, Lau, & Stoeber, 2005).

Lowered output can certainly be indicative of lowered task efficiency, given that input is held constant (or increases). Regrettably, little inquiry into perfectionistic concerns and resources input has been found. Furthermore, output-related arguments are of limited relevance to this study, as output is constant for all those that complete questionnaires.

Nevertheless, a link between perfectionistic concerns and task efficiency has strong intuitive plausibility. By definition, perfectionistic concerns consist of concerns over mistakes, fear of failure, and chronic self-doubt (Mackinnon & Sherry, 2012). Constant second-guessing seems liable to result in constant double-checking, which in turn would increase the time and effort invested in a task. These greater resource inputs would decrease task efficiency in situations where output cannot vary. Hence, task efficiency relationships to perfectionistic concerns were predicted.

H₃: Perfectionistic concerns are inversely related to completion time in online questionnaires.

H₄: Perfectionistic concerns are inversely related to response revision frequency in online questionnaires.

Perfectionistic Self-Presentation

Perfectionistic self-presentation is an interpersonal behavioural facet of perfectionism. Aspects include perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection (Hewitt et al., 2003b). Unlike the perfectionism dimensions, perfectionistic self-presentation is a secondary characteristic expression of perfectionism that is highly specific to social contexts (Mackinnon & Sherry,

2012). Perfectionistic self-presentation is designed to project an image of flawless perfection to others, increasing the positive social evaluation received and decreasing the negative social evaluation received (Hewitt et al., 2003b).

As aversion to failure-related negative social evaluation is central to perfectionistic concerns, perfectionistic concerns seem inherently linked to perfectionistic self-presentation. Factor analysis shows that nondisplay of imperfection and nondisclosure of imperfection both load onto the same factor as perfectionistic concerns (Stoeber & Damian, 2014). Populations with higher concern over mistakes and doubts about actions also score higher on nondisplay of imperfection (Jain & Sudhir, 2010).

Perfectionistic concerns and perfectionistic self-presentation also have similar correlates, such as lower self-esteem (Flett, Hewitt, Blankstein, & O'Brien, 1991), greater social anxiety (Jain & Sudhir, 2010; Mackinnon, Battista, Sherry, & Stewart, 2014) and greater negative affect (Hewitt et al., 2003b). Researchers have shown that perfectionistic self-presentation also mediates some perfectionistic concerns' relationships to other related variables. For instance, perfectionistic self-presentation completely mediates the relationship between perfectionistic concerns and subjective well-being (Mackinnon & Sherry, 2012). It is expected that the previously-identified relationship between perfectionistic concerns and perfectionistic self-presentation will be replicated in this study.

Perfectionistic strivings are not as closely linked to perfectionistic self-presentation. At most, some evidence suggests an association between perfectionistic strivings and self-promotion (Stoeber & Damian, 2014). Nevertheless, because perfectionistic concerns are positively related to perfectionistic strivings (Dunkley et al., 2012), it was predicted that perfectionistic strivings would also be transitively correlated with perfectionistic self-presentation.

Recall that response bias due to self-presentation (i.e. demand characteristic effects, social enhancement bias) is an expected drawback of any self-report measure (Sherry et al., 2012). As such, it would make particularly

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good sense for perfectionistic self-presentation to show task efficiency effects in a questionnaire context. In light of perfectionistic self-presentation's established relationship with perfectionistic concerns, perfectionistic self-presentation was thus hypothesized to mediate perfectionistic concerns relationships with task efficiency operationalizations. Perfectionistic self-presentation was thought to play this mediator role because it is a secondary behavioural expression of perfectionism, whereas perfectionistic concerns is a primary dimension of perfectionism; that is, it was thought more plausible that the behavioural variable would follow from the personality variable.

H₅: Perfectionistic concerns and perfectionistic self-presentation will be positively correlated.

H₆: Perfectionistic strivings and perfectionistic self-presentation will be positively correlated.

H₇: The relationship between perfectionistic concerns and completion time will be mediated by perfectionistic self-presentation.

H₈: The relationship between perfectionistic concerns and response revision frequency will be mediated by perfectionistic self-presentation.

Method

Participants

Participants were 130 undergraduate Psychology students at the University of Western Ontario. Ages ranged from 17 to 40 years ($M = 19.14$, $SD = 2.35$). A total of 77 participants were female (59.2%). All participants were compensated with credit towards course requirements.

Exclusion criteria. A total of 29 participants were excluded from the study due to attrition and careless responding. Careless responding was inferred where the amount of time taken to complete the questionnaire and number of mouse-clicks used to complete the questionnaire were anomalous. Participants who took either too much or too little time were removed, as were participants who used too many or too few mouse clicks.

Measures

All measures employed in the study were self-report questionnaires. Participants were instructed to respond using a Likert scale.

Perfectionistic strivings. Questionnaires specifically designed to measure perfectionistic strivings have not yet been established. To compensate for this, perfectionistic strivings was measured using fourteen items taken from three subscales, each of which originates from a different perfectionism measure.

The first perfectionistic strivings subscale used was the Self-Oriented Perfectionism Subscale from Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (FMPS-SOP-SF). The original, complete scale contains 45 items. Self-oriented perfectionism is the aspect of perfectionistic strivings regarding demands for perfection from oneself; it is contrasted with other-oriented perfectionism, the aspect of perfectionistic strivings regarding demands for perfection from others (Stoeber & Hotham, 2013). The FMPS-SOP-SF consists of five items (e.g., "One of my goals is to be perfect in everything I do") to be rated on a seven-point Likert scale. The alpha coefficients for this measure have been found to be between .69 (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991) and .90 (Dunkley, Blankstein, & Berg, 2007).

The second perfectionistic strivings subscale employed was the Personal Standards Subscale from Frost's Multidimensional Perfectionism Scale (FMPS-PS-SF; Frost, Marten, Lahart, & Rosenblate, 1990). The reliability of Frost's complete 35-item scale has been well-established in the literature, with a Cronbach's alpha as high as (.86 (Ha, Lee, & Puig, 2010; Lombardo, 2008; Zhang, Gan, & Zhan, 2007) and the measure has also been found to be valid (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991).

The third perfectionistic strivings subscale used was the Self-Oriented Perfectionism Subscale of the Eating Disorder Inventory (EDI-SOP; Garner, Olmstead, & Polivy, 1983). The Eating Disorder Inventory is a 64-item self-report measure designed to identify cognitive symptoms and associated psychological characteristics of eating disorders (Lampard, Byrne, McLean, & Fursland, 2012). Though perfectionism is not its central focus, the

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measure assesses perfectionistic strivings due to its association with eating disorders (Espelage, Mazzeo, Aggen, Quittner, Sherman, & Thompson, 2003). The EDI-SOP subscale consists of four items (e.g., “I feel that I must do things perfectly or not do them at all”) and asks participants to rate them using a six-point Likert scale. The EDI’s construct reliability and validity have been well supported by research in clinical and nonclinical populations, and Cronbach’s alpha values for the EDI-SOP in particular are consistently around .70 (Espelage et al., 2003).

Perfectionistic concerns. Perfectionistic concerns levels were similarly measured using the average of standardized scores from three subscales. One subscale was taken from the HFMPs and two subscales were taken from the FMPS. In total, the subscales contain a sum of 16 items. Each subscale was chosen due to past research indicating its measurement of core interpersonal, behavioural, and cognitive aspects of perfectionistic concerns (Smith, Saklofske, & Nordstokke, 2014).

The first perfectionistic concerns subscale employed was the HFMPs’s Socially-Prescribed Perfectionism Subscale (HFMPs-SPP-SF). Socially-prescribed perfectionism refers to the need to meet others’ perceived expectations for the self (Arthur & Hayward, 1997). Like other subscales within the HFMPs, the HFMPs-SPP-SF uses a seven-point Likert scale. It contains five items that focus on the belief that others hold oneself accountable to extremely high standards (e.g., “My family expect me to be perfect”).

The second perfectionistic concerns subscale chosen was the FMPS’s Concern Over Mistakes Subscale (FMPS-COM-SF). This subscale focuses on beliefs that exaggerate the consequences of mistakes and failures (e.g., “If I fail partly, it is as bad as being a complete failure”). The FMPS-COM-SF contains five items and uses a five-point Likert rating scale. This subscale has demonstrated sufficient validity (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991).

The final perfectionistic concerns subscale was the Doubts About Actions Subscale (FMPS-DAA-SF), also taken from the FMPS. The FMPS-DAA-SF was the shortest of the

subscales, containing only four items. This subscale also possesses strong reliability with a Cronbach’s alpha of .86 (Ha et al., 2010). Items from the FMPS-DAA-SF revolve around a belief that one must worry constantly about whether a task has been done properly in order to prevent mistakes (e.g., “I tend to get behind in my work because I repeat things over and over”). The subscale uses five-point Likert rating scale.

Perfectionistic self-presentation.

Perfectionistic self-presentation was measured using the Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003a). The scale contains 12 items rated using a seven-point Likert scale. Items generally revolve around thoughts that stress avoiding revealing one’s flaws in the presence of others (e.g., “Errors are much worse if they are made in public rather than in private”). The PSPS also contains items that are reverse-coded, as they express beliefs antithetical to perfectionistic self-presentation (e.g., “I do not care about making mistakes in public”).

Task efficiency. Task efficiency was operationalized as completion time and response revision frequency. Revision frequency was itself operationalized as the total number of mouse clicks, given that the only purpose clicking serves during online questionnaire completion is to specify and submit answers to items. If a participant performed more clicks than necessary to complete the survey, he or she likely used the extra clicking to change his or her answer.

Completion time and revision frequency were measured with Qualtrics software. Qualtrics.com is an online survey distribution tool that allows researchers to make surveys and questionnaires available on the internet. Questionnaires hosted on the site can be completed using any compatible internet browser. Qualtrics recorded the time of participants’ first click and page submission click for every page of questionnaires. Completion times for each page were thus measured by subtracting the time of the first click from the time of the answer submission click. Qualtrics can also record the number of mouse clicks performed by a participant on each page.

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Procedure

Participants were required to sign up for the study online. Once signed up, participants were automatically directed to the study. A letter of information was then presented to participants, and consent was obtained. Participants then provided their age, sex, and year of study. The participants were then presented with a sequence of questionnaires. Each page of the sequence contained only one questionnaire. Once participants had finished the questionnaire

series, they were presented with a debriefing form. All participants were compensated following completion or withdrawal.

Results

Bivariate correlations were calculated between all perfectionism and task efficiency variables and recorded in Table 1, along with all variables' means and standard deviations. All reported *p*-values are two-tailed.

Table 1
Bivariate Correlations and Reliability Statistics.

Variable	1	2	3	4	5	α
1. Perfectionistic Concerns	1					.83
2. Perfectionistic Strivings	.60*	1				.90
3. Perfectionistic Self-Presentation	.59*	.55*	1			.84
4. Completion Time	-.06	-.01	-.08	1		n/a
5. Revision Frequency	-.05	.09	-.07	.06	1	n/a

Note. *n* = 130; * *p* < .001; *p*-values are two-tailed

The analysis revealed significant correlations between perfectionistic concerns and perfectionistic strivings ($r = .60, p < .001$). Perfectionistic self-presentation correlated significantly with perfectionistic concerns ($r = .59, p < .001$). Perfectionistic self-presentation also correlated significantly with perfectionistic strivings ($r = .55, p < .001$).

No significant correlations were found between completion time and perfectionistic strivings ($r = -.01, p = .96$), completion time and perfectionistic concerns ($r = -.06, p = .46$), or completion time and perfectionistic self-presentation either ($r = -.08, p = .35$).

Completion time and number of clicks were not significantly related ($r = -.04, p = .22$). Bivariate correlations were also examined between scores on individual subscales and outcome variables (see Table 2). No significant correlations were found between completion time and Personal Standards ($r = -.17, p = .06$),

completion time and HFMPs Self-Oriented Perfectionism ($r = .07, p = .43$), completion time and EDI Self-Oriented Perfectionism ($r = -.07, p = .43$), completion time and Doubts about Actions ($r = .13, p = .14$), completion time and Concern over Mistakes ($r = .04, p = .70$), or completion time and Socially-Prescribed Perfectionism ($r = .02, p = .80$). No significant correlations were found between response time and HFMPs Self-Oriented Perfectionism ($r = .12, p = .19$), response time and EDI Self-Oriented Perfectionism ($r = .03, p = .74$), response time and Personal Standards ($r = .03, p = .77$), response time and Doubts about Actions ($r = -.09, p = .29$), response time and Concern over Mistakes ($r = -.07, p = .40$), response time and Socially-Prescribed Perfectionism ($r = .08, p = .37$).

Cronbach's alpha was .83 for perfectionistic concerns measures, .90 for the perfectionistic strivings measures, and .84 for the

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Table 2
Bivariate Correlations between Perfectionism Dimension Components and Outcome Variables.

Variable	Perfectionistic Strivings			Perfectionistic Concerns		
	Self-Oriented Perfectionism (HFMPs)	Self-Oriented Perfectionism (EDI)	Personal Standards	Socially-Prescribed Perfectionism	Concern Over Mistakes	Doubts About Actions
Completion Time	.07	-.17	-.07	.02	.04	.13
Revision Frequency	.12	.03	.03	.08	-.07	-.09

Note. $n = 130$; * $p < .05$; all p -values are two-tailed.

Perfectionistic Self-Presentation Scale (see Table 1).

Discussion

Participants’ perfectionistic concerns were shown to correlate positively with perfectionistic strivings. Perfectionistic concerns were also positively related to perfectionistic self-presentation, and that relationship could not be fully accounted for by variance in perfectionistic strivings. Both of these findings replicate general trends found in past literature (Frost et al., 1993; Stoeber & Otto, 2006).

Perfectionistic strivings and perfectionistic self-presentation were related. Furthermore, this relationship was not accounted for by variance in perfectionistic concerns. This relationship represents a novel finding of this study.

One possible reason for why this relationship has not previously been identified is that different components of perfectionistic self-presentation are more strongly associated with different perfectionism dimensions (Stoeber & Damian, 2014). Recall that perfectionistic self-presentation can be divided into perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection (Hewitt et al., 2003a; Hewitt et al., 2003b; Mackinnon & Sherry, 2012). In a factor analysis study of the Clinical Perfectionism Questionnaire, perfectionistic strivings and perfectionistic self-promotion loaded onto the same factor. Perfectionistic concerns, nondisplay of imperfection and nondisclosure of imperfection instead loaded most strongly onto a different factor (Stoeber & Damian, 2014). Examining correlations with perfectionistic self-presentation

as a whole may thus obscure the conflicting correlations between perfectionistic self-presentation’s component constructs and the perfectionism dimensions.

This factor structure further suggests that individuals with high perfectionistic strivings are relatively comfortable with displaying their flaws to others. They may perform perfectionistic self-presentation not out of fear of social judgment; rather, perfectionistic self-presentation may simply be another expression of a general desire to perform as best as possible in all situations, including social situations. This theory would explain any apparent conflict with perfectionistic strivings’ simultaneous association with intrinsic motivation (Stoeber & Eismann, 2007). Investigating whether this factor structure can be replicated and/or substantiated would be a promising avenue of future research.

Social desirability effects may also have played a role in the perfectionistic strivings-perfectionistic self-presentation relationship. University students, like those used in this study’s sample, tend to perceive aspects of both perfectionistic strivings and perfectionistic concerns as socially desirable, and self-reported scores on both perfectionism dimensions accordingly rise when students are instructed to fake more appealing answers and fall when students are instructed to fake less appealing answers (Stoeber & Hotham, 2013). Students that are more concerned with presenting themselves well would thus report artificially high perfectionistic strivings levels.

No support for a relationship between perfectionistic strivings and completion time

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was found. Nor was there evidence for a relationship between perfectionistic strivings and response revision frequency. There was also no support for a relationship between perfectionistic concerns and either response revision frequency or completion time. As such, no support for a relationship between task efficiency and either dimension of perfectionism was identified. As the presence of a significant relationship is one of the Baron and Kenny's conditions for mediation (Baron & Kenny, 1986), no further assessment was made regarding whether self-presentation acted as a mediator variable (Baron and Kenny, 1986). These findings contrast starkly with those of previous editing studies, which found highly significant correlations between perfectionistic strivings and task efficiency (Ishida, 2005; Stoeber, 2011; Stoeber & Eysenck, 2008).

One possible explanation for why the predicted relationships were not supported is the lack of task performance variability on questionnaires. Recall that participants' output on questionnaires cannot vary given that one completes the task. It may be that the decreased task efficiency previously associated with perfectionistic strivings (Ishida, 2005; Stoeber & Eysenck, 2008; Stoeber, 2011) and assumed for perfectionistic concerns may be the result of output differences more than input differences. This explanation is particularly plausible for perfectionistic strivings, as individuals with high perfectionistic strivings are more motivated by the prospect of achieving all possible gains.

Empirical support for this proposition, however, is not straightforward. One editing study showed that task efficiency is negatively associated with completion time and positively associated with editing accuracy. Yet at the same time, it reported a positive correlation between editing accuracy and completion time (Stoeber & Eysenck, 2008). Correlations between inputs, outputs, and task efficiency are hence not transitive. In the case of perfectionistic concerns, which likely has negative associations with task performance and may have a positive association with input, the argument is more consistent with empirical data. Allowing output to decrease on top of allowing input to increase could potentially magnify a potential small task efficiency effect to the point where it might be

detectable. While the ability of questionnaires to study task efficiency while controlling for outputs has its uses, perhaps task efficiency effects may only be observable on tasks where outputs can vary. Follow-up studies that assess task efficiency on various tasks and compare those scores to participants' perfectionistic strivings, perfectionistic concerns and perfectionistic self-presentation levels should be done to illuminate whether or not this proposed explanation can be confirmed.

In addition, completion time and response revision frequency are not significantly correlated. The fact that they do not covary implies that they are the outcomes of different factors. Given that both of these variables are meant to be operationalizations for the same construct, this finding is problematic; they cannot be said to be comparable operationalizations of task efficiency. At the very least, one must be a better operationalization than the other. Given a choice between revision frequency and completion time, completion time is likely the superior task efficiency operationalization. This is because revising one's answers necessarily extends completion time; reviewing and changing answers necessarily requires extra time, but extra completion time is not necessarily spent on revisions. Completion time thus better takes into account variations in revision frequency, as revision frequency is a definite factor of completion time (but not vice versa). Completion time has also been previously shown to correlate with task efficiency measures (Stoeber & Eysenck, 2008). However, caution should be exercised until further studies can verify whether either task efficiency operationalization has sufficient concurrent validity with established measures of task efficiency, such as accuracy : time ratios on editing tasks (Ishida, 2005; Stoeber, 2011). If there is a significant correlation between either proposed operationalization and an established operationalization, one could argue that their validity and reliability are comparable.

Future studies should also inspect the relationship of motivational variables to task efficiency. Individuals with promotion-focused motivation are motivated primarily by the pursuit of ideals, whereas individual with

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prevention-focused motivation are driven by a desire for security and for avoiding negative outcomes (Zou, Scholer, & Higgins, 2014). The parallels between promotion-focused motivation and perfectionistic strivings as well as prevention-focus motivation and perfectionistic concerns are not negligible. Promotion and prevention focus are also prominently researched in the industrial-organizational domain, where the efficiency concept was developed (Pritchard, 1995). Investigating relationships between motivation style and task efficiency may thus be promising for the same reasons that perfectionism-task efficiency relationships were hypothesized, even though such relationships were not confirmed in this study.

Limitations

Given that this study employed self-report measures, it was subject to all of the general flaws of such measures. These include vulnerability to poor introspective insight and social desirability bias. Questionnaires are also cross-sectional instruments, meaning that they can only assess processes that occur at a particular instant in time (Sherry et al., 2013). They therefore cannot accurately measure constructs whose levels or effects vary over time. Fortunately, perfectionism is a personality trait that remains relatively stable over time, limiting the impact of this limitation (Mackinnon & Sherry, 2012). Flaws such as these are inherent to all self-report measures, but should be acknowledged nonetheless.

Participants excluded for not reading the questionnaire items may be less likely to care about their work standards. This suggests that a group with characteristically different levels of perfectionism may have been excluded by the data analysis strategy employed. However, because these individuals would be less likely to exert the effort required to provide correct answers, simply including them in the sample would not resolve this issue.

On another front, some might also be concerned that because the questionnaires were anonymous, the study did not tap into perfectionistic concerns, as there was no opportunity for any individual's responses to be held accountable to others' expectations.

However, this criticism misrepresents perfectionistic concerns; although the trait does deal with a fear of failing others, people with high perfectionistic concerns internalize social standards. Such individuals fear the sense of failure and inadequacy associated with not meeting others' standards even if others are not expressly judging them. In the case of perfectionistic self-presentation, though, anonymity may indeed be a confounding factor, as it is a behavioural facet of perfectionism specific to social contexts. Nevertheless, knowing that someone would read their answers would hopefully still provide the proper social conditions for participants to express their perfectionistic self-presentation behaviours.

Conclusion

Perfectionistic strivings, perfectionistic concerns and perfectionistic self-presentation were not evinced to be related to completion time or response revision frequency in the context of online questionnaires. However, both dimensions of perfectionism were found to be associated with one another as well as perfectionistic self-presentation.

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