

NATURALISTIC OBSERVATION OF PERFECTIONISTIC BEHAVIOURS

by

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Abstract

Perfectionism plays an important role across psychopathology. However, there are almost no naturalistic studies that examine the function of perfectionistic behaviours in everyday life. The purpose of this study is to examine predictors, contextual triggers, frequency, and outcomes of 10 proposed perfectionistic behaviours across a 14-day monitoring period in a community sample: Overpreparing, repeating behaviours, excessive reassurance seeking, excessive organizing, excessive perseverance, quitting too soon, procrastinating, refusing to delegate, avoiding situations where standards may be threatened, and attempting to change other people's behaviour. Correlates and predictors of these behaviours and their related features are discussed in the context of previous research that has examined these behaviours in less naturalistic ways. The findings of the present study have implications for future research regarding behavioural manifestations of perfectionism, and may provide clinicians with important information about perfectionistic behaviours. Additionally, findings using new perfectionism measures provide evidence for their utility with nonclinical samples.

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Naturalistic Observation of Perfectionistic Behaviours

Many people strive to achieve high standards. Whereas this drive can be helpful in motivating people to reach their goals and to improve themselves and the world around them, there are times when this desire for success becomes problematic. Personal goals may be set impossibly high such that there is no way for them to be met to one's satisfaction. Alternatively, individuals may feel that others expect great things from them and fear the negative consequences of falling short. Another possibility is that individuals may hold such high standards for other people that they find themselves frequently disappointed and frustrated by other people's failures. In cases such as these, simply striving to meet goals and expectations may develop into the belief that anything less than perfection is unacceptable, a trait otherwise known as perfectionism.

Frost, Marten, Lahart, and Rosenblate (1990, p. 450) define perfectionism as “[involving] high standards of performance [that] are accompanied by tendencies for overly critical evaluations of one's own behaviour.” The literature on this construct is quite broad and researchers rarely agree on a single working definition of perfectionism. Nevertheless this basic definition is widely applicable to both academic discussions as well as clinical interpretations surrounding issues of perfectionism. Other researchers also commonly posit that individuals may apply these standards to other people's behaviour or believe that others are holding them to impossibly high standards (Hewitt & Flett, 1991).

Perfectionism has been shown to play a role across psychopathology, including in social anxiety disorder (Laurenti, Bruch, & Haase, 2008), obsessive-compulsive disorder (Moretz & McKay, 2009), generalized anxiety disorder (Fergus & Wu, 2010), depression (Clara, Cox, & Enns, 2007), eating disorders (Bardone-Cone, Sturm, Lawson, Robinson, & Smith, 2010) and

obsessive-compulsive personality disorder (American Psychiatric Association, 2013).

Additionally, having high levels of perfectionism has been shown to be associated with an increased rate of comorbid psychological disorders (Bieling, Summerfeldt, Israeli, & Antony, 2004). It has even been suggested that perfectionism may present a barrier to treatment by introducing difficulty in forming a strong therapeutic alliance (Blatt & Zuroff, 2005; Zuroff et al., 2000). Recently, cognitive-behavioural treatments for clinical perfectionism have begun to emerge (e.g., Radhu, Daskalakis, Arpin-Cribbie, Irvine, & Ritvo, 2012; Shafran, Cooper, & Fairburn, 2002).

Problematic perfectionism may be best understood through a cognitive-behavioural framework. Perfectionistic cognitions and behaviours are thought to contribute to the negative emotional effects of striving for impossibly high standards that are often observed in individuals with psychological disorders. Frost et al. (1990) described critical evaluative tendencies as a central cognitive feature of perfectionism, such that perfectionists display exaggerated concern over making mistakes in their performance and doubts about the quality of their performance. They also tend to be motivated by fear of failure rather than desire for achievement. One study examining the relationship between cognitive patterns and perfectionism demonstrated that in community samples, dichotomous thinking and rigidity are significant predictors of negative perfectionism (Egan, Piek, Dyck, & Rees, 2007). In this same study, dichotomous thinking predicted 43% of the variance in negative perfectionism in a sample of individuals with a diagnosable anxiety or depressive disorder. In another study examining the relationship between perfectionism and fear of failure, it was found that fear of failure, specifically fears that important others would lose interest in the individual and that failing would upset important

others, accounted for 24% of the variance in socially-prescribed perfectionism scores (Conroy, Kaye, & Fifer, 2007).

Although there is a large body of literature describing perfectionism with respect to its relationship with psychological distress (e.g., Arpin-Cribbie et al., 2008), personality (e.g., Stumpf & Parker, 2000), and emotions (e.g., Wu & Wei, 2008), there is a dearth of knowledge regarding how perfectionism may be observed behaviourally. Bouchard, Rheume, and Ladouceur (1999) demonstrated no behavioural differences between high and moderate perfectionists with respect to hesitations, checking, modifications, number of errors, or total time taken to complete a sorting task; however, this may be due to methodological shortcomings. Specifically, the moderately perfectionistic group reported similar perfectionism-related dysfunction to the highly perfectionistic group, suggesting that the sample may have been too homogenous to detect group differences. In addition, the task itself may have pulled for perfect performance from both groups to a greater extent than was expected.

Conversely, another study by Rheume, Freeston et al. (2000) demonstrated that functional and dysfunctional perfectionists exhibit differential behaviours when faced with problem-solving tasks. Specifically, dysfunctional perfectionists spent a significantly longer time searching for a target letter within a letter matrix, compared to functional perfectionists. On a task designed to test decision-making based on probabilistic inferences, functional perfectionists took longer and gathered more evidence before making a decision. The authors argued that these findings show that when perfect performance is possible, dysfunctional perfectionists display slower execution and expend more time and energy on their actual performance on the task. On the other hand, if perfection seems less attainable, dysfunctional perfectionists may be more impulsive in their decision-making and think less about how to actually solve the problem. When

faced with the same situation, functional perfectionists may spend more time working out the best possible solution to the problem by gathering more evidence without concern for how their performance may appear to others.

In a similar study, Kobori and Tanno (2008) found that participants high in self-oriented perfectionism required greater evidence before making a decision in a probabilistic inference task as compared to participants low in self-oriented perfectionism. Interestingly, these two groups did not differ in the amount of time it took to come to a decision. This suggests that individuals high in perfectionism do in fact require more evidence prior to making a decision but may not take much time to think through options for the best solution. It is possible that perfectionists prefer to gather more information in a shorter period of time prior to making a decision compared to people low in perfectionism.

With respect to behaviours observed in more naturalistic settings, Hewitt et al. (2003) reported that individuals high in perfectionistic self-presentation engage in more self-monitoring behaviour. More recently, Lee, Roberts-Collins, Coughtrey, Phillips, and Shafran (2011) examined the relationship between perfectionism and perfectionistic behaviours as assessed by the *Behavioural Domains Questionnaire*. This measure is designed to tap into the frequency with which a variety of perfectionistic behaviours are demonstrated across five life domains. The results of this study support the common finding that overall perfectionism is positively correlated with general psychopathological symptomatology. Furthermore, higher overall perfectionism scores were positively correlated with more frequent perfectionistic behaviour. Although these findings are preliminary, they lend support to the use of conventional perfectionism measures as a possible means of predicting perfectionistic behaviour.

Unfortunately, behavioural tendencies were assessed using a single-session self-report measure, so naturalistic observation of behaviour was not possible in this study.

A recent study by Mushquash and Sherry (2012) used a daily diary technique to observe cycles of self-defeat in individuals high in socially prescribed perfectionism. This study revealed that these individuals engage in self-destructive behaviours such as procrastinating, binge eating, and getting into interpersonal conflicts. This methodology allowed the researchers to capture the cyclical self-defeating nature of perfectionistic beliefs and behaviours, and provides a strong foundation for this type of study design in future perfectionism research.

The studies designed to detect behavioural differences between perfectionists and nonperfectionists discussed earlier provide a good starting point. However, the majority have used cross-sectional correlational designs or have been limited in the scope of behaviours studied. It has yet to be determined which specific behaviours differ among those with varying levels of perfectionism or different presentations of perfectionistic features. The purpose of the present study was to examine 10 perfectionistic behaviours that were proposed by Antony and Swinson (2009) as some of the most commonly observed behaviours in individuals high in perfectionism. These behaviours include overpreparing, repeating behaviours, excessive reassurance seeking, excessive organizing, procrastinating, excessive persevering, quitting too soon, refusing to delegate, avoiding, and attempting to change others' behaviour. Each of these behaviours will be reviewed in turn by discussing both theoretical and empirical support for their importance in a behavioural conceptualization of perfectionism.

Overpreparing

Desiring perfect performance may lead some individuals to spend more time than necessary preparing for different situations. This may include such behaviours as memorizing

class presentations in order to avoid making mistakes, or practicing answers in such detail for an upcoming job interview that they no longer sound spontaneous and natural, and instead sound rehearsed. This can be problematic and a poor use of time if individuals put forth too much effort preparing to the point that it is no longer helpful and perhaps detrimental to their performance.

Although there has not been much attention directed towards understanding how perfectionists prepare for important tasks and events, some studies have shown that individuals high in perfectionism use their preparation time less efficiently. Proofreading may be representative of overpreparation behaviours in that it is typically a behaviour done prior to the completion of a project or task. It should be noted, however, that proofreading may also be representative of various other proposed perfectionistic behaviours, specifically repeating behaviours or excessive perseverance. Stoeber and Eysenk (2008) demonstrated that participants who score highly on a measure of high personal standards, but not those who score highly on a measure of perceived discrepancy between their desired and actual performance, used their time less efficiently in a proofreading task. Although there was no direct relationship between perfectionism and absolute time spent on the task, it was found that as perfectionism increased, efficiency of time use decreased. Furthermore, perfectionism was positively correlated with the number of false alarms, or incorrect detections of errors. These findings have since been replicated, and it has additionally been found that individuals with higher perfectionistic strivings may spend objectively more time on proofreading tasks (Stoeber, 2011). These findings suggest that individuals high in perfectionism do not use their time efficiently, as when they invest more time into completing a task, their accuracy does not improve. This finding is consistent with the hypothesis that individuals high in perfectionism spend more time than is necessary preparing for important tasks or events; however, since the relevant literature is limited to the study of

proofreading, it is unclear at this point if similar findings would extend into life domains outside of work or school.

Repeating Behaviours

Individuals high in perfectionism may feel compelled to repeat tasks over and over again until they have been done to perfection. This may include checking e-mails for spelling mistakes multiple times before sending them or folding and refolding laundry until it has been done to one's satisfaction. These types of repeating behaviours may take up a large amount of time in one's day if such rigid standards are broadly applied. Individuals may feel like they cannot move onto the next task until each has been done and corrected enough times to have reached their high standard.

Not just right experiences (NJREs), a phenomenon commonly observed in individuals with obsessive-compulsive disorder (OCD), provide a good example of this type of situation. These experiences occur when an individual thinks or feels like something is not exactly the way it should be, or has not been done in the correct way. Individuals with OCD may encounter these experiences and feel compelled to perform some physical or mental action to correct the situation. Not surprisingly, NJREs have been found to be associated with perfectionism. A study by Coles, Frost, Heimberg, and Rheaume (2003) revealed that the perceived importance, intensity, and anxiety associated with NJREs are more strongly correlated with negative aspects of perfectionism such as concern over mistakes and doubts about actions than to positive aspects of perfectionism. This same study found that perfectionism was related to the frequency of NJREs such that those high in overall perfectionism reported experiencing more frequent NJREs. It is possible that these negative thoughts and emotions may lead individuals to behave in ways

to mitigate the discomfort of the experience such as checking or repeating an action until it feels “just right.”

Other studies examining symptoms of OCD provide evidence for the existence of repeating behaviours that may be linked to high levels of perfectionism. Rice and Pence (2006) demonstrated that heightened feelings of discrepancy, or that one’s actual performance does not measure up to his or her desired performance, is a significant predictor of checking behaviour. The Obsessive Compulsive Cognitions Working Group (OCCWG, 2005) reported that when controlling for anxiety and depression, perfectionism was a unique predictor of grooming and checking behaviours. Taken together, these studies suggest that repeating behaviours, specifically checking, appear to be a function of negative perfectionism in both clinical and nonclinical populations.

Excessive Reassurance Seeking

Many people consult with other trusted individuals prior to making important decisions. However, when individuals ask others for help, advice, or feedback in circumstances when asking will not actually provide the individual with any new or helpful information, this can be considered excessive reassurance seeking. It may be a way to reassure the individual that a decision that has already been made was correct or to ensure that both parties feel the same about a certain situation, even when this information has already been made clear or when this information is unimportant. Considering that perfectionistic individuals are highly concerned with perfect performance, it is possible that these individuals also seek out reassurance from others that their performance was adequate. Research by Stoltz and Ashby (2007) has shown that behaving cautiously is more strongly related with maladaptive perfectionism than with adaptive perfectionism. In this study, being cautious referred to a tendency to mistrust others due to a

belief that the environment is unpredictable or dangerous. In the same study, maladaptive perfectionists tended to want recognition or seek positive feedback from the environment more than nonperfectionists. Furthermore, overt self-criticism has been shown to be positively correlated with socially-prescribed perfectionism, concern over mistakes, and doubting of actions (Powers, Zuroff, & Topciu, 2004). These findings suggest that individuals with maladaptive perfectionistic traits may be more likely to admit their shortcomings and actively seek out feedback from external sources in order to increase the likelihood of achieving perfection.

Alternatively, it is also possible that individuals high in perfectionism may be reluctant to seek external reassurance out of fear of their imperfection being exposed. Indeed, perfectionistic self-presentation has been found to be correlated with self-concealment (Hewitt et al., 2003), and with nondisclosure and nondisplay of imperfection (Swami & Mammadova, 2012). This raises the question of how these two competing needs, the need to have perfect performance and the need to appear perfect to others, play out with respect to excessive reassurance seeking. At this point, it is still unclear if it is more important for perfectionists to perform perfectly or to appear perfect to others, or whether different aspects of perfectionism predict different outcomes in this domain.

Excessive Organizing

Organization is widely considered an integral feature of perfectionism. This is most apparent by the inclusion of an organization subscale in two of the most commonly used measures of perfectionism, the *Frost Multidimensional Perfectionism Scale* (Frost et al., 1990) and the *Almost Perfect Scale-Revised* (Slaney, Rice, Mobley, Trippi, & Ashby, 2001).

Organization is commonly considered an adaptive form of perfectionism. For example, it has been reported that individuals who score highly on a brief version of Frost's Organization

subscale are more likely to maintain a regular exercise regimen (Anshel & Seipel, 2006).

However, it is possible that there are instances when individuals high in perfectionism organize to an excessive degree, beyond that which is actually useful. For example, an individual may make such poor use of their time by creating lists, labelling household items, or making plans that they have difficulty actually getting anything done.

Certain cases where individuals endorse an extreme need to be organized to the point of functional impairment may warrant a diagnosis of obsessive-compulsive personality disorder (OCPD). According to the Diagnostic and Statistical Manual of Mental Disorders – Fifth edition (DSM-5; American Psychiatric Association, 2013) individuals with OCPD display “a pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control” (p. 678). One feature of this disorder that derives from rigid perfectionistic tendencies is a preoccupation with organization such that the overarching purpose of the activity becomes lost to the greater need to be organized. In support of the relationship between overall perfectionism and OCPD, the two have been found to be related within the context of other populations, specifically within clinical samples of individuals with panic disorder with and without agoraphobia (Iketani et al., 2002) and within individuals with eating disorders (Halmi et al., 2005). Interestingly, the findings reported by Halmi et al. indicated that across four samples of participants with eating disorders and certain comorbidities (neither OCD nor OCPD, only OCD, only OCPD, both OCD and OCPD), scores on the Organization subscale of the Frost Multidimensional Perfectionism Scale were not significantly different between groups. If excessive organization is a key feature of OCPD and by extension perfectionism, differences on this particular subscale should have been observed between the OCPD and nonOCPD groups. Instead, differences were found for every other subscale except Organization. This particular

finding calls into question the utility of using this subscale to assess excessive organization. This subscale includes such items as “I try to be an organized person” and “Neatness is very important to me,” which may not reflect pathological levels of organization. Relying on this measure to assess organization tendencies has made it difficult to delineate the relationship between perfectionism and excessive organizing.

Procrastinating

Individuals high in perfectionism may hold such high standards for their own performance that the thought of beginning work on a task with the possibility of falling short of their desired performance is frightening or overwhelming. This fear of not being able to complete the task up to their standard may result in delaying working until the last possible moment, also known as procrastinating. Indeed, Ferrari (1992) reported significant group differences such that procrastinators scored significantly higher on a measure of perfectionism compared to nonprocrastinators. A positive correlation between procrastination and socially prescribed perfectionism, especially among males, has also been reported (Flett, Blankstein, Hewitt, & Koledin, 1992). When examined more closely, it appears that fear of failure, rather than task aversiveness, is the most important motivation to procrastinate in individuals high in self-oriented and socially prescribed perfectionism. This finding has been supported more recently by similar results reported in a study examining perfectionism and procrastination in graduate students (Onwuegbuzie, 2000).

Many case studies of individuals struggling with clinically significant procrastination problems reveal underlying perfectionistic beliefs about performance (for a review, see Pychyl & Flett, 2012). In the study by Ferrari (1992), it was found that for procrastinators, perfectionism varied alongside social anxiety, both manipulative and protective self-presentation styles, and

self-handicapping. For nonprocrastinators, perfectionism varied more similarly with a manipulative form of self-presentation aimed at getting ahead of others. In this case, perfectionism appears to be associated with maladaptive psychological factors in nonprocrastinators and even more so in procrastinators. In a recent daily diary study testing a model of perfectionists' cycles of self-defeat, it was found that procrastination was consistently positively correlated with measures of socially prescribed perfectionism, perfectionistic discrepancies, and perfectionistic self-presentation (Mushquash & Sherry, 2012). It was also found that engaging in self-destructive behaviours including procrastination led to poorer affect the following day. This study provides the most ecologically valid evidence to date supporting the relationship between various aspects of perfectionism and procrastination.

Excessive Persevering

Sometimes an individual will work on a project for far too long even when it has become clear that the desired outcome is no longer feasible. Others may spend an exorbitant amount of time on a task when in reality it could have been completed to the same level in a much shorter period of time. It is possible that individuals high in perfectionism sometimes find themselves in these types of situations, wherein they have such a strong fear of failure or drive for success that more time is spent than is necessary on adequately completing a task or project. It is not surprising that perfectionism is related to increased time devoted to completing a task well, as demonstrated in a study that showed that in young musicians, perfectionism was positively correlated with time spent practicing their instruments (Stoeber & Eismann, 2007).

The real question is whether time invested in persevering for those high in perfectionism is excessive. The answer may be found in research examining overcommitment to work and workaholism. Overcommitment to work is defined as “seeking higher demands at work or

extending efforts at work beyond what is formally required by the organization” (Philp, Egan, & Kane, 2012, p. 69). A recent study by Philp et al. showed that both concern over mistakes and high personal standards were related to overcommitment to work, and that concern over mistakes was related to burnout. Structural equation modeling using path analysis showed that the relationship between concern over mistakes and burnout is mediated by overcommitment to work. This demonstrates that features of perfectionism lead to burnout at work, and that this occurs via overinvestment of time and effort, otherwise understood as excessive persevering at work.

Similarly, overall perfectionism has been shown to predict workaholism (Bovornusvakool, Vodanovich, Ariyabuddhiphongs, & Ngamake, 2012). Workaholism has been defined as limiting time spent doing other life activities due to time spent working, having thoughts and feelings about working take over your life, and going above and beyond necessary duties at work due to an internal drive rather than by external forces (Clark, Lelchhook, & Taylor, 2010). In a study examining specific features of perfectionism and workaholism, Clark et al. found that striving to achieve high standards predicted overall workaholism. Furthermore, a sense of discrepancy between desired and actual performance predicted overall workaholism, as well as impatience, feeling an internal compulsion to work, and wanting to be in control of many different tasks simultaneously at work. Although studies of this nature do not directly test excessive perseverance, overcommitment to work and workaholism provide a close approximation of the construct. These findings indicate that perfectionism is indeed an important variable to consider when discussing excessive perseverance on tasks and projects.

Quitting Too Soon

In contrast to persevering for too long, some individuals may give up altogether once a goal appears unreachable. For individuals with extraordinarily high standards, the fear of not meeting these standards may become intolerable. Rather than persevere only to realize that the standard is unreachable, perfectionistic individuals may quit sooner than others would as a way of protecting themselves from failing. Individuals high in perfectionism may find it easier to choose to give up early rather than to be faced with the possibility of being unable to reach their high standard. In a series of studies examining the implications of perfectionism in dating relationships, Flett, Hewitt, Shapiro, and Rayman (2001) found a positive correlation between socially-prescribed perfectionism and exit behaviour (i.e., wanting to break up the relationship when faced with conflict) and neglect (i.e., passively allowing the relationship to fall apart). However, there was also a positive correlation between socially prescribed perfectionism and loyalty. This suggests that when faced with an imperfect situation, this group of perfectionists may either allow the relationship to end prematurely or passively hope the partnership either dissolves or resolves itself. No other domain of perfectionism was related in any way with specific relationship behaviours. It is possible that perceived external pressure to be perfect or to have the perfect relationship has more of an impact on behaviour in dating relationships than does self-directed or other-directed perfectionism, and that elevated levels of socially prescribed perfectionism may be related to an inclination to exit the situation early when it becomes difficult. Furthermore, results of this work by Flett et al. also revealed that exit behaviour was correlated with lower beliefs in trust, love, support, coping, and respect. This implies that exit behaviour is related to negative beliefs about romantic relationships. Socially prescribed

perfectionism may play a role in mediating the association between beliefs and behaviours resembling quitting too soon in the domain of romantic relationships.

Although not a direct measure of quitting too soon, some work has been done in the area of perfectionism and self-handicapping, a means of enhancing social impressions by constructing excuses for poor performance (e.g., not adequately studying for a test so that poor test performance can be attributed to lack of studying rather than lack of ability), that may provide insight into this type of behaviour. Hewitt et al. (2003) found that individuals who score highly in perfectionistic self-presentation also score highly on measures of self-handicapping. An early study by Hobden and Pliner (1995) that required participants to choose their own testing environment for a difficult test provides support for the notion that socially prescribed perfectionism may be linked to this tendency towards giving up or not extending a strong effort. The results of this study indicated that when future success seemed less likely, participants high in socially prescribed perfectionism whose choice would be known by the experimenter chose testing environments that were more impairing, as compared to those low in socially prescribed perfectionism and those whose decision would not be revealed to the experimenter. In fact, 90% of participants high in socially prescribed perfectionism making a public decision chose to deliberately self-handicap as compared to 44% of participants low in socially prescribed perfectionism who also had to make a public decision. Similarly, participants high in self-oriented perfectionism chose more handicapping environments when faced with a difficult test compared to those low in self-oriented perfectionism. These findings suggest that perfectionists, especially those with the belief that others expect perfection from them, may give up or quit more readily than individuals without those performance concerns.

Avoiding

A common feature of many anxiety disorders is avoidance of the feared object or situation. For example, in social anxiety disorder, social or performance situations are often avoided in order to protect the individual from experiencing the discomfort associated with being in a social situation. Similarly, individuals with panic disorder often avoid arousing physical symptoms that are reminiscent of panic attacks. They may forego exercise in order to avoid the feared experience they have associated with sweating and increased heart rate, two common features of panic attacks. In a similar way, perfectionistic individuals may avoid a range of situations that evoke their fear of failure. Circumstances that involve evaluation of performance by any definition may be avoided altogether as a means of protecting oneself from possibly falling short of one's own or other people's expectations. This type of avoidance behaviour in perfectionistic individuals was suggested early on by Hamacheck (1978). More recently, Shafran et al. (2002) proposed avoidance behaviour as a key factor in the maintenance of clinical perfectionism.

In a study examining the coping strategies used by junior elite athletes, Hill, Hall, and Appleton (2010) found that self-oriented perfectionism was positively correlated with problem-focused coping and negatively correlated with avoidance coping, which was defined as denial and behavioural disengagement. Conversely, socially prescribed perfectionism was positively correlated with avoidance and had no association with problem-focused coping. It was further found that self-oriented perfectionism was negatively correlated with burnout, whereas socially prescribed perfectionism was positively correlated with burnout. A mediational analysis demonstrated that the relationship between perfectionism and burnout in junior elite athletes was fully mediated by coping strategies. This suggests that individuals with elevated levels of

socially prescribed perfectionism, but not self-oriented perfectionism, engage more in avoidance behaviours, which then lead to burnout when faced with stressful performance situations such as high level athletic competition.

Similarly, it has been found that higher avoidance behaviour in social problem-solving situations is associated with higher socially prescribed perfectionism, as well as higher perfectionistic self-presentation, nondisclosure of imperfection, and nondisplay of imperfection in women (Besser, Flett, & Hewitt, 2010). However, the pattern of associations appears to be different for men. For men, increased avoidance behaviour was associated with lower self-oriented perfectionism but higher other-oriented perfectionism, as well as higher perfectionistic self-presentation, nondisclosure of imperfection, and nondisplay of imperfection. For both men and women, problem-solving ability, including behavioural, cognitive, and emotional strategies, mediated the relationships between perfectionistic self-presentation and depression, and socially prescribed perfectionism and depression. It appears possible, based on the findings of this study, that the relationship between avoidance and different types of perfectionism may be moderated by external factors such as gender or the type of situation being encountered. It should be noted that a relationship between perfectionism and psychopathology appears to be mediated by avoidance behaviour in this study.

Another type of avoidance behaviour that has been studied with respect to perfectionism is experiential avoidance. Experiential avoidance is the refusal to engage with uncomfortable private or internal experiences such as memories, thoughts, or feelings. A study by Santanello and Gardner (2007) demonstrated that increased maladaptive perfectionism is predictive of increased experiential avoidance as well as worry. Furthermore, the relationship between maladaptive perfectionism and worry is partially mediated by experiential avoidance. This

finding provides further evidence that highly perfectionistic individuals tend to avoid uncomfortable experiences, and that this avoidance may contribute to more general psychopathology; in this case, excessive worry.

Refusing to Delegate and Attempting to Change Others' Behaviour

Many researchers have suggested an interpersonal component to perfectionism. Indeed, Hewitt and Flett (1991) proposed other-oriented perfectionism as a distinct feature of perfectionism, such that individuals hold unreasonably high standards for others. It makes intuitive sense that individuals who hold others to a higher standard may doubt other people's ability to reach the standard. For this reason, they may find it especially difficult to delegate important tasks to others when they feel that it will be completed to a higher standard if they take over and do it themselves. As was previously discussed, individuals who experience discrepancy between their actual performance and desired performance are more likely to endorse wanting to be in control of a variety of work tasks simultaneously (Clark et al., 2010). Alternatively, rather than taking over the task, these individuals may attempt to change or shape others so as to facilitate their ability to reach the high standard. People with high expectations of others may be especially critical, or carefully monitor other people's behaviour and provide corrections or suggestions for improvement by way of helping others to perform to a higher standard.

There is surprisingly little research on how perfectionism presents interpersonally considering the prominence of other-oriented perfectionism as an important construct throughout the literature. One study demonstrated that other-oriented perfectionism directed specifically at friends or partners partially mediated the relationship between dysphoria and hostile interpersonal behaviours (Wiebe & McCabe, 2002). For the most part, the closest approximation to examining interpersonal behaviours can be derived from personality research, which provides

insight into personality traits that may map onto certain behaviours. Hill, Zrull, and Turlington (1997) found that self-oriented perfectionism was positively correlated with assertiveness and dominance in both men and women. Men high in self-oriented and other-oriented perfectionism reported some interpersonal problems relating to controlling and manipulating others and being suspicious of others, but to a low degree. Problems with being domineering and intrusive in interpersonal relationships for men high in socially prescribed perfectionism caused a moderate amount of distress. Women high in other-oriented perfectionism showed some tendency toward attempting to change others, but this was to a minimal degree and caused only minimal interpersonal distress. Perfectionism was not generally associated with strong interpersonal distress caused by interpersonal problems, but perfectionists did appear have some tendencies towards interpersonal problems including distrust, suspiciousness, and attempts to change others. The most interpersonal distress was found in women who were high in socially prescribed perfectionism. These women experienced a wide variety of interpersonal problems, including but not limited to trying to change others and distrust of others.

It is possible that adaptive versus maladaptive forms of perfectionism also predict different types of interpersonal behaviours. For example, maladaptive perfectionism is more strongly associated with taking charge, or being comfortable with directing situations and directing other people, than adaptive perfectionism and nonperfectionism (Stoltz & Ashby, 2007). In addition, maladaptive perfectionists who are generally hostile tend to be highly domineering, whereas friendly-submissive maladaptive perfectionists appear to be highly exploitable and nonassertive (Slaney, Pincus, Uliaszek, & Wang, 2006).

The findings from these studies suggest that there may be an interpersonal component to perfectionism, and that depending on the type of perfectionism that is endorsed, suspiciousness

of other people may lead to a refusal to delegate. Furthermore, those with domineering and directive personalities may be more likely to attempt to change other people's behaviour. It is important to note, however, that none of these studies report findings that were captured in naturalistic settings or directly assessed by trained observers.

The Present Study

The purpose of the present study was to understand the occurrence of each of these 10 proposed perfectionistic behaviours in a naturalistic setting. The main focus of the study was to identify whether perfectionism is associated with these proposed perfectionistic behaviours, as well as situational triggers, frequency, and consequences of engaging in specific perfectionistic behaviours. In order to gain an understanding of the presentation of perfectionistic behaviours, an event-contingent diary study design, wherein participants initiate each point of data collection soon after a specific event has occurred, was used to improve upon past studies that have relied primarily on cross-sectional designs. This design is preferred for investigating behaviours that may be rare or may not be present if participants are cued at fixed or intermittent time periods (Conner & Lehman, 2012). This type of methodology has begun to emerge in the perfectionism literature. Similar methods have been used in examining perfectionism in binge eating (Sherry & Hall, 2009) and the cycles of self-defeat in socially prescribed perfectionists including both internal processes and maladaptive behaviours limited to procrastination, binge eating, and interpersonal conflict (Mushquash & Sherry, 2012). Diary studies have not yet been applied to the study of more general behavioural manifestations of perfectionism.

Hypothesis

1. The ten proposed perfectionistic behaviours (i.e., overpreparing, repeating behaviours, excessive reassurance seeking, excessive organizing, procrastinating, excessive

persevering, quitting too soon, avoiding, refusing to delegate, attempting to change other people's behaviour) were predicted to be related to perfectionism. It was predicted that the frequency of these behaviours (according to the perfectionistic behaviour diary) would be positively correlated with perfectionism scores, and that perfectionism scores would significantly predict frequency of perfectionistic behaviours.

Exploratory Questions

1. Will the frequency of each specific behaviour show unique relationships with various facets of perfectionism?
2. Will certain behaviours occur more frequently in specific contexts and life domains?
3. Will different behaviours be differentially triggered by external (i.e., context, life domain) versus internal (i.e., urge to do behaviour) motivations?
4. Will each behaviour interfere to a similar extent in participants' daily lives, or will some behaviours interfere more than others?
5. Will different behaviours elicit different changes in affect?

Method

Participants

Participants for this study were 126 individuals who were recruited using posters (see Appendix A) placed around Ryerson University campus in Toronto, Ontario, and were compensated with \$25. In order to be eligible to participate, participants were required to be proficient in English, be over the age of 17, have daily Internet access, and have no cognitive impairments. This sample size was determined based on another study that used similar methodology to examine the nature of social comparisons in a socially anxious sample (Antony et al., 2005). Six participants were lost to attrition during Part 2 of the study. Of the remaining 120 participants, one was excluded based on inconsistent responding across questionnaires, and three were excluded based on excessive missing or incorrect data across diary entries. For example, if a participant reported a behaviour as excessive reassurance seeking but in the written description, it was clear that the behaviour was actually repeating behaviours (e.g., repeatedly checking the mirror to make sure one still looks okay), this was considered incorrect data. The final sample consisted of 116 participants (84 female, 31 male, 1 self-identified as genderfluid) with a mean age of 23.18 years ($SD = 7.75$, range 17-64). Most participants identified their ethnicity as Asian (45.7%) or White/European (33.6%), followed by bicultural/multiracial (7.8%), Black/Afro-Caribbean/African (6.9%), Hispanic/Latin American (3.4%), and other (2.6%). In this sample, 88.8% of participants reported that they were currently enrolled in school, mostly in a broad range of undergraduate and graduate university programs. Similarly, with respect to education level, the majority of participants had completed some college or university (52.6%). The remaining participants had completed high school or a high school equivalency

program (19.8%), completed college or university (16.4%), completed some graduate or professional school (6.9%), or completed graduate or professional school (4.3%).

Measures

Frost Multidimensional Perfectionism Scale (FMPS). The FMPS (Frost et al., 1990) is a 35-item self-report measure that assesses six aspects of perfectionism. These include Concern over Mistakes (CM), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), Doubts about Actions (DA), and Organization (O). Subscale scores are calculated by summing the items within each domain, with higher scores indicating greater perfectionism. A total score can be obtained by summing all the items excluding those captured by O, as this subscale does not correlate well with the other subscales. The FMPS has been shown to have excellent internal consistency with Cronbach's alpha of .91 for the total score as well as good convergent validity. Cronbach's alphas for each subscale have been reported for CM (.88), PS (.83), PE (.84), PC (.84), DA (.77), and O (.93; Frost et al., 1990). Cronbach's alphas in the present study were as follows: Total score (.93), CM (.91), PS (.77), PE (.88), PC (.83), DA (.73), and O (.88).

Hewitt and Flett Multidimensional Perfectionism Scale (HMPS). The HMPS (Hewitt & Flett, 1991) is a 45-item self-report measure that assesses three types of perfectionism: Self-Oriented, Other-Oriented, and Socially Prescribed perfectionism. Self-Oriented (SO) perfectionism is characterised by a desire to achieve high personal standards. Other-Oriented (OO) perfectionism represents a tendency to expect high standards of achievement from others. Socially Prescribed (SP) perfectionism reflects an individual's perception that others have high expectations for one's own performance. Subscale scores can be derived by summing the items on each subscale, with higher scores indicating greater perfectionism. Unlike the FMPS, a total

perfectionism score cannot be obtained using this measure. Good reliability coefficients have been reported for each of the subscales, with Cronbach's alphas ranging from .82 to .87. Intercorrelations between the subscales range from .25 to .40 indicating some degree of overlap between these dimensions, but not to the extent that the constructs are interchangeable (Hewitt & Flett, 1991). Alphas for the current study were .89 for SO, .79 for OO, and .89 for SP..

Researchers often combine subscales of various perfectionism measures in order to obtain scores of *adaptive* and *maladaptive perfectionism* (e.g., Bieling, Israeli, Smith, & Antony, 2003; Wu & Wei, 2008). After converting subscale scores into z-scores, the following subscales were summed to create a composite score of adaptive perfectionism (AP): PS and O (from the FMPS), and SO and OO (from the HMPS). A composite score of maladaptive perfectionism (MP) was computed by summing CM, PC, PE, and DA (from the FMPS) and SP (from the HMPS). Cronbach's alphas in the present study for AP and MP were .68 and .86 respectively.

Behavioural Domains Questionnaire (BDQ). The BDQ is a relatively new measure that assesses frequency of perfectionistic behaviour (Lee et al., 2011). This measure consists of 37 self-report items that tap into five life domains and seven types of behaviours. The life domains include housework, work, social, hobbies, and appearance. The behaviours examined in this measure include spending excessive time, being overly thorough, inability to stop activities once begun, checking, difficulty completing tasks, safety behaviours, and avoidance. Although Lee et al. propose using subscale scores to assess perfectionistic expression across these life domains and behaviours, independent reliability and validity analyses are currently lacking to support using the BDQ in this way. However, the full-scale internal reliability appears to be adequate at this time with a reported Cronbach's alpha of .92 (Lee et al., 2011). For the current study, a total

score was computed by summing scores for all items with higher scores indicating more frequent endorsement of general perfectionistic behaviour. Cronbach's alpha was .92.

Perfectionistic Behaviour Tendencies (PBT). Participants were asked to indicate their general tendency to engage in each of the 10 behaviours being investigated in the current study. Participants read a brief description of each behaviour and rated how true the description is of them on a 5-point Likert scale. This measure has previously been used in a preliminary study of behavioural expressions of perfectionism (McCabe-Bennett, Antony, & Cassin, 2013). Findings from this study will provide support for the predictive validity of this measure. This scale had good internal consistency in the present study, with Cronbach's alpha of .79. See Appendix B.

Perfectionistic Behaviour Diary. Participants were asked to complete a perfectionistic behaviour diary (see Appendix C) each time they engaged in a perfectionistic behaviour. This diary was based in part on a diary used by Antony, Rowa, Liss, Swallow, and Swinson (2005) to monitor social comparisons. A brief description of each of the 10 behaviours was printed on the reverse side of the diary. Participants were asked to indicate which of the behaviours they were reporting on, with the option of selecting more than one behaviour, and to describe the behaviour in more detail. Information was obtained on the context(s) (i.e., activity, location, or other circumstances that were present at the time the behaviour occurred) as well as the domain(s) of the behaviour (i.e., aspect of the self or other person the behaviour was intended to impact, such as social skills, physical appearance, etc.). Participants were then asked to rate the level at which the behaviour interfered with their day, plans, or goals, as well as the strength of the urge to do the behaviour, and the level of distress they would have experienced had the behaviour not been done. Participants then recorded the extent to which they experienced nine emotions and cognitions prior to and after completing the behaviour. Participants then described in their own

words their motivation for completing the behaviour. Finally, participants were asked to rate the effect of the behaviour and the likelihood that they would engage in the same behaviour when faced with a similar situation in the future. These diaries were used as a measure of the type and frequency of perfectionistic behaviours observed over a 2-week period, as well as their triggers and outcomes.

Depression Anxiety Stress Scales - 21 item version (DASS-21). The DASS-21 is a brief version of the 42-item *Depression Anxiety Stress Scales* (Lovibond & Lovibond, 1995). This 21-item measure assesses depression, anxiety, and stress/distress/tension. Participants respond on a 0-3 point scale how much each statement applied to them over the past week. When scoring the DASS-21, scores are doubled in order for the DASS-21 results to be comparable to the full DASS scales. On the shortened version, the subscales have been reported to have low to moderate intercorrelations, with Pearson's r values ranging from .28 to .53 (Antony, Bieling, Cox, Enns, & Swinson, 1998). The DASS-21 has been shown to have good convergent validity as well as good to excellent internal consistency, with Cronbach's alphas for the subscales ranging from .87 to .94. Cronbach's alphas for the present study for the depression, anxiety, and stress subscales were .88, .85, and .85 respectively.

Procedure

Participants in this study were monitored for a period of 14 days. On Day 1, participants were invited to the lab for a 1-hour session. During this session, informed consent was obtained and the procedure was explained in detail. Participants first completed a battery of questionnaires (FMPS, HMPS, BDQ, PBT, DASS-21). They were then introduced to the Perfectionistic Behaviour Diary. The experimenter read aloud the descriptions of the 10 behaviours and participants had the opportunity to ask questions at any time. The experimenter then explained

each portion of the diary in detail while participants completed a practice diary. Before leaving the in-lab session, participants were given five hard copies of the diary with the descriptions of the behaviours printed on the back of each page for quick reference.

At the end of Day 1, and for each subsequent day up to and including Day 14, participants were required to log in to a secure survey website and indicate how many diaries were completed that day. Participants were e-mailed the link to the survey each day to act as a reminder to complete the diaries and as a means of tracking how many diaries were completed. These reminder e-mails also included an electronic copy of the diary to allow participants to print off more hard copies as needed. Participants were encouraged to ask further questions that may have come up with respect to completing the diaries at any point in time. On Day 15, participants were required to submit copies of all completed diaries to the experimenter by hand-delivering them to the lab. At this point, the experimenter asked participants to estimate the percentage of perfectionistic behaviours that were actually captured in the diaries over the course of the study. Participants were then fully debriefed on the purpose of the study and compensated for their participation.

Results

Prior to conducting any analyses, the raw data were examined for normality, outliers, and missing data. All analyses are reported at the individual participant level, not the diary level (i.e., frequency of total behaviours represents frequency reported per individual, not frequency reported within one diary).

Part 1 questionnaire data. There were no participants with greater than 20% missing data; therefore missing data were replaced by substituting the mean score of the scale or subscale for that participant. One participant was removed based on inconsistent reporting across questionnaires (i.e., recording the same response for each item on multiple questionnaires). All perfectionism measures were normally distributed and contained no outliers. The depression and anxiety subscales of the DASS-21 were significantly positively skewed, which indicates that this sample was largely low in anxiety and depression.

Diary data. Diaries than contained greater than 20% missing or incorrect data were removed from the analyses. This resulted in the exclusion of 11 of the 881 diaries that were originally submitted, leaving a final sample of 870 diaries. After removing problematic diaries, if greater than 20% of a participant's total dairies were removed then the participant was removed altogether from the analyses. Of the 120 participants who completed Part 2 of the study, three participants were removed due to problematic diary data, leaving 117 participants whose data were usable in the final analyses. One participant with usable diary data was excluded from the final analyses due to inconsistent reporting in Part 1. Missing data on diaries that contained less than 20% missing data were replaced with the mean score of the missing item for that participant. Some diary data were identified as incorrect and the corrected data were included in the analyses. For example, 76 of 1,133 (6.71%) behaviours¹, 12 of 916 (1.31%) contexts, and 2

of 1,259 (0.16%) domains were corrected based on the description provided by the participant. Two additional contexts were added posthoc to account for the high frequency of participants who selected “Other” and provided a description of either engaging in daily living activities while at home (e.g., getting dressed in the morning, completing errands at home) or working at home (e.g., doing homework, doing work-related activities while at home). Of the 916 total contexts reported, 218 (23.80%) were changed from “Other” to either one of the new contexts, “At home – daily living” or “At home – working.”

The distributions for total contexts, total domains, and interference were all normal. The distribution of total behaviours was positively skewed, indicating that a larger proportion of participants completed fewer rather than greater numbers of behaviours. This could be influenced by the finding that there was a disproportionately large percentage of participants who completed five diaries (minimum = 0, maximum = 20, $M = 7.40$, $SD = 4.37$), perhaps because they were given five hard copies of the diary in the first lab session. The distribution for urge to engage in behaviour was negatively skewed and the range was limited in that the majority of participants rated their urge as very strong. Mean affect after the behaviour was normally distributed, but mean affect before the behaviour was marginally positively skewed suggesting that participants felt more negatively before engaging in perfectionistic behaviours overall. Compliance showed a distribution with negative kurtosis, which indicates that compliance scores had a broad range without a central peak. See Tables 1-3 for descriptive statistics and outliers for variables included in the diary data analyses.

Hypothesis: Perfectionistic behaviours will be correlated with and predicted by perfectionism scores. Correlational and regression analyses were used to determine relationships between measures of perfectionism and observed engagement in perfectionistic

behaviours. First, a correlation analysis was run that included the following variables: Total number of perfectionistic behaviours reported over the 2-week period, subscale scores on the FMPS and HMPS, composite maladaptive perfectionism score, composite adaptive perfectionism score, BDQ total score, PBT total score, DASS-21 depression, DASS-21 anxiety, DASS-21 stress, gender, and age. See Table 4 for a summary of Pearson's r correlations between the frequency of perfectionistic behaviours and various perfectionism measures. With respect to additional possible predictors, frequency of total behaviours was positively correlated with depression ($r = .34, p < .001$), anxiety ($r = .27, p = .003$), and stress/distress/tension ($r = .49, p < .001$) as measured by the DASS-21. Frequency of total behaviours was not significantly correlated with gender or age.

Following this correlational analysis, a multiple regression was conducted to determine predictors of the frequency of perfectionistic behaviours. Any variables that showed a significant correlation with the total number of perfectionistic behaviours, including anxiety, depression, and stress were entered into the analysis. A forward variable selection technique was applied, such that the variables that accounted for the greatest amount of variability in behaviour frequency were entered into the model first, followed by those variables that accounted for less variability. A significant regression was found to predict frequency of perfectionistic behaviours, as can be seen in Table 5, $R^2 = .28, F(2, 213) = 21.42, p < .001$. Increased stress/distress/tension and adaptive perfectionism were found to be significant predictors of greater frequency of perfectionistic behaviours.

Considering that including distress in the previous regression may have excluded important variance captured by other perfectionism measures, the regression analysis was run again excluding anxiety, depression, and stress DASS-21 subscales. By excluding these from the

list of possible predictors, it may be possible to garner a more nuanced picture of the unique role that perfectionism measures can play in predicting perfectionistic behaviours. A significant regression was found as can be seen in Table 6, $R^2 = .16$, $F(2, 213) = 10.57$, $p < .001$. This regression indicates that FMPS Total score and Organization account for unique variance.

Exploratory Question 1: Will the frequency of each specific behaviour show unique relationships with various facets of perfectionism? The same technique as described above was used to determine correlations and predictors for each of the 10 specific behaviours. For the correlational analyses, the frequency of each behaviour was included rather than the total frequency of all behaviours. See Table 7 for a summary of Pearson's r correlations between each behaviour and perfectionism measures. Contrary to the prediction that each behaviour would correlate with some facet of perfectionism, procrastination, refusing to delegate, and attempting to change other people's behaviour did not show any significant correlations with perfectionism measures. As can be seen in Table 8, the only two behaviours that showed significantly different correlations with adaptive and maladaptive perfectionism were excessive organizing and quitting too soon. Excessive organizing had a significantly stronger positive correlation with adaptive perfectionism, whereas quitting too soon had a significantly stronger positive correlation with maladaptive perfectionism.

Exploratory Question 2: Will certain behaviours occur more frequently in specific contexts and life domains? See Table 2 for a summary of the distribution of reported contexts and life domains. In order to understand the relationship between specific behaviours and the contexts and domains in which they are most likely to appear, multiple correlation analyses were performed. As can be seen in Tables 9-10, differential contexts and domains are more strongly correlated with various perfectionistic behaviours. For example, nine out of 10 behaviours were

correlated with social contexts, whereas only excessive persevering and quitting too soon were correlated with hobbies. With respect to life domains, neatness/organization was implicated across almost all behaviours with the exception of quitting too soon and attempting to change other people's behaviour. Athletic ability was correlated with the fewest behaviours, namely excessive perseverance and quitting too soon.

Exploratory Question 3: Will different behaviours be differentially triggered by external (i.e., context, life domain) versus internal (i.e., urge to do behaviour) motivations?

Urge to do behaviour as assessed by question 6 on the perfectionistic behaviour diary was not significantly correlated with frequency of total perfectionistic behaviours, or with any specific behaviour.

Exploratory Question 4: Will each behaviour interfere to a similar extent in participants' daily lives, or will some behaviours interfere more than others? A correlation

analysis was conducted that included the following variables: Total number of perfectionistic behaviours, depression, anxiety, gender, age, and interference as measured by mean score reported in question 5 on the perfectionistic behaviour diary for how much the behaviour interfered with the participants' day, plans, goals, etc. A correlation analysis revealed that frequency of total perfectionistic behaviours was positively correlated with interference ($r = .24$, $p = .01$). The only specific behaviours that showed significant correlations with interference were frequency of overpreparing ($r = .22$, $p = .016$), procrastinating ($r = .23$, $p = .016$), excessive persevering ($r = .19$, $p = .044$), and quitting too soon ($r = .24$, $p = .012$).

Exploratory Question 5: Will different behaviours elicit different changes in affect?

Change in affect was obtained by comparing the mean of pre and postbehaviour feeling scores, with higher scores indicating more positive affect [question 8(a) and 8(b) on the perfectionistic

behaviour diary]. Group differences were assessed using paired samples *t*-tests. This revealed that participants generally experienced more positive affect after engaging in perfectionistic behaviours in general ($M = 4.49$, $SD = 1.15$) compared to before doing perfectionistic behaviours ($M = 3.72$, $SD = 1.19$; $t(114) = -7.246$, $p < .001$). With respect to changes in affect associated with specific behaviours, independent samples *t*-tests revealed that individuals who reported overpreparing generally experienced a larger increase in positive affect ($M = 0.99$, $SD = 1.16$) compared to participants who did not engage in overpreparing ($M = 0.19$, $SD = 1.00$; $t(112) = -2.70$, $p = .008$). Similarly, participants who engaged in excessive reassurance seeking ($M = 1.02$, $SD = 0.97$) experienced a greater improvement in affect compared to those who did not excessively seek reassurance ($M = 0.45$, $SD = 1.25$; $t(112) = -2.72$, $p = .007$).

Discussion

The main hypothesis of the current study (i.e., that the frequency of the proposed perfectionistic behaviours would be positively correlated with measures of perfectionism) was supported. In fact, all measures of perfectionism, with the exclusion of HMPS Other-Oriented perfectionism, were found to be positively correlated with overall frequency of perfectionistic behaviours. Two regression analyses were conducted to determine predictors of perfectionistic behaviours. In one, adaptive perfectionism and stress/distress/tension were the only significant predictors of frequency of total perfectionistic behaviours, and both predictors contributed similar predictive value to the regression. In the second, which did not include anxiety, depression, or stress as possible predictors, FMPS Total score and FMPS Organization were significant predictors of overall frequency of perfectionistic behaviours. The first regression accounted for more overall variance, and DASS-21 Stress was associated with the highest beta value suggesting the greatest predictive contribution. The second regression accounted for less overall variance, suggesting a weaker model, but indicated different measures of perfectionism as predictors of perfectionistic behaviours. These findings suggest that although distress accounts for significant variance in perfectionistic behaviour, it is possible that by including it as a predictor may be removing important variance from other aspects of perfectionism that could also be meaningful predictors of actual behaviour such as FMPS Total score. Indeed, as can be seen in Table 6, FMPS Total score was significantly positively correlated, with moderate effect sizes, with six of 10 individual perfectionistic behaviours. Maladaptive perfectionism was similarly correlated with six behaviours, whereas the remaining measures were correlated with fewer behaviours. It should also be noted that although both regressions were statistically significant, they only accounted for 16-28% of the total variance in frequency of total

perfectionistic behaviours. This is a small to moderate amount of variance, and it is possible that other important factors such as insight, desire for perfectionistic self-presentation, or other contextual factors (e.g., possible greater frequency in overpreparing during exam period versus while on holiday) may be responsible for added variance in predicting perfectionistic behaviours.

Although overall it appears that the proposed perfectionistic behaviours were indeed correlated with and predicted by certain perfectionism measures, when examining the behaviours in isolation, some unique relationships were identified. Interestingly, it was found that three proposed perfectionistic behaviours (i.e., procrastination, refusal to delegate, and attempting to change other people's behaviour) were not significantly correlated with any measures of perfectionism. The apparent lack of correlation between perfectionism and procrastination is perhaps the most surprising given previous findings suggesting that a strong relationship between the two constructs does exist (e.g., Ferrari, 1992; Flett et al., 1992; Onwuegbuzie, 2000). One possible explanation for this discrepancy in the evidence could be in reporting patterns of perfectionistic individuals. For example, in the majority of other studies, participants provided self-report data on their perceived tendency to procrastinate. In the daily diary study by Mushquash and Sherry (2012) that monitored procrastination across 7 days, participants responded to five items from a standardized procrastination questionnaire (Tuckman, 1991) that included items such as "I promised myself I'd do something and then dragged my feet." It is possible that individuals high in perfectionism believe that they procrastinate more than they actually do, or may experience stronger guilt and shame as a result of procrastinating while not actually procrastinating more than nonperfectionists. Normative levels of procrastinating may seem excessive for individuals with exceptionally high standards for their own desired productivity, thus influencing them to report their procrastination as more frequent or interfering

than it may actually be. Another possible explanation for this discrepancy is that the diary in the current study may have been a poor method of assessing procrastination. Moskowitz and Sadikaj (2012) suggest that events without a distinct onset or termination may be problematic for event-contingent data collection, such that participants may have difficulty identifying a trigger to cue them to record the behaviour. It is possible that procrastination may be one such behaviour, as it may not necessarily have a clearly identifiable start or end point. It is also possible that individuals with a tendency to procrastinate often procrastinated on completing the perfectionistic behaviour diary, which may have resulted in nonrepresentative data.

Only two behaviours were shown to have differential relationships with adaptive and maladaptive perfectionism. Excessive organizing had a significant positive correlation of moderate effect size with adaptive perfectionism, and a nonsignificant correlation with maladaptive perfectionism. It should be noted that the FMPS Organization subscale represents a component of the adaptive perfectionism composite score, and that the correlations between FMPS Organization and adaptive perfectionism with the frequency of excessive organizing were not significantly different ($z = -0.59, ns$). However, the correlations between frequency of excessive organizing and adaptive perfectionism were not significantly different than that of any other perfectionism measure that was significantly correlated with excessive organizing. This suggests that it is not necessarily the case that FMPS Organizing is solely responsible for the significant correlation with adaptive perfectionism.

Quitting too soon was shown to have a stronger correlation with maladaptive perfectionism compared with adaptive perfectionism, where a nonsignificant correlation was found. This relationship is unsurprising given the finding that quitting too soon was also significantly positively correlated with interference in daily activities.

Overpreparing was correlated with many measures of perfectionism. This finding suggests that overpreparing may be associated with both positive and negative aspects of perfectionism. Repeating behaviours demonstrated similar correlations with measures of both maladaptive and adaptive perfectionism. Previous research might suggest that repeating behaviours would be more strongly associated with negative perfectionism because this body of literature tests OCD paradigms (e.g., Coles et al., 2003; Rice & Pence, 2006) or uses clinical samples (OCCWG, 2005). It is possible that in the present study, all types of repeating behaviour and not just compulsive repeating behaviour was observed, and that this type of repeating is less pathological when observed in a community sample.

With regard to excessive reassurance seeking, it appears that increasing the chances of achieving perfection may be more important than appearing perfect, given the breadth of moderate positive correlations with various measures of perfectionism. However, this study did not include a measure of perfectionistic self-presentation, which limits the ability to make assumptions about difference in excessive reassurance seeking between these two realms. It is possible that if such a measure had been included, it may have demonstrated stronger correlations with this behaviour (Hewitt et al., 2003; Swami & Mammadova, 2012).

Although the strength of the correlations between adaptive and maladaptive perfectionism with excessive perseverance were not significantly different, given the distribution of significant versus nonsignificant correlations it appears that this behaviour may be more strongly associated with negative aspects of perfectionism. This is not entirely unexpected given that previous research has shown that concern over mistakes, a facet of negative perfectionism, mediates the relationship between overcommitment to work and burnout (Philp et al., 2012).

Similarly, avoidance appears to be more strongly related with negative aspects of perfectionism than positive as evidenced by moderate positive correlations with FMPS Concern over Mistakes and maladaptive perfectionism. However, there was no evidence to suggest that increased levels of perfectionism would be associated with perfectionistic interpersonal behaviours such as refusing to delegate and attempting to change other people's behaviour. Perhaps the most interesting finding here is the lack of correlation between these behaviours and other-oriented perfectionism, which has been widely accepted in the literature as a valid construct. These nonsignificant correlations taken together with previous findings that self-oriented, other-oriented, and socially prescribed perfectionism are associated with low levels of interpersonal distress (Hill et al., 1997) calls into question the utility of considering other-oriented perfectionism an important facet of this multidimensional construct. Alternatively, it may be important to consider perfectionism in interpersonal contexts if the focus is to remain on cognitive and emotional responses to disappointment or fear regarding others' inability to perform up to their projected standards. It could be the case that perfectionists "suffer in silence" and do not act in observable ways that are congruent with their internal experience of feared disappointment. This is an empirical question that has yet to be investigated.

Correlations in the present study revealed that although a number of proposed perfectionistic behaviours have been suggested to be apparent in specific domains, they may in reality persist across a broader range of contexts and domains. For example, the literature may have suggested that socially prescribed perfectionism would be positively correlated with quitting too soon based on associations that have been reported between this facet of perfectionism and early exit behaviour in relationships (Flett et al., 2001). Although quitting too soon was correlated with socially prescribed perfectionism, it was also correlated with other

measures of perfectionism. Quitting too soon was also positively correlated with various contexts (e.g., while at work or school, while doing a hobby) and life domains (e.g., moderate to large correlations with academic/work performance, health, physical appearance, and athletic ability) in addition to social contexts. In fact, quitting too soon was not significantly correlated with social skills domain. This highlights the importance of recognizing that just because a behaviour has been studied within a specific context (e.g., excessive perseverance while at work; Bovornusvakool et al., 2012; Clark et al., 2010; Philp et al., 2012), this does not necessarily mean that the behaviour does not also appear in other contexts. Rather, the behaviour might persist across contexts and life domains regardless of whether it has been specifically noted in the literature.

The results of this study did not indicate that different behaviours would be differentially triggered by external versus internal motivations. Internal motivation was operationally defined as the urge to do the behaviour. The limited range and skewed distribution of responses to this question provide some information about the nature of perfectionistic behaviours in general. It appears from this interesting distribution that virtually all of the proposed perfectionistic behaviours were driven by a strong urge to do the behaviour. This has likely been observed clinically within the populations that typically experience heightened perfectionism. For example, in eating disorders, where there is a strong desire to follow one's rigid eating rules (Bardone-Cone et al., 2010), or in obsessive-compulsive personality disorder, wherein individuals feel compelled to adhere to arbitrary perfectionistic rules (American Psychiatric Association, 2013). It is also possible that there is a consistently strong urge to engage in behaviours that individuals believe will promote positive affect.

The results of this study indicate that the frequency of certain behaviours may be more interfering in daily life than others, specifically overpreparing, procrastinating, excessive persevering and quitting too soon. These findings are not surprising given that interference is plausible in the contexts in which the behaviours have been observed. Reduced efficiency through overpreparing may result in difficulty completing daily tasks in an appropriate amount of time (Stoeber, 2011). Similarly, procrastinating as a means of self-handicapping (Hewitt et al., 2003; Hobden & Pliner, 1995) may interfere with one's achievement plans on a specific task. Excessive perseverance has been shown to lead to interfering outcomes such as burnout at work (Philp et al., 2012). Finally, quitting too soon such as early exit behaviour from relationships (Flett et al., 2001) may equate to interference in one's plans for the relationship.

Overall, participants rated their affect as improved after having completed a perfectionistic behaviour compared to prior to engaging in the behaviour. The only behaviours that appeared to be related with significantly different changes in affect were overpreparing and excessive reassurance seeking. Participants who reported engaging in either of these behaviours reported greater improvements in affect compared to those who did not engage in these behaviours.

Several limitations of the current study may have an impact on the generalizability of the findings. For example, the current sample primarily consisted of postsecondary students. It is possible that participants in this study were not representative of the general population, especially with respect to perfectionism and perfectionistic behaviours. For example, these tendencies and behaviours may occur more frequently in postsecondary students due to the nature of the demands of their day-to-day lives. It is also possible that the timing of the study may have influenced the findings, such that participants may have been behaving in a more

perfectionistic way during exam and midterm periods than they normally would at other times. However, it is unlikely that timing had a significant effect on the results, as the data was collected over the course of a full semester, meaning that participants' behaviours were captured equally across busy and less busy times during the school year. In addition, participants in this sample were not limited to first year psychology undergraduate students, which is often the case in psychology research. Rather, students in this sample were enrolled in a variety of specialities and year of study, including some students at the graduate level.

Another limitation concerns the context response options that were available on the diary. Due to the large number of participants who selected "Other," two additional contexts were included posthoc (at home: Daily living, and at home: Working). It is possible that had these options been available on the original diary, the distribution of responses to this question may have been different. Although efforts were made to ensure that context responses were only changed to fit these new categories if it was obvious that the participant would have chosen that option had it been available, it is possible that other participants may have selected the "next best" option, such as at work or school or while doing housework rather than selecting other. Future studies using a similar diary should include this correction prior to starting data collection.

An additional limitation to the current study may have been that the number of hard copy diaries that were distributed to participants may have influenced how many diaries and behaviours they reported. When observing the distribution of the number of diaries completed, there is a notable peak at the five diary mark. It is possible that participants did not wish to print off additional diaries and chose to report on only the first five behaviours that occurred, or that participants assumed that they were only expected to complete five diaries even though they

were told otherwise by the researcher. Future studies should consider other options for providing diaries. Researchers could choose to not provide any hard copy diaries and inform participants that they will have to print out however many are needed, provide a greater number of diaries to increase the likelihood that more behaviours will be reported, or have participants complete diaries online so that no hard copies are required.

One major limitation with event-contingent recording designs is the reliance on participants to adequately notice and report on their own target behaviours while going about their daily lives. In the present study, participants reported a large range of what proportion of behaviours that were actually captured in the diaries (10%-100%). It is possible that there were many behaviours that occurred over the 2-week monitoring period that were not recorded. Had all behaviours been adequately captured, it is possible that the findings would have been different. One way to address this limitation in future studies may be to shorten the length of the monitoring period to something that could be completed in-lab and have trained research assistants observe participants' behaviours and record their frequency. However, this design presents its own limitations, most importantly that the setting would by nature be contrived and the findings may not be generalizable to nonlab settings.

Another limitation with respect to data analysis is the use of multiple comparisons (e.g., multiple correlations, regressions, *t*-tests), which may have resulted in inflated Type I error rates. However, there are compelling arguments in favour of avoiding statistical corrections such as Bonferroni corrections in cases of multiple analyses. Some authors suggest that imposing statistical corrections unnecessarily inflate the risk of Type II error (Morgan, 2007; Rothman, 1990). Given the exploratory nature of the present study, it was decided that a greater risk of Type I error was preferred over a greater risk of Type II error. Arguably, at this stage in this

body of research it would be more problematic to neglect to report a potential relationship that could serve as the basis for future, more fine grained and nuanced research than to cautiously report a relationship that may not hold in future studies. However, the decision to refrain from applying statistical corrections in this study should not be ignored and it is recommended that the findings of the present study should be interpreted cautiously and require replication in future studies.

The present study has implications for future research, as it provides a well-needed foundation for assessing these proposed perfectionistic behaviours in more detail. For example, the findings of this study may inspire future research to investigate whether individuals high in perfectionism actually do procrastinate more than their nonperfectionistic counterparts, or if they merely perceive their procrastination as more frequent or more interfering. The findings from the present study with respect to interpersonal perfectionistic behaviours call into question the construct of other-oriented perfectionism, and may lead researchers to examine the question of whether other-oriented perfectionists suffer their fears and disappointments in silence but do not act on these emotions and cognitions, or whether the construct as a whole is unfounded.

The present study also provides evidence for the utility of more newly developed measures of perfectionistic behaviours, notably the *Behavioural Domains Questionnaire* (Lee et al., 2011) and the *Perfectionistic Behaviour Tendencies* scale (McCabe-Bennett et al., 2013). Both of these measures were found to be positively correlated with frequency of total behaviours, and five of the 10 proposed perfectionistic behaviours including overpreparing, repeating behaviours, excessive reassurance seeking, excessive organizing, and quitting too soon. These measures should continue to be used in future studies of perfectionistic behaviours, as they appear to provide valuable information about these specific behaviours.

These findings also have clinical implications for individuals treating patients with perfectionistic tendencies. For example, given the increase in positive affect that occurs after engaging in perfectionistic behaviours, clinicians may wish to suggest other, less interfering ways to improve negative affect. It may also be important for clinicians to be able to distinguish between perfectionistic behaviours that may be interfering with their patients' daily lives, such as overpreparing, procrastinating, and quitting too soon, while placing less emphasis on other behaviours that may indeed be perfectionistic but are not negatively impacting the individual's day-to-day functioning. Overall, the findings of the present study provide a great deal of information about the nature of perfectionistic behaviours in naturalistic settings, and offer a good starting point for future studies examining behavioural manifestations of perfectionism.

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Footnotes

¹ Excessive reassurance seeking was the most frequent erroneously selected behaviour. Participants who incorrectly selected excessive reassurance seeking were recoded as repeating behaviour, excessive organizing, or avoiding delegating depending on the written description of the behaviour that they provided on the diary. Behaviours that were recorded as “Other” were sometimes better described as one of the proposed perfectionistic behaviours and were recoded accordingly. “Other” was typically recoded as persevering for too long, attempting to change other’s behaviour, procrastinating, or quitting too soon. Some participants who recorded their behaviour as both procrastinating and avoiding situations were corrected to remove the avoidance behaviour if it was indicated that they did actually perform the task that they had been putting off. Some additional behaviours that had been indicated in the written description but not selected in question 1 were recoded to be included. These additional behaviours were most commonly repeating behaviour, attempting to change other’s behaviour, and persevering for too long. The remaining changes to erroneous diary responding did not occur in any systematic way.

Table 1

Descriptive Statistics for Perfectionistic Behaviours

Variable	<i>M</i>	<i>SD</i>	Min	Max	Total	% of Total
Total number of behaviours	9.53	6.29	0	26 ^a	1,121	100.00%
1. Overpreparing	1.19	1.34	0	5	138	12.31%
2. Repeating behaviour	1.93	2.07	0	12	224	19.98%
3. Excessive reassurance seeking	0.84	0.95	0	4	98	8.74%
4. Excessive organizing	0.99	1.34	0	7	115	10.26%
5. Procrastinating	1.59	1.79	0	10	184	16.41%
6. Excessive persevering	0.82	1.30	0	6	95	8.47%
7. Quitting too soon	0.53	0.94	0	5	61	5.44%
8. Refusing to delegate	0.41	0.67	0	3	47	4.19%
9. Avoiding situations	0.60	0.89	0	4	70	6.24%
10. Attempting to change others' behaviour	0.74	1.07	0	7	86	7.67%
11. Other	0.03	0.21	0	2	3	0.27%

Note. ^aThree outliers were corrected due to extreme high values (raw values of outliers: 36-28). Outliers corrected using the technique of adding 1 to the next highest value for a data point that is not an outlier as per the recommendation by Field (2009).

Table 2

Descriptive Statistics for Contexts and Domains

Variable (<i>n</i> = 114)	<i>M</i>	<i>SD</i>	Min	Max	Total	% of Total
Total number of contexts	3.37	1.47	1	7	904	100.00%
1. While doing housework	0.91	1.22	0	5	105	11.62%
2. While at work or school	3.05	2.67	0	12	354	39.16%
3. While in a social situation	1.18	1.40	0	5	137	15.15%
4. While doing a hobby	0.50	1.03	0	7	58	6.42%
5. At home: Daily living	0.84	1.38	0	7	56	6.19%
6. At home: Working	0.97	1.39	0	6	97	10.73%
7. Other context	0.48	0.82	0	4	112	12.39%
Total number of domains	4.48	2.01	1	8	1,247	100.00%
1. Academic/work performance	3.76	2.89	0	12	436	34.96%
2. Social skills	1.20	1.38	0	5	139	11.15%
3. Personal cleanliness	0.78	1.20	0	6	90	7.22%
4. Neatness/organization	1.89	2.13	0	10	219	17.56%
5. Health	0.60	1.16	0	6	70	5.61%
6. Physical appearance	0.82	1.41	0	9	95	7.62%
7. Athletic ability	0.14	0.39	0	2	16	1.28%
8. Artistic ability/creativity	0.44	1.04	0	6	51	4.09%
9. Managing people's impressions of you	1.19	1.50	0	7	138	11.07%
10. Other domain	0.42	0.90	0	5	49	3.93%

Note. Two participants who completed Part 2 of the study reported that they did not engage in any perfectionistic behaviours. These participants are not included here.

Table 3

Descriptive Statistics for Additional Diary Data

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
Compliance	113	62.83%	26.57%	10%	100%
Interference	112	3.96	1.32	1.00	7.00
Urge to do behaviour	112	5.89	0.69	4.18 ^a	7.00
Predicted distress if behaviour not done	112	4.40	1.21	1.59 ^b	7.00
Prebehaviour affect	112	3.72	1.19	1.33	7.00
Postbehaviour affect	112	4.49	1.15	1.29	7.00
Beliefs about the behaviour	112	4.07	0.89	1.83	5.72
Likelihood of doing the behaviour again in the future	112	5.42	0.78	3.66 ^c	7.00

Note. Two participants who completed Part 2 of the study reported that they did not engage in any perfectionistic behaviours. These participants are not included here. Compliance was assessed as the percentage of perfectionistic behaviours that the participant was able to actually capture in the diaries. ^aFive outliers were corrected due to extreme low values (raw values of outliers: 2.00-3.50). ^bThree outliers were corrected due to extreme low values (raw values of outliers: 1.00-1.50). ^cOne outlier was corrected due to extreme low value (raw value of outlier: 2.00). Outliers corrected using the technique of adding 1 to the next highest value (or subtracting 1 from the next lowest value) for a data point that is not an outlier as per the recommendation by Field (2009).

Table 4

Correlation Matrix for Total Perfectionistic Behaviours and Perfectionism Measures

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Behaviours	-													
2. FMPS Total	.36***	-												
3. FMPS CM	.28**	.86***	-											
4. FMPS PS	.28**	.65***	.47***	-										
5. FMPS PE	.26**	.77***	.46***	.39***	-									
6. FMPS PC	.30**	.71***	.42***	.22*	.72***	-								
7. FMPS DA	.23*	.72***	.63***	.34***	.40***	.41***	-							
8. FMPS O	.21*	.10	.02	.21*	.07	.06	.05	-						
9. HMPS SO	.27**	.59***	.58***	.71***	.33***	.09	.38***	.19*	-					
10. HMPS OO	.18	.33***	.28**	.41***	.26**	.03	.22*	.07	.48***	-				
11. HMPS SP	.28**	.81***	.70***	.48***	.72***	.57***	.74***	-.06	.46***	.25**	-			
12. AP	.33***	.58***	.47***	.82***	.37***	.14	.35***	.52***	.83***	.69***	.40***	-		
13. MP	.34***	.96***	.80***	.47***	.82***	.78***	.71***	.04	.46***	.26**	.87***	.43***	-	
14. BDQ	.33***	.65***	.61***	.51***	.33***	.30**	.66***	.22*	.52***	.25**	.50***	.52***	.60***	-
15. PBT	.30**	.62***	.62***	.45***	.30**	.26**	.63***	.15	.50***	.30**	.48***	.49***	.57***	.80***

Note. FMPS = *Frost Multidimensional Perfectionism Scale*; CM = *Concern over Mistakes subscale*; PS = *Personal Standards subscale*; PE = *Parental Expectations subscale*; PC = *Parental Criticism subscale*; DA = *Doubts about Actions subscale*; O = *Organization subscale*; HMPS = *Hewitt & Flett Multidimensional Perfectionism Scale*; SO = *Self-Oriented Perfectionism subscale*; OO = *Other-Oriented Perfectionism subscale*; SP = *Socially Prescribed Perfectionism subscale*; AP = *Adaptive Perfectionism composite*; MP = *Maladaptive Perfectionism composite*; BDQ = *Behavioural Domains Questionnaire*; PBT = *Perfectionistic Behaviour Tendencies*.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

Multiple Regression for Predicting Frequency of Perfectionistic Behaviours

	<i>B</i>	<i>SE B</i>	β
Constant	5.56	0.93	
DASS-21 Stress	0.27	0.05	.43**
Adaptive Perfectionism	0.46	0.19	.21*
Excluded variables			
DASS-21 Depression			.01
DASS-21 Anxiety			-.19
FMPS Total			-.02
FMPS CM			-.10
FMPS PS			-.01
FMPS PE			.05
FMPS PC			.11
FMPS DA			-.14
FMPS O			.08
HMPS SO			-.05
HMPS OO			-.08
HMPS SP			.01
MP			-.01
BDQ			-.03
PBT			-.09

Note. DASS-21 = *Depression Anxiety Stress Scales 21-Item Version*; FMPS = *Frost Multidimensional Perfectionism Scale*; CM = *Concern over Mistakes subscale*; PS = *Personal Standards subscale*; PE = *Parental Expectations subscale*; PC = *Parental Criticism subscale*; DA = *Doubts about Actions subscale*; O = *Organization subscale*; HMPS = *Hewitt & Flett Multidimensional Perfectionism Scale*; SO = *Self-Oriented Perfectionism subscale*; OO = *Other-Oriented Perfectionism subscale*; SP = *Socially Prescribed Perfectionism subscale*; AP = *Adaptive Perfectionism composite*; MP = *Maladaptive Perfectionism composite*; BDQ = *Behavioural Domains Questionnaire*; PBT = *Perfectionistic Behaviour Tendencies*.

* $p < .05$, ** $p < .001$

Table 6

Multiple Regression for Predicting Frequency of Perfectionistic Behaviours (excluding anxiety, depression, and stress)

	<i>B</i>	<i>SE B</i>	β
Constant	-6.33	3.78	
FMPS Total Score	0.11	0.03	.34**
FMPS Organization	0.26	0.13	.18*
<hr/> Excluded variables <hr/>			
FMPS CM			-.08
FMPS PS			.04
FMPS PE			-.04
FMPS PC			.11
FMPS DA			-.05
HMPS SO			.06
HMPS OO			.05
HMPS SP			.06
AP			.09
MP			.03
BDQ			.13
PBT			.10

Note. FMPS = *Frost Multidimensional Perfectionism Scale*; CM = Concern over Mistakes subscale; PS = Personal Standards subscale; PE = Parental Expectations subscale; PC = Parental Criticism subscale; DA = Doubts about Actions subscale; O = Organization subscale; HMPS = *Hewitt & Flett Multidimensional Perfectionism Scale*; SO = Self-Oriented Perfectionism subscale; OO = Other-Oriented Perfectionism subscale; SP = Socially Prescribed Perfectionism subscale; AP = Adaptive Perfectionism composite; MP = Maladaptive Perfectionism composite; BDQ = *Behavioural Domains Questionnaire*; PBT = *Perfectionistic Behaviour Tendencies*.

* $p < .05$, ** $p < .001$

Table 7

Summary of Correlations between Frequency of Specific Behaviours and Perfectionism Measures

	Over-prepare	Repeat	Seek Reassurance	Organize	Procrastinate	Persevere	Quit too Soon	Refuse to Delegate	Avoid Situations	Change Others
FMPS Total	.28**	.22*	.28**	.20*	.04	.24*	.19*	.09	.19	.12
FMPS CM	.24*	.14	.26**	.16	.01	.17	.15	.05	.22*	.08
FMPS PS	.30**	.22*	.23*	.25**	-.03	.12	.07	.11	.06	.11
FMPS PE	.16	.17	.15	.12	.01	.25**	.16	.09	.08	.16
FMPS PC	.11	.21*	.20*	.12	.10	.25**	.26**	.11	.14	.03
FMPS DA	.22*	.11	.21*	.10	.15	.11	.07	-.03	.17	.04
FMPS O	.21*	.17	.19*	.31**	.07	-.08	-.05	.10	.01	.08
HMPS SO	.29**	.22*	.23*	.28**	-.01	.13	-.01	-.01	.04	.15
HMPS OO	.22*	.10	.18	.17	-.11	.16	-.03	.07	-.02	.12
HMPS SP	.18	.12	.17	.19*	.07	.20*	.20*	.06	.18	.15
AP	.36***	.25**	.29**	.36***	-.02	.12	-.01	.09	.03	.16
MP	.23*	.19*	.25**	.17	.08	.24**	.21*	.07	.20*	.12
BDQ	.29**	.20*	.31**	.27**	-.01	.08	.15	.15	.20*	.17
PBT	.23*	.14	.33***	.22*	.05	.04	.13	.12	.12	.18

Note. FMPS = *Frost Multidimensional Perfectionism Scale*; CM = *Concern over Mistakes subscale*; PS = *Personal Standards subscale*; PE = *Parental Expectations subscale*; PC = *Parental Criticism subscale*; DA = *Doubts about Actions subscale*; O = *Organization subscale*; HMPS = *Hewitt & Flett Multidimensional Perfectionism Scale*; SO = *Self-Oriented Perfectionism subscale*; OO = *Other-Oriented Perfectionism subscale*; SP = *Socially Prescribed Perfectionism subscale*; AP = *Adaptive Perfectionism composite*; MP = *Maladaptive Perfectionism composite*; BDQ = *Behavioural Domains Questionnaire*; PBT = *Perfectionistic Behaviour Tendencies*.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8

Adaptive and Maladaptive Perfectionism across Perfectionistic Behaviours

Behaviour	Adaptive Perfectionism (<i>r</i>)	Maladaptive Perfectionism (<i>r</i>)	<i>z</i>
Overpreparing	.36***	.23*	-1.36
Repeating behaviour	.25**	.19*	0.60
Excessive reassurance seeking	.29**	.25**	0.41
Excessive organizing	.36***	.17	1.98*
Procrastinating	-.02	.08	-0.98
Excessive persevering	.12	.24**	-1.20
Quitting too soon	-.01	.21*	-5.62***
Refusing to delegate	.09	.07	0.20
Avoiding situations	.03	.20*	-1.69
Attempting to change others' behaviour	.16	.12	0.40

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 9

Summary of Correlations between Frequency of Specific Behaviours and Specific Contexts

	Over-prepare	Repeat	Seek Reassurance	Organize	Procrastinate	Persevere too Long	Quit too Soon	Refuse to Delegate	Avoid Situations	Change Others
While doing housework	.30**	.19*	.24**	.34***	.24**	.12	.15	.39***	.22*	.26**
While at work or school	.32***	.58***	.38***	.45***	.40***	.12	.45***	.20*	.24**	.13
While in a social situation	.11	.26**	.45***	.24**	.19*	.19*	.24*	.30**	.37***	.39***
While doing a hobby	.11	.09	.00	.09	.15	.33***	.18*	.09	.03	.23
While at home: Daily living	.21*	.27**	.19*	.36***	.28**	.04	.06	.14	.07	.02
While at home: Working	.25**	.20*	.09	.14	.31**	.36***	.17	.09	.10	.03

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 10

Summary of Correlations between Frequency of Specific Behaviours and Specific Domains

	Over-prepare	Repeat	Seek Reassurance	Organize	Procrastinate	Persevere too Long	Quit too Soon	Refuse to Delegate	Avoid Situations	Change Others
Academic/work performance	.35***	.42***	.35***	.50***	.53***	.17	.47***	.18	.14	.18
Social skills	.23*	.25**	.40***	.27**	.06	.14	.13	.19*	.48***	.37***
Personal cleanliness	.24**	.23*	.14	.35***	.20*	.05	.04	.42***	.25**	.08
Neatness/organization	.48***	.31**	.27**	.73***	.34***	.21*	.14	.32**	.25**	.14
Health	.19*	.43***	.17	.22*	.43***	.34***	.34***	.36***	.02	.01
Physical appearance	.16	.57***	.23*	.13	.08	.44***	.36***	.23*	.37***	-.01
Athletic ability	.06	.07	.06	.07	-.09	.24*	.30**	.15	.06	.02
Artistic ability/creativity	.09	.19*	.12	.11	.17	.34***	.09	.23*	.31**	.09
Managing people's impressions of you	.43***	.26**	.30**	.40***	.11	.37***	.15	.12	.49***	.20*

* $p < .05$, ** $p < .01$, *** $p < .001$



Department of Psychology

NATURAL OBSERVATION OF PERSONALITY AND BEHAVIOUR

This is a two-part study about personality and behaviour. Part 1 involves a lab visit on the Ryerson University Campus (near Yonge and Dundas) where you will fill out questionnaires measuring various aspects of personality and psychological functioning.

Part 2 involves monitoring your behaviour and completing behaviour diary entries over the course of two weeks.

You will receive \$25 for your participation.

Please contact Hanna McCabe-Bennett at hmccabeb@psych.ryerson.ca if you are interested in participating!

This study is being conducted by Hanna McCabe-Bennett, a graduate student in psychology under the supervision of Dr. Martin Antony for her Master's thesis and for use in scholarly publications.

PERSONALITY AND BEHAVIOUR
STUDY
Hanna McCabe-Bennett
hmccabeb@psych.ryerson.ca

Appendix B: Perfectionistic Behaviour Tendencies

Please read each description of a perfectionistic behaviour. Then, in the space next to the description, circle the number that represents how much you typically do the behaviour in your regular, day-to-day life.

1. **Overpreparing** involves spending too much effort or time on a task to ensure that it goes perfectly. For example, (1) spending excessive amounts of time memorizing a presentation to reduce the chances of making mistakes; or (2) rehearsing voicemail messages before making a call to increase the chances of it going smoothly.

In general, I tend to **overprepare** to make sure things are perfect.

0	1	2	3	4
Not at all	Somewhat	Moderately	Mostly true	Completely
true	true	true		true

2. **Repeating of behaviours (e.g., checking, correcting)** involves checking things over more times or more carefully than necessary to avoid any mistakes. It can also involve doing something over and over again until it feels like it has been done perfectly, even if the consequences of a small mistake are not really that bad. For example, (1) frequently examining one's reflection in mirrors to make sure one still looks okay; or (2) rereading a brief e-mail to a friend many times to make sure that nothing has been spelled incorrectly. Other examples include (3) folding laundry 4-5 times until it is just right, with no creases or wrinkles; or (4) returning a new book to the store after discovering it has a small scratch on the cover.

In general, I tend to **repeat behaviours** to make sure things are perfect.

0	1	2	3	4
Not at all	Somewhat	Moderately	Mostly true	Completely
true	true	true		true

3. **Reassurance seeking** involves continually asking other people for feedback even when it won't give you any new information. For example, (1) repeatedly asking friends if one has said something stupid at a recent party; or (2) frequently asking one's boss if she or he is satisfied with one's work performance.

In general, I tend to **ask other people for reassurance** to make sure things are perfect.

0	1	2	3	4
Not at all	Somewhat	Moderately	Mostly true	Completely
true	true	true		true

4. **Organizing more than necessary** involves spending more time than most people would organizing, making lists, putting things in order, labelling, or making plans of how to complete tasks to make sure everything is perfect. For example, (1) taking an hour every morning to make a to-do list for the day and becoming upset if something gets missed or is done in the wrong order; or (2) keeping a careful inventory of every household item so that one always knows when an item is about to run out.

In general, I tend to **organize more than necessary** to make sure things are perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

5. **Procrastinating** involves delaying for a long time before you start working on something, and sometimes happens when people want to make sure everything is just right before they start working. For example, (1) delaying writing an email or letter for fear of making a mistake; or (2) putting off working on a project until very close to the deadline because of uncertainty about the best place to start.

In general, I tend to **procrastinate** because I want things to be perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

6. **Persevering for too long** means working on something for longer than you really need to in order to try to make it perfect. For example, (1) spending a few days working on a small project that could have been finished in a few hours, to ensure that it is done perfectly; or (2) getting stuck on a difficult question on an exam and wasting a lot of time trying to answer it, rather than skipping it and moving on to simpler questions.

In general, I tend to **persevere for too long** because I want things to be perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

7. **Quitting too soon** involves giving up on a task early, for fear of not performing well. For example, (1) quitting piano lessons after only a few weeks due to concern that one is not learning fast enough; or (2) giving up on a school assignment after

In general, I tend to **quit too soon** because I want things to be perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

struggling with one section.

8. **Delegating** involves trusting other people to help you complete a task by letting them take on some responsibility. Sometimes this is hard if you don't trust the other person to perform up to your standards. For example, (1) not letting one's roommate help with the dishes in case they are not cleaned perfectly; or (2) working overtime to finish an important project at work rather than asking qualified associates for help in case they make mistakes.

In general, I tend to **avoid delegating tasks to others** because I want things to be perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

9. Some people **avoid** certain situations if they feel like they won't be able to live up to some impossibly high standard. For example, (1) deciding not to take a challenging course for fear that one will not get the highest grade in the class; or (2) avoiding weighing oneself for fear of becoming very upset upon gaining even one pound.

In general, I tend to **avoid situations where I might not meet important standards** because I worry I won't be perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

10. **Attempting to change other people's behaviour** involves being overly critical of others, monitoring other people's actions, correcting other people's mistakes, or giving people suggestions for improvement when it's not your job to do so. For example, (1) correcting other people's spelling and grammar; or (2) being a "backseat driver" (e.g., always telling the driver when to turn, break, and accelerate, etc.).

In general, I tend to **try to change other people's behaviour** to try to make it perfect.

0	1	2	3	4
Not at all true	Somewhat true	Moderately true	Mostly true	Completely true

Appendix C: Perfectionistic Behaviour Diary

Participant ID _____ Date _____ Time of Recording _____ Time of Behaviour _____

1. What **type** of perfectionistic behaviour was it? See reverse for descriptions.

Check all that apply.

- Overpreparing
- Repeating behaviour (e.g., checking, correcting)
- Reassurance seeking
- Organizing more than necessary
- Procrastinating
- Persevering for too long
- Quitting too soon
- Avoiding delegating tasks to others
- Avoiding situations where I might not meet important standards
- Attempting to change other people's behaviour
- Other; specify _____

2. Please describe the behaviour(s) in more detail.

3. What was the **context** in which the behaviour(s) occurred?

- While doing housework
- While at work/school
- In a social situation
- While doing a hobby
- Other; specify _____

4. To which **domain** did the behaviour(s) apply?

- Academic/work performance
- Social skills
- Personal cleanliness
- Neatness/organization
- Health (e.g., eating, fitness)
- Physical appearance
- Athletic ability
- Artistic ability/creativity
- Managing what others think of you (e.g., your personality, abilities, accomplishments)
- Other; specify _____

5. How much did doing the behaviour(s) **interfere** with your day, plans, goals, etc. (1-7)?

Did not interfere at all 1 2 3 4 5 6 7 Interfered very much

6. How strong was the **urge** to do the behaviour(s) (1-7)?

Not at all strong 1 2 3 4 5 6 7 Extremely strong

7. How **distressed** would you have been if you had not done the behaviour(s)?

Not at all distressed 1 2 3 4 5 6 7 Extremely distressed

8. **Feeling:**

(a) Just **before** doing the behaviour(s), I was feeling (1-7):

Uncertain	1 2 3 4 5 6 7	Certain
Anxious	1 2 3 4 5 6 7	Relaxed
Sad	1 2 3 4 5 6 7	Happy
Dissatisfied	1 2 3 4 5 6 7	Satisfied
Insecure	1 2 3 4 5 6 7	Confident
Vulnerable	1 2 3 4 5 6 7	Safe
Frustrated	1 2 3 4 5 6 7	Content
Incompetent	1 2 3 4 5 6 7	Competent
Unlikeable	1 2 3 4 5 6 7	Likeable

(b) Just **after** doing the behaviour(s), I felt (1-7):

Uncertain	1 2 3 4 5 6 7	Certain
Anxious	1 2 3 4 5 6 7	Relaxed
Sad	1 2 3 4 5 6 7	Happy
Dissatisfied	1 2 3 4 5 6 7	Satisfied
Insecure	1 2 3 4 5 6 7	Confident
Vulnerable	1 2 3 4 5 6 7	Safe
Frustrated	1 2 3 4 5 6 7	Content
Incompetent	1 2 3 4 5 6 7	Competent
Unlikeable	1 2 3 4 5 6 7	Likeable

10. Please try to **describe why you did the behaviour(s)**. What motivated you? What was on your mind?

11. Now, I think doing the behaviour(s) (1-7):

Was helpful :	Not at all true	1 2 3 4 5 6 7	Very true
Made my performance better :	Not at all true	1 2 3 4 5 6 7	Very true
Made my performance worse :	Not at all true	1 2 3 4 5 6 7	Very true
Was necessary :	Not at all true	1 2 3 4 5 6 7	Very true
Was worthwhile :	Not at all true	1 2 3 4 5 6 7	Very true
Was excessive :	Not at all true	1 2 3 4 5 6 7	Very true

12. How likely are you to do the behaviour(s) again if you find yourself **in a similar situation in the future** (1-7)?

Will definitely not do it again 1 2 3 4 5 6 7 Will definitely do it again

DESCRIPTIONS OF PERFECTIONISTIC BEHAVIOURS

Overpreparing involves spending too much effort or time on a task to ensure that it goes perfectly. For example, (1) spending excessive amounts of time memorizing a presentation to reduce the chances of making mistakes; or (2) rehearsing voicemail messages before making a call to increase the chances of it going smoothly.

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Reassurance seeking involves continually asking other people for feedback even when it won't give you any new information. For example, (1) repeatedly asking friends if one has said something stupid at a recent party; or (2) frequently asking one's boss if she or he is satisfied with one's work performance.

Organizing more than necessary involves spending more time than most people would organizing, making lists, putting things in order, labelling, or making plans of how to complete tasks to make sure everything is perfect. For example, (1) taking an hour every morning to make a to-do list for the day and becoming upset if something gets missed or is done in the wrong order; or (2) keeping a careful inventory of every household item so that one always knows when an item is about to run out.

Procrastinating involves delaying for a long time before you start working on something, and sometimes happens when people want to make sure everything is just right before they start working. For example, (1) delaying writing an email or letter for fear of making a mistake; or (2) putting off

working on a project until very close to the deadline because of uncertainty about the best place to start.

Persevering for too long means working on something for longer than you really need to in order to try to make it perfect. For example, (1) spending a few days working on a small project that could have been finished in a few hours, to ensure that it is done perfectly; or (2) getting stuck on a difficult question on an exam and wasting a lot of time trying to answer it, rather than skipping it and moving on to simpler questions.

Quitting too soon involves giving up on a task early, for fear of not performing well. For example, (1) quitting piano lessons after only a few weeks due to concern that one is not learning fast enough; or (2) giving up on a school assignment after struggling with one section.

Delegating involves trusting other people to help you complete a task by letting them take on some responsibility. Sometimes this is hard if you don't trust the other person to perform up to your standards. For example, (1) not letting one's roommate help with the dishes in case they are not cleaned perfectly; or (2) working overtime to finish an important project at work rather than asking qualified associates for help in case they make mistakes.

Some people **avoid** certain situations if they feel like they won't be able to live up to some impossibly high standard. For example, (1) deciding not to take a challenging course for fear that one will not get the highest grade in the class; or (2) avoiding weighing oneself for fear of becoming very upset upon gaining even one pound.

Attempting to change other people's behaviour involves being overly critical of others, monitoring other people's actions, correcting other people's mistakes, or giving people suggestions for improvement when it's not your job to do so. For example, (1) correcting other people's spelling and grammar; or (2) being a "backseat driver" (e.g., always telling the driver when to turn, break, and accelerate, etc.