Self-critical perfectionism, experiential avoidance, and distress:

Cross-sectional, experience sampling, and longitudinal studies

Molly Moroz, Department of Psychology

McGill University

Montreal, Quebec

March 2019

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Doctorate of Philosophy

Table of Contents

Abstract.....v

Résumé.....vii

Acknowledgments.....x

Contribution of Authors.....xii

Statement of Original Contribution.....xiii

General Introduction.....1

Personal Standards and Self-Critical Perfectionism Dimensions.....2

Perfectionism Dimensions and Psychological Distress Outcomes.....4

Experiential Avoidance.....5

Perfectionism and Experiential Avoidance.....6

Distinguishing SC Perfectionism, Self-Esteem, and Neuroticism.....10

Gaps in Previous Research.....12

The Present Thesis.....15

Article 1.....18

Introduction.....20

Methods.....23

Results.....26

Discussion.....29

References.....33

Table….....37

Figures….....38

Bridge to Article 2.....40

Article 2.....41

Introduction.....43

Methods.....48

Results.....53

Discussion.....58

References.....63

Table.....71

Figures.....72

Bridge to Article 3.....75

Article 3.....76

Introduction.....78

Methods.....84

Results.....91

Discussion.....96

References.....102

Table.....114

Figures.....115

General Discussion.....117

SC Perfectionism Distinguished from PS Perfectionism.....117

SC Perfectionism as a Predictor of Experiential Avoidance.....118

SC Perfectionism Distinguished from Lower Self-Esteem and Neuroticism.....119

Experiential Avoidance as a Mediator between SC Perfectionism

and Distress.....120

Clinical Implications.....123

Limitations and Future Directions.....124

Conclusion.....126

General References.....128

Abstract

Self-critical (SC) perfectionism, the more maladaptive dimension of perfectionism, has been shown to be a cognitive-personality vulnerability factor associated with a variety of negative psychological outcomes, including depression and anxiety disorders. The goal of my dissertation was to examine the role of experiential avoidance as an important mediating mechanism in the relationship between SC perfectionism and psychological distress.

Article 1 examined the relations between SC perfectionism, self-esteem, experiential avoidance, and depressive symptoms in a sample of 210 community adults who completed self-report questionnaires measuring these constructs. Confirmatory factor analysis supported SC perfectionism, self-esteem, experiential avoidance, and depressive symptoms as distinct, but related, constructs. Structural equation modeling (SEM) results demonstrated that lower self-esteem mediated the relation between SC perfectionism and depressive symptoms. Furthermore, results showed that experiential avoidance independently mediated the relation between SC perfectionism and depressive symptoms, controlling for the effects of lower self-esteem.

Article 2 examined SC perfectionism, self-esteem, and the maintenance of daily experiential avoidance, negative affect, and sadness in a sample of 146 community adults. Participants completed self-report questionnaires assessing SC perfectionism and self-esteem, and then completed five daily reports assessing experiential avoidance, negative affect, and sadness over eight consecutive days. Similar to the findings demonstrated in Article 1, confirmatory factor analyses supported SC perfectionism, self-esteem, and aggregated daily experiential avoidance, negative affect, and sadness as distinct, but related, constructs. SEM results demonstrated that the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively, was partially mediated by lower self-esteem. Aggregated daily

experiential avoidance independently mediated the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively, controlling for the effects of lower self-esteem.

Article 3 examined the longitudinal relations among perfectionism dimensions, experiential avoidance, and depressive and anxious symptoms over a period of two years in a sample of 173 community adults. Article 3 included a three-wave cross-lagged longitudinal design where participants completed self-report questionnaires assessing two higher-order perfectionism dimensions (self- critical [SC], personal standards [PS]), experiential avoidance, and depressive and anxious symptoms at Time 1, Time 2 one year later, and Time 3 two years later, as well as Time 1 neuroticism. The cross-lagged path analyses demonstrated that SC perfectionism predicted increases in experiential avoidance from Time 1 to Time 2 and again from Time 2 to Time 3. Experiential avoidance predicted increases in both depressive and anxious symptoms from Time 1 to Time 2 and again from Time 2 to Time 3. Further, Time 2 experiential avoidance mediated the relation between Time 1 SC perfectionism and both depressive and anxious symptoms over two years, controlling for the effects of Time 1 neuroticism and prior symptom levels. Results did not find support for experiential avoidance as a mediator between PS perfectionism and depressive/anxious symptoms over two years.

In sum, the findings from the current thesis demonstrate that experiential avoidance serves as an important explanatory mediating variable in the relationship between SC perfectionism and various psychological distress outcomes over time. These findings lend support for the importance of targeting experiential avoidance in treatment with the aim of reducing vulnerability to depressive and anxious symptoms over the long-term in individuals with higher SC perfectionism.

Résumé

Le perfectionnisme autocritique, la dimension la plus inadapté du perfectionnisme, a été montré d'être un facteur de vulnérabilité de personnalité cognitive associé à une variété de résultats psychologiques négatifs, comprenant la dépression et les troubles anxieux. L'objectif de ma thèse était d'examiner le rôle de l'évitement expérientiel en tant qu'importante mécanisme de médiation dans la relation entre le perfectionnisme autocritique et la détresse psychologique.

L'Article 1 a examiné les relations entre le perfectionnisme autocritique, l'estime de soi, l'évitement expérientiel, et les symptômes dépressifs dans un échantillon de 210 adultes de la communauté ayant rempli des questionnaires d'auto-évaluation mesurant ces concepts. L'analyse factorielle confirmatoire a corroboré le perfectionnisme autocritique, l'estime de soi, l'évitement expérientiel, et les symptômes dépressifs en tant que concepts distinctes, mais liées. Les résultats de la modélisation par équation structurelle (SEM) ont démontré que la faible estime de soi a servi comme médiateur dans la relation entre le perfectionnisme autocritique et les symptômes dépressifs. De plus, les résultats ont montré que l'évitement expérientiel a indépendamment servi comme médiateur dans la relation entre le perfectionnisme autocritique et les symptômes dépressifs, en contrôlant pour les effets de l'estime de soi plus faible.

L'Article 2 a examiné le perfectionnisme autocritique, l'estime de soi, et le maintien de l'évitement expérientiel quotidien, de l'affect négatif quotidien, et de la tristesse quotidienne dans un échantillon de 146 adultes de la communauté. Les participants ont rempli des questionnaires d'auto-évaluation évaluant le perfectionnisme autocritique et l'estime de soi, et puis ensuite ont complété cinq rapports quotidiens évaluant l'évitement expérientiel, l'affect négatif et la tristesse pendant huit jours consécutifs. Similaires aux conclusions démontrées dans l'Article 1, l'analyse factorielle confirmatoire a corroboré le perfectionnisme autocritique, l'estime de soi, l'agrégé de

l'évitement expérientiel quotidien, et l'agrégé de l'affect négatif quotidien et de la tristesse quotidienne en tant que concepts distinctes, mais liées. Les résultats de la modélisation par équation structurelle (SEM) ont démontré que la relation entre le perfectionnisme autocritique et l'agrégé de l'affect négatif quotidien et de la tristesse quotidienne, respectivement, était partiellement médié par l'estime de soi plus bas. L'agrégé de l'évitement expérientiel quotidien a indépendamment servi comme médiateur dans la relation entre le perfectionnisme autocritique et l'agrégé de l'affect négatif quotidien et de la tristesse quotidienne, respectivement, en contrôlant pour les effets de l'estime de soi plus faible.

L'Article 3 a examiné les relations longitudinales parmi les dimensions du perfectionnisme, l'évitement expérientiel, et les symptômes dépressifs et anxieux pendant une période de deux ans dans un échantillon de 173 adultes de la communauté. L'Article 3 a compris un modèle longitudinal à retardement croisé qui comprends trois vagues où les participants ont rempli des questionnaires d'auto-évaluation évaluant les deux dimensions d'ordre supérieur du perfectionnisme (l'autocritique [SC], standards personnelles [PS]), l'évitement expérientiel, et les symptômes dépressifs et anxieux à Temps 1, à Temps 2 un an plus tard, et à Temps 3 deux ans plus tard, ainsi que le névrosisme à Temps 1. Les analyses de trajectoire à retardement croisées ont démontré que le perfectionnisme autocritique a prédit des augmentations dans l'évitement expérientiel du Temps 1 au Temps 2 et encore du Temps 2 au Temps 3. L'évitement expérientiel a prédit des augmentations dans les symptômes dépressifs et aussi dans les symptômes anxieux du Temps 1 au Temps 2 et encore du Temps 2 au Temps 3. Les résultats ont également montré que l'évitement expérientiel du Temps 2 a servi comme médiateur dans la relation entre le perfectionnisme autocritique du Temps 1 et les symptômes dépressifs et anxieux, respectivement, pendant une période de deux ans, en contrôlant pour effets du névrosisme du

Temps 1 et les niveaux de symptômes antérieurs. Les résultats n'ont pas permis de soutenir l'évitement expérientiel en tant que médiateur entre les standards personnels du perfectionnisme et les symptômes dépressifs/anxieux pendant une période de deux ans.

En résumé, les résultats de la thèse en cours démontrent que l'évitement expérientiel est une importante variable explicative de médiation dans la relation entre le perfectionnisme autocritique et divers résultats négatifs psychologiques au fil du temps. Ces résultats confirment l’importance de cibler l’évitement expérimental en traitement avec le but de réduire la vulnérabilité aux symptômes dépressifs et anxieux à long terme chez les individus avec le perfectionnisme autocritique plus élever.

Acknowledgements

There are many people I would like to thank for their ongoing support, guidance, and encouragement throughout the writing of this thesis. The completion of a doctoral thesis is no small feat, and the people in my life have made the process all the more enriching and rewarding.

First and foremost, my deepest gratitude and thanks go to my supervisor, Dr. David Dunkley. Thank you for your unwavering support, guidance, and feedback throughout my degree, and in helping me to develop into the person, clinician, and researcher that I have become. I cannot thank you enough for the time you have invested in my supervision. Your support, dedication, and compassion are undoubtedly what made this thesis both a possibility and a success. Thank you for everything.

My graduate school experience was enriched by the group of individuals and community of professors in the psychology department at McGill University. Special thanks to Chantale Bousquet and Giovanna LoCascio for their practical and emotional support over the years, and to David Zuroff and his lab for the ongoing support and inclusion. I would especially like to thank my lab mates, classmates, and friends who have been along for the journey – Tobey Mandel, Denise Ma, Shauna Solomon-Krakus, Claire Starrs, Amanda Thaw, Julie Prud'Homme, Alexandra Richard, Ryan Tobin, Kristin Horsley, Susanna Konsztowicz, Miriam Kirmayer, Claire Han, Valerie D'Amour-Horvat, Michael Bodhar, Nicola Hermanto, Samara Perez, Anna MacKinnon, Dorothee Schoemaker, Elena Ivanova, Michele Morningstar, Paige Ethridge, Danielle Rice, Paul Grunberg, Anne Holding, Adina Coroiu, Esther Yakobov, Zofia Czajkowska, Joanna Rosciszewska, Jinshia Ly, and Hilary Duncan.

Forever grateful for my long lasting, supportive, and loving friendships with Gabby Leon, Pamela Doran, Caro Loutfi, Kristin Horsley, and Jesse Renaud. A large latte's worth of

thanks to all of the amazing cafés in Montreal. A big thank you to my clinical mentors who have inspired and encouraged me over the years – Jennifer Russell, Tanya Bergevin, David Sinyor, Allen Surkis, with a very special thank you to Ilana Kronick for getting it and getting me.

I would also like to thank the Social Sciences and Humanities Research Council of Canada (SSHRC) for providing me with a doctoral fellowship that supported the completion of this thesis. My gratitude also goes to the participants who dedicated their time and energy to these research projects over the years.

Finally, but most importantly, I would like to thank my family. To my parents, Jill and Ronnie, for their unconditional love and support, for always being there for me, I love you. And to my brothers, Sonny, Mickey, and Harry, for being my most supportive and encouraging fans, and for all the laughs along the way.

Contribution of Authors

The present doctoral thesis is comprised of three manuscripts. The first article was published in *Personality and Individual Differences*, and was co-authored by myself and David Dunkley. The data for the first manuscript was collected by myself, Amanda Thaw, and Tobey Mandel. Article 2 is co-authored by myself and David Dunkley. The data for the second manuscript was collected by myself, Julie Prud'Homme, and Tatiana Sanchez. The third article was published in *Behavior Research and Therapy*, and was co-authored by myself and David Dunkley. The data for the third manuscript was collected by myself, Amanda Thaw, Shauna Solomon-Krakus, Alexandra Ghelerter, and Tara Magill.

For all three manuscripts, I conducted the literature review and developed the research questions with feedback from David Dunkley. I completed all of the data analyses and data interpretations, with input from David Dunkley. Lastly, I wrote and edited the complete manuscripts with editorial feedback from David Dunkley and the respective journal reviewers.

Statement of Original Contribution

The present doctoral thesis provides several original contributions to our understanding of the relationship between personality, experiential avoidance, and negative outcomes. Research has demonstrated an existing relationship between perfectionism and psychosocial problems. Recent research has highlighted experiential avoidance as a core mechanism and maladaptive emotion regulation strategy involved in the development and maintenance of psychological distress. However, research has yet to combine these two areas of study and to directly examine the relationship between self-critical perfectionism, experiential avoidance, and negative outcomes such as depressive and anxious symptoms. Furthermore, research has yet to test experiential avoidance as an important mediating mechanism that helps explain the consistent relationship between self-critical perfectionism and negative outcomes.

Each article in the current thesis provides unique and novel contributions to the literature. Article 1 tested experiential avoidance as a mediator between self-critical perfectionism and depressive symptoms, controlling for the effects of lower self-esteem, in a sample of community adults. Article 1 investigates whether experiential avoidance is a unique maladaptive characteristic associated with SC perfectionism that further differentiates SC perfectionism from related constructs such as lower self-esteem. These analyses help to identify whether experiential avoidance serves as an important mediator that could serve as a target in future interventions designed to reduce risk associated with self-critical perfectionism.

Article 2 provides an original contribution to the literature by assessing experiential avoidance and outcomes measures of negative affect and sadness in daily living using an experience sampling method of five daily reports over eight consecutive days. Article 2 provides a novel test of daily experiential avoidance as a mediator and maintenance factor in the

relationship between self-critical perfectionism and both daily negative affect and daily sadness, respectively, which has not yet been explored in previous research. Furthermore, the use of an experience sampling method provides a more rigorous test of experiential avoidance as a mediator between self-critical perfectionism and negative outcomes, and provides a more detailed assessment of experiential avoidance, negative affect, and sadness in daily living. Article 2 also further differentiates the effects of self-critical perfectionism from the effects of lower self-esteem on these outcomes.

Article 3 provides an original contribution to the literature by explicitly testing the theory that the use of experiential avoidance as an emotion regulation strategy leads to negative outcomes over the longer-term. Article 3 is the first to examine the relations between self-critical perfectionism, experiential avoidance, and depressive and anxious symptoms using a three-wave longitudinal design over two years. The cross-lagged analyses in Article 3 provided a novel examination of the longitudinal effects of self-critical perfectionism on experiential avoidance, and depressive and anxious symptoms, controlling for neuroticism as well as prior levels of each variable. Article 3 also demonstrated that experiential avoidance serves as a particularly important mechanism that could be targeted to reduce risk to negative outcomes for these individuals.

Thus, to summarize, the current thesis is the first to employ several novel methods to examine the relationship between self-critical perfectionism, experiential avoidance and a variety of distress outcomes, including the use of an experience sampling method and a repeated measures multi-year longitudinal design in samples of community adults. These provide important contributions to the literature and incorporate the role of experiential avoidance into our understanding of the relation to self-critical perfectionism and distress outcomes.

General Introduction

Perfectionism is an important cognitive-personality factor that has received growing attention in the empirical literature over the past three decades. Aspects of North American society and culture seem to value perfectionism and believe that it serves as a motivating characteristic that holds positive associations and is related to productivity and intelligence (Curran & Hill, 2017). Those that have experienced perfectionism understand that it is accompanied by thoughts that nothing is ever good enough, and feelings of paralysis and powerlessness. Research findings have revealed that perfectionism is associated with a variety of negative outcomes, including depression (Smith et al., 2016), anxiety (Antony, Purdon, Huta, & Swinson, 1998; Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018), eating disorders (Bardone-Cone et al., 2007), as well as other negative health outcomes (Molnar, Sadava, Flett, & Colautti, 2012). The goal of the current thesis is to examine the role of experiential avoidance in the consistent relationship between perfectionism and negative psychosocial outcomes over time. To explore this question, I will first describe the history and background of the perfectionism dimensions that will be presented in this thesis. Next, I will introduce experiential avoidance as a mechanism that I argue plays a fundamental role in the relationship between perfectionism and negative outcomes. Then, I will describe the importance of distinguishing perfectionism from self-esteem as well as other personality variables such as neuroticism. I will discuss previous gaps in the literature, and highlight the advantages of examining these relations using an experience sampling methodology as well as the importance of looking at these relations longitudinally. Finally, I will describe how the current thesis addresses these gaps and contributes to a better understanding of the relationship between perfectionism, experiential avoidance, and psychological distress over time.

Personal Standards and Self-Critical Perfectionism Dimensions

Historical descriptions of perfectionism first depicted it as a unidimensional construct that was comprised of dichotomous, all-or-nothing thinking, and evaluations of experiences as being complete successes or complete failures (Burns, 1980; Barrow & Moore, 1983). Burns (1980) described perfectionism as the unrelenting pursuit of unrealistic goals and standards for the self and performance, and self-worth that is contingent upon productivity and accomplishment. Hamacheck (1978) made a distinction between 'normal' and 'neurotic' perfectionists. He posited that normal perfectionists set reasonably high standards for themselves, focus on their strengths, and are able to derive satisfaction from their performance. Neurotic perfectionists were described as setting unattainable high standards, focusing on their deficiencies, and feeling that nothing was ever good enough.

Over the past three decades, researchers have described and conceptualized perfectionism as a multidimensional construct (see Flett & Hewitt, 2002). Three different but complimentary conceptualizations and measures of perfectionism have received significant attention in the perfectionism literature – the work of Frost and colleagues (Frost, Marten, Lahart, & Rosenblate, 1990), Hewitt and Flett (1991), and Slaney and colleagues (Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Frost and colleagues (1990) described several different facets of perfectionism, namely, concern over mistakes, doubts about actions, personal standards, parental expectations, parental criticism, and organization. They highlighted that an important distinction could be made between the setting and striving for high personal standards, which was not necessarily viewed as maladaptive in and of itself, and the concern over mistakes, which was viewed as being more maladaptive in nature (Frost et al., 1990). Hewitt and Flett (1991) differentiated the personal and social aspects of multidimensional perfectionism, which include the three

dimensions of self-oriented, other-oriented, and socially prescribed perfectionism. They demonstrated that socially prescribed perfectionism, in contrast to self-oriented and other-oriented perfectionism, was more consistently related to negative outcomes (Hewitt & Flett, 1991). Finally, Slaney and colleagues (2001) conceptualized perfectionism as encompassing adaptive components including setting high standards and order for the self, as well as maladaptive components including perceived discrepancy between one's standards and actual performance.

Factor analytic studies have integrated these conceptualizations and have consistently yielded two higher-order perfectionism dimensions that encompass the various theoretical frameworks (see Dunkley, Blankstein, Masheb, & Grilo, 2006; Stoeber & Otto, 2006). These two higher-order dimensions have been referred to as *personal standards (PS) perfectionism* and *self-critical (SC) perfectionism* (e.g., Dunkley, Zuroff, & Blankstein, 2003). PS perfectionism entails the setting of and striving for high standards and goals for oneself (Dunkley et al., 2003). The PS perfectionism dimension is comprised of the following measures: the personal standards subscale of the Frost et al. (1990) Multidimensional Perfectionism Scale (FMPS); the self-oriented perfectionism subscale of the Hewitt and Flett (1991) Multidimensional Perfectionism Scale (HMPS); and the high standards subscale of the Slaney et al. (2001) revised Almost Perfect Scale (APS-R). SC perfectionism involves constant and harsh self-scrutiny, critical evaluations of the self, and frequent concerns and worry about others' approval, criticism, and expectations (Dunkley et al., 2003). The SC perfectionism dimension is comprised of the following measures: the concern over mistakes subscale of the FMPS; the socially prescribed perfectionism subscale of the HMPS; the discrepancy subscale of the APS-R; and the self-criticism score of the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976).

Perfectionism Dimensions and Psychological Distress Outcomes

SC and PS perfectionism dimension can be distinguished by examining their differential relations to psychological distress outcomes. Previous research has shown that SC perfectionism is consistently associated with depressive and anxious symptoms (e.g., Dunkley et al., 2006; Gnilka, Ashby, & Noble, 2012; Stoeber & Otto, 2006). In contrast, PS perfectionism often exhibits weak or negligible associations with depressive and anxious symptoms (e.g., Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Dunkley et al., 2003; Enns & Cox, 1999). Recent meta-analytic reviews of longitudinal studies have demonstrated that SC perfectionism is a vulnerability factor for depressive symptoms (Smith et al., 2016), anxious symptoms (Smith et al., 2018), in addition to being associated with suicidality (Smith et al., 2017). These previous findings emphasize that SC perfectionism, in contrast to PS perfectionism, represents a more maladaptive dimension of perfectionism in relation to negative psychological outcomes, such as depressive and anxious symptoms (see Dunkley, Blankstein, et al., 2006). Furthermore, the SC perfectionism dimension has been found to have a negative impact on the therapeutic process in addition to treatment outcomes (see Blatt & Zuroff, 2005; Kannan & Levitt, 2013). The above findings lend credence to the importance of examining factors that explain or maintain the relation between SC perfectionism and negative outcomes in order to reduce vulnerability to these outcomes and to properly address obstacles in psychotherapy that might stem from perfectionistic characteristics. The purpose of my dissertation is to examine experiential avoidance as a central mechanism that helps explain the consistent relation between SC perfectionism and several negative psychological outcomes. Identifying important mechanisms in this relationship can also help inform treatment interventions for individuals with higher levels of SC perfectionism.

Experiential Avoidance

Experiential avoidance has received significant attention in the clinical and research literatures because of its potential importance in understanding and explaining psychopathology and maladaptive behavior patterns. Experiential avoidance has historical precedents in most therapeutic approaches, including psychodynamic, experiential, behavioral, and cognitive therapies, all of which aim to reduce this process in some way (see Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). For instance, Freud described the purpose of psychoanalysis as bringing the repressed and avoided private painful experiences into conscious awareness (Freud, 1920). Client-centered therapy focuses on cultivating an openness to inner experience and becoming aware of things as they are as central goals in treatment (Rogers, 1961). Similarly, Gestalt/experiential therapies believe that the core of psychopathology lies in the avoidance of painful feelings and fear of unwanted emotion (Perls, Hefferline, & Goodman, 1951). Modern cognitive therapies as well as rational-emotive behavior therapy emphasize appraisals and interpretations of events as mechanisms of dysfunction, and orient individuals towards unconditional self-acceptance as a goal (see Ellis & Robb, 1994). Experiential avoidance has become a central theme and target of change of modern behavioral or 'third-wave' cognitive behavior therapies such as dialectical behavior therapy (DBT; Linehan, 1993) and acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999). Importantly, the concept of experiential avoidance has marked a significant shift in understanding and conceptualizing psychopathology by assessing and addressing an individual's behavioral or cognitive responses to distress (i.e., avoidance, escape) rather than focusing on the content of the distress (i.e., cognitive distortions, unwanted feelings) (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

Experiential avoidance is conceptualized as one of the core pathological sub-processes of the broader construct of psychological inflexibility, which is described as the inability to adapt to challenging situations and to modify one's perspective and behavior in response to the changing demands of the environment (Hayes et al., 2006). Similarly, but more specifically, experiential avoidance is defined as an unwillingness to remain in contact with distressing private experiences (e.g., emotions, thoughts, memories, bodily sensations), and taking steps to alter the form or frequency of these experiences and situations that create them, even when doing so creates harm in the long run (Hayes et al., 1996). On the other hand, promoting and cultivating psychological flexibility is seen as a main goal in ACT and is demonstrated through a willingness to experience unwanted private events in order to persist in goal directed behaviors based on one's personal values (Hayes et al., 2006).

Experiential avoidance is thought to be important to the development and maintenance of psychopathology, and has been linked with a wide range of difficulties including depression, anxiety, and externalizing disorders (Hayes et al., 1999; Chawla & Ostafin, 2007). There are many examples of maladaptive avoidance strategies that share a common function of attempting to alter or avoid distress in the short run, including substance abuse, emotional distancing, isolation, self-harm, compulsive rituals, binging and purging, and suicide. According to Hayes and colleagues (1996), experiential avoidance includes both avoidance and escape in all of their forms, as long as they serve the function of changing the form and frequency of aversive private experiences.

Perfectionism and Experiential Avoidance

Experiential avoidance is one mechanism that I argue helps explain the vulnerability of individuals with higher SC perfectionism to negative outcomes. It has been described as a

generalized vulnerability factor and a fundamental aspect of mental health that is related to several of the negative outcomes associated with SC perfectionism, including depressive symptoms, anxiety, and general psychological distress (Kashdan, Barrios, Forsyth, & Steger, 2006; Kashdan & Rottenberg, 2010). Individuals with higher SC perfectionism are thought to develop dysfunctional self-worth contingencies in childhood, from environments of disapproval, inconsistent approval, and/or conditional approval based on unreasonably high parental expectations, in combination with a harsh and punitive parenting style (e.g., Blatt, 1995; Hamachek, 1978; Missildine, 1963; Flett, Hewitt, Oliver, & Macdonald, 2002). These types of childhood environments tend to foster doubt and uncertainty that any effort is ever good enough, and a sense of self-worth that is contingent on performance (e.g., Blatt & Homann, 1992; Moore & Barrow, 1986; Rogers, 1951). These contingencies eventually give rise to the harsh and critical self-evaluations that are characteristic of SC perfectionism, and lead individuals to become preoccupied with their deficiencies (Dunkley, Berg, & Zuroff, 2012). More specifically, individuals with greater SC perfectionism become preoccupied with attaining perfection and demonstrate chronic concerns about personal failure, loss of control, and perceived criticism. This then results in perpetual dissatisfaction, and appraisals of the self and one's performance as always falling short of perfectionistic standards and expectations. When perceived failures are attributed internally, SC perfectionists will experience very painful states of self-awareness that are accompanied by negative feelings (Heatherton & Baumeister, 1991; Santanello & Gardner, 2007). Consequently, individuals with higher SC perfectionism may demonstrate desires to avoid or escape from both negative self-awareness as well as the accompanied negative affect.

Several previous studies have demonstrated that individuals with higher SC perfectionism employ avoidance as a coping strategy (Dunkley et al., 2000, 2003, 2006, 2014; Flett,

Blankstein, Hewitt, & Koledin, 1992; O'Connor & O'Connor, 2003; Slade & Owens, 1998). Most of the research linking maladaptive perfectionism and avoidance has focused on external forms of avoidance, such as behavioural avoidance, procrastination, and avoidant coping in the face of stress. There is some evidence to support the theory that worry and rumination serve as internal avoidance strategies (e.g., Borkovec, Alcaine, & Behar, 2004), and that these strategies might also be associated with SC perfectionism (Di Schiena, Luminet, Philippot, & Douilliez, 2012; Stober & Joormann, 2001). Experiential avoidance, which is a general tendency to avoid unwanted internal experiences, represents a broader construct that encompasses both internal and external forms of avoidance (Hayes et al., 2004). More specifically, experiential avoidance is reflected by both behavioural avoidance and distress aversion, and includes any behavior or attempt to change the form or frequency of uncomfortable internal experiences and/or the situations that create them (Hayes et al., 1996, 1999, 2004). Therefore, experiential avoidance serves as an important mechanism and potential mediator that could further our understanding of the relation between SC perfectionism and negative outcomes.

A main reason for investigating experiential avoidance in this relation is that individuals, including those with higher SC perfectionism, often try to control their thoughts and feelings (Hayes et al., 1996, 1999). Although avoidance of negative experiences is a natural desire, researchers have found that avoidance is often ineffective and can create long-term difficulties and/or psychopathologies (Gamez, Chmielewski, Kotov, Ruggero, & Watson, 2011). For instance, repeated efforts to avoid aversive thoughts or feelings often paradoxically increase the thought or feeling being avoided (Gold & Wegner, 1995). This is also supported by several experimental studies of thought suppression (Roemer & Borkovec, 1994; Wegner, Schneider, Carter, & White, 1987), emotional suppression (Gross & Levenson, 1997), and pain

suppression (Cioffi & Holloway, 1993). Thus, avoidance and control strategies may not be effective in reducing distress. Nonetheless, because avoidance strategies often produce immediate, yet brief, reductions in internal distress, individuals might continue to engage in experiential avoidance without recognizing the detrimental longer-term impact of their avoidance strategies (Hayes et al., 1996, 2004).

Furthermore, there are situations that require the experience of unpleasant emotions (e.g., grief), and avoidance of such emotions can lead to maladaptive behaviors such as substance abuse (Hayes et al., 1999). Experiencing distress might be a necessary aspect of change and growth, and the avoidance of distress might prevent individuals from making positive, values-consistent changes in their lives. The importance of examining experiential avoidance is also highlighted by the use of exposure-based therapeutic techniques, including interoceptive or internal exposure, in the treatment of a variety of clinical populations (see Barlow, 1988; Barlow, Allen, & Choate, 2004; Hayes et al., 1999). Additionally, Barlow and colleagues (2004) describe the prevention and reduction of experiential avoidance as an essential element in the unified treatment of mood and anxiety disorders.

There are several studies that have examined various forms of avoidance as mediators between SC perfectionism and negative outcomes. Dunkley and colleagues (2003; 2016) have examined avoidant coping and found that it mediated the relation between SC perfectionism and negative affect. Others have found evidence for the mediating role of procrastination in the relation between SC perfectionism and distress outcomes (see Sirois, Molnar, & Hirsch, 2017). Santanello and Gardner (2007) found support for experiential avoidance as a mediator in the relation between maladaptive perfectionism and worry. Taken together, it is important to assess

and examine experiential avoidance as it may contribute to the development and/or maintenance of psychopathology associated with SC perfectionism.

Distinguishing SC Perfectionism, Self-Esteem, and Neuroticism

There is a growing need to distinguish dimensions of perfectionism from other personality variables, including higher order dimensions such as neuroticism, as well as related constructs like lower self-esteem (see Zuroff, Mongrain, & Santor, 2004). Thus, when examining mechanisms that contribute to our understanding of the relation between SC perfectionism and psychological distress, it is important to assess and control for these related personality variables in order to further strengthen our understanding of the effects of SC perfectionism.

Self-esteem represents a global appraisal of the self, where lower self-esteem is indicative of a negative view of the self (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Previous research and clinical perspectives have discussed the links between SC perfectionism and lower self-esteem in relation to psychological distress and well-being (e.g., Adler, 1956; Blatt, 1995; Hamachek, 1978; Hollender, 1965; Horney, 1950; Missildine, 1963). Horney (1950) suggested that self-critical evaluations maintain the perceived discrepancy between the ideal and actual self, resulting in low self-esteem for individuals with greater perfectionism. On the other hand, Adler (1956) theorized that low self-esteem and feelings of inferiority motivate individuals to strive for perfection. Several studies using structural equation modeling (SEM) have found support for lower self-esteem as a partial mediator in the relation between SC perfectionism and negative outcomes (Blankstein, Dunkley, & Wilson, 2008; Rice, Ashby, & Slaney, 1998; Dunkley & Grilo, 2007). These findings suggest that there are elements of SC perfectionism that exhibit incremental relations with distress beyond self-esteem, and that further research is needed to identify these characteristics. The current thesis investigates whether experiential avoidance

might be used to regulate feelings of low self-esteem in individuals with higher SC perfectionism.

Neuroticism is another personality dimension that has been linked with perfectionism. Neuroticism is a higher order personality trait that is defined as the dispositional tendency to experience negative emotional states (Costa & McCrae, 1992). Theoretical writings have described SC perfectionism as a specific neurotic style that centers on issues of self-control and self-worth (e.g., Blatt, 1995; Hamachek, 1978). Neuroticism has been shown to robustly predict a variety of negative psychosocial outcomes, including depressive symptoms (e.g., Békés, Dunkley, et al., 2015; Graham, Sherry, Stewart, Sherry, McGrath, Fossum, & Allen, 2010). Barlow's unified treatment for emotional disorders (see Barlow, Allen, & Choate, 2004) emphasizes neuroticism as a central target to reduce distress and vulnerability. Given that neuroticism shares substantial variance with SC perfectionism as well as with depressive symptoms, there is a need to examine whether lower-order personality traits such as SC perfectionism predict depressive symptoms and other negative outcomes beyond higher-order vulnerability factors such as neuroticism (Coyne & Whiffen, 1995; Enns & Cox, 1997; Enns, Cox, & Clara, 2005; Smith et al., 2016; Zuroff, Mongrain, & Santor, 2004).

Furthermore, there is a need to distinguish neuroticism from measures of experiential avoidance as these constructs demonstrate associations with one another (e.g., Latzman & Masuda, 2013). Conceptually, experiential avoidance is distinct from neuroticism and negative emotionality as it represents an individual's response or relationship to distress rather than their perception or experience of distress (Hayes et al., 1999). To illustrate, an individual could exhibit improved functioning by reducing experiential avoidance, without a reduction in their level of negative emotions. Recent research has called for the investigation of the discriminant validity of

measures of experiential avoidance from neuroticism and measures of distress (Rochefort, Baldwin, & Chmielewski, 2018; Wolgast, 2014). This dissertation addresses the need to further distinguish SC perfectionism from neuroticism and lower self-esteem in relation to experiential avoidance.

Gaps in Previous Research

The current perfectionism literature has recognized important links between maladaptive dimensions of perfectionism, including self-critical perfectionism, and various negative psychological outcomes. The current literature has also identified mediating factors, such as avoidant coping (see Dunkley et al., 2016), that help explain the relation between maladaptive perfectionism and negative outcomes. However, there are several gaps in the literature that have limited our understanding of these links, including a scarcity of research examining experiential avoidance as a mediator in the relation between SC perfectionism and negative outcomes. As described above, experiential avoidance may play an important role in explaining the occurrence and maintenance of the negative outcomes associated with SC perfectionism, including higher negative affect, and depressive and anxious symptoms. One previous study examined experiential avoidance as a mediator between maladaptive perfectionism and worry (Santanello & Gardner, 2007), although there are important limitations in this study. Firstly, the measure of experiential avoidance used in this study, the AAQ-I, has demonstrated poor reliability and discriminant validity. Thus, there remains a need to examine experiential avoidance in relation to SC perfectionism using subsequent versions of questionnaires that more accurately capture the construct of experiential avoidance (e.g., Bond et al., 2011; Gamez et al., 2011). For instance, examining these relations using the revised version of Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011), which demonstrates better psychometric properties and appropriate

discriminant validity. It is also of interest to examine experiential avoidance using other well-validated measures including the Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez et al., 2011). The current thesis addresses these limitations by measuring experiential avoidance using these different questionnaires.

Another limitation of the Santanello and Gardner (2007) study involves the use of one specific questionnaire in the measurement of maladaptive perfectionism, namely four subscales from the Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990). There remains a need to include multiple indicators derived from various theoretical and empirical perspectives to obtain a more comprehensive and integrated assessment of the different aspects of the broader SC and PS perfectionism dimensions than would be obtained by using individual measures (e.g., Dunkley et al., 2003). Lastly, the Santanello and Gardner (2007) study as well as other previous studies that have assessed SC perfectionism, experiential avoidance, and negative outcomes have largely been cross-sectional in nature. Research that examines these relations over a longer period of time can help clarify the stability or maintenance of experiential avoidance in individuals with greater SC perfectionism. While personality is considered to be quite stable (McCrae & Costa, 2008), there is limited research about the stability and maintenance of experiential avoidance, and its longer-term impact on negative outcomes and symptoms. Furthermore, experiential avoidance as well as other control/avoidance strategies have long been theorized to produce short-term reductions in distress with accompanied longer-term negative consequences (e.g., Roth & Cohen, 1986). To date, there is no research examining experiential avoidance longitudinally in relation to perfectionism and negative outcomes. Therefore, it is important to examine these relations

longitudinally to address this gap in the current literature and to broaden our understanding of factors that confer risk for individuals with greater SC perfectionism.

Specifically, there remain gaps in our understanding of the relations between perfectionism, mediating mechanisms such as experiential avoidance, and negative outcomes, including a lack of longitudinal research that comprises repeated measures to be able to test these questions. For example, the use of one-occasion, retrospective summary assessments of mediators and outcomes represents a limitation of the current perfectionism literature. Research has demonstrated that retrospective questionnaires are more susceptible to memory distortions and recall biases (Moskowitz, 1986). Therefore, the use of aggregated repeated situational reports is needed and can provide more accurate and detailed information about an individual's experience (Stone & Shiffman, 2002). It has been argued that the aggregation of numerous within-day reports, using an experience sampling method (ESM), allows for the assessment of trait-like tendencies over time in a more ecologically valid way (Shiffman, Stone, & Hufford, 2008).

Further, several studies conceptualize and have found support for SC perfectionism as a vulnerability factor that confers risk to depressive symptoms (e.g., Cox, Clara, & Enns, 2009; Chang & Rand, 2000; Dunkley, Sanislow, Grilo, & McGlashan, 2009; Hawley, Ho, Zuroff, & Blatt, 2006; Hewitt, Flett, & Ediger, 1996; Zuroff, Mongrain, & Santor, 2004). Yet, there remains the possibility of other models explaining the relation between SC perfectionism and depressive symptoms, including complication/scar and reciprocal relations models. The complication or scar model alleges that depressive symptoms are a precursor and contributor to changes in personality traits, (Bagby et al., 2008), whereas the reciprocal relations model posits that personality traits and depressive symptoms co-occur, and that changes in personality traits

contribute to changes in depressive symptoms over time and vice versa (e.g., McGrath et al., 2012). It is important to address this gap in the perfectionism literature by using multiple waves of data and testing cross-lagged effects over time, which allows for the examination of possible reciprocal relations, while also permitting stronger causal inferences, as it takes into account temporal precedence and competing explanations (Burkholder & Harlow, 2003).

The Present Thesis

In the current thesis, I aim to address these gaps in novel ways in order to increase our understanding of the mechanisms that contribute to the consistent relation between SC perfectionism and negative outcomes. The three articles in this thesis examine experiential avoidance in various ways as a mediator in the relationship between SC perfectionism and depressive symptoms and anxious symptoms, as well as daily negative affect and sadness in samples of community adults. Articles 1 and 2 include self-esteem in order to further distinguish SC perfectionism from low self-esteem, and to examine their relations to experiential avoidance and depressive symptoms. Whereas article 1 uses a cross-sectional design with one-occasion measures, article 2 employs an experience sampling method (ESM) where experiential avoidance, negative affect, and sadness are measured five times per day for eight consecutive days. Finally, article 3 examines the cross-lagged relations among SC perfectionism, experiential avoidance, and depressive and anxious symptoms, each measured at three separate time points over a two-year period, controlling for baseline neuroticism.

Article 1 investigates the links between SC perfectionism, self-esteem, experiential avoidance, and depressive symptoms in a sample of community adults. This research examines whether SC perfectionism and lower self-esteem can be differentiated in relation to experiential avoidance and depressive symptoms by conducting a confirmatory factor analysis. Article 1 also

examines lower self-esteem and experiential avoidance as mediators in the relation between SC perfectionism and depressive symptoms. Further, article 1 also aims to investigate whether experiential avoidance is used to regulate feelings of low self-esteem or is more uniquely associated with the characteristics of SC perfectionism.

Article 2 aims to replicate and extend previous theory and research by examining the links between SC perfectionism, self-esteem, and the maintenance of daily experiential avoidance, negative affect, and sadness. More specifically, article 2 uses an experience sampling method (ESM) where community adults were asked to complete five within-day reports assessing experiential avoidance, negative affect, and sadness over eight consecutive days. Article 2 examines aggregated daily experiential avoidance as a mediator between SC perfectionism and both aggregated daily negative affect and aggregated daily sadness, respectively, controlling for the effects of low self-esteem. Article 2 also investigates whether the vulnerability associated with SC perfectionism and experiential avoidance is differentially related to broad (i.e., negative affect) versus specific (i.e., sadness) negative outcomes.

Article 3 aims to broaden and expand on previous findings by investigating the longitudinal relations among SC perfectionism, neuroticism, experiential avoidance, and depressive and anxious symptoms in a sample of community adults. Specifically, three waves of data were collected over a two-year period to examine the cross-lagged effects of SC perfectionism, experiential avoidance, and depressive and anxious symptoms, controlling for neuroticism. A multi-wave longitudinal design in combination with a cross-lagged data analysis allowed for stronger causal inferences and the possibility of reciprocal relations in the examination of experiential avoidance as a mediator between SC perfectionism and depressive and anxious symptoms (Burkholder & Harlow, 2003). Article 3 addresses questions about the

stability of these constructs and the longer-term effects of SC perfectionism and experiential avoidance on depressive and anxious symptoms.

Taken together, the present thesis addresses important questions and gaps in the perfectionism literature by examining experiential avoidance as a mediator in the relation between SC perfectionism and negative outcomes. The present thesis helps to elucidate the relationship between SC perfectionism and experiential avoidance, controlling for related constructs such as lower self-esteem and neuroticism, in order to further strengthen our understanding of the vulnerability associated with SC perfectionism. This thesis allows for a better understanding of the maintenance, stability, and longer-term effects of SC perfectionism and experiential avoidance on various negative psychological outcomes, which can inform and improve treatment interventions for vulnerable individuals.

Article 1

Self-critical perfectionism and depressive symptoms: Low self-esteem and experiential avoidance as mediators

Molly Moroz and David M. Dunkley

Lady Davis Institute–Jewish General Hospital and McGill University

Moroz, M., & Dunkley, D. M. (2015). Self-critical perfectionism and depressive symptoms: Low self-esteem and experiential avoidance as mediators. *Personality and Individual Differences*, *87*, 174-179.

Abstract

This study of community adults ($N = 210$) aimed to gain a better understanding of the links among self-critical (SC) perfectionism, self-esteem, experiential avoidance, and depressive symptoms. Participants completed self-report questionnaires assessing perfectionism dimensions, self-esteem, experiential avoidance, and depressive symptoms. Confirmatory factor analysis supported SC perfectionism, self-esteem, experiential avoidance, and depressive symptoms as distinct, but related, constructs. Structural equation modeling (SEM) demonstrated that the relation between SC perfectionism and depressive symptoms was mediated by lower self-esteem. SEM also showed that experiential avoidance independently mediated the relation between SC perfectionism and depressive symptoms, controlling for the effects of lower self-esteem. These results distinguish SC perfectionism from lower self-esteem by demonstrating that individuals with higher SC perfectionism have a unique propensity towards experiential avoidance, which, in turn, incrementally explains why they experience higher levels of depressive symptoms.

Keywords: self-criticism, perfectionism, self-esteem, experiential avoidance, depression

Self-Critical Perfectionism and Depressive Symptoms: Low Self-Esteem and Experiential Avoidance as Mediators

In recent decades, there has been a focus on exploring cognitive-personality factors such as perfectionism that are thought to increase vulnerability to depression (see Egan, Wade, & Shafran, 2011). Although perfectionism has been conceptualized and measured in different ways, factor analytic studies have consistently yielded two higher-order dimensions of perfectionism, which we refer to as personal standards (PS) perfectionism and self-critical (SC) perfectionism, that encompass the diverse conceptualizations of this construct (see Dunkley, Blankstein, Masheb, & Grilo, 2006; Stoeber & Otto, 2006). PS involves setting and striving for excessively high goals and standards for the self. SC perfectionism involves constant and harsh self-scrutiny and critical self-evaluation of one's own behavior, and continuous worry about others' approval, criticism, and rejection (see Dunkley, Zuroff, & Blankstein, 2003). While PS is often unrelated to depressive symptoms, SC perfectionism consistently exhibits a strong relation with depressive symptoms (e.g., Dunkley, Blankstein, et al, 2006; Stoeber & Otto, 2006). This strong consistent relation between SC perfectionism and depressive symptoms has inspired several studies to investigate possible mediating mechanisms. The present study examined lower self-esteem and experiential avoidance as mediators of this relation.

Lower self-esteem, which represents a global negative appraisal of the self (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), has received attention as a potential mediator in the relation between SC perfectionism and depressive symptoms. Previous clinical perspectives have linked SC perfectionism and self-esteem (Hamachek, 1978; Horney, 1950). It has been posited that self-critical evaluations of the self maintain the perceived gap between an individual's ideal self and their actual self, resulting in experiences of low self-esteem. Previous studies using

structural equation modeling (SEM) found support for lower self-esteem as an important mediator that partially explained the relation between SC perfectionism and depressive symptoms in college student populations (Blankstein, Dunkley, & Wilson, 2008; Rice, Ashby, & Slaney, 1998) and in a sample of binge eating disorder patients (Dunkley & Grilo, 2007). As these previous studies supported self-esteem only as a partial mediator in the relation between SC perfectionism and depressive symptoms, research is needed to establish which other maladaptive characteristics of SC perfectionism explain its unique association with depressive symptoms.

SC perfectionism differs conceptually from low self-esteem as it involves a critical and harsh self-evaluation relating to feelings of failure to live up to one's own or others' expectations (Dunkley & Grilo, 2007). It has been posited that these unique characteristics of individuals with higher SC perfectionism may serve as motivation to avoid feelings, thoughts, or situations of failure and disappointment (Santanello & Gardner, 2007). Accordingly, experiential avoidance is one potential mediating mechanism that might further explain the relation between SC perfectionism and depressive symptoms. Experiential avoidance can be broadly defined as an individuals' unwillingness to remain in contact with uncomfortable internal experiences, such as distressing thoughts, feelings, and sensations, and involves attempts to avoid these experiences and situations that produce them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). It has been suggested that individuals, particularly those with higher SC perfectionism, may engage in experiential avoidance in order to regulate feelings of low self-esteem (Santanello & Gardner, 2007). In addition, the desire to escape from unpleasant emotional states that are associated with discrepant and self-critical views of the self may independently contribute to a greater use of experiential avoidance to escape from negative self-awareness (Heatherton & Baumeister, 1991).

Individuals with higher SC perfectionism are thought to adopt a helplessness orientation when faced with obstacles, which contributes to their tendency to engage in avoidant types of coping (see Dunkley et al., 2003).

Research has shown experiential avoidance to be related to various negative outcomes, including depression (e.g., Gamez, Chmielewski, Kotov, Ruggero, & Watson, 2011). Findings suggest that emotional avoiders have a greater tendency toward experiences of depressive symptoms, particularly when they engage in thought suppression (Wegner & Zanakos, 1994). In fact, attempts to control or avoid internal experiences may actually increase these unwanted feelings and thoughts.

Santanello and Gardner (2007) examined experiential avoidance, which reflects a broader dispositional conceptualization of avoidance as compared with other constructs that focus on one specific aspect of avoidance (e.g. avoidant coping). They found that experiential avoidance partially mediated the relationship between maladaptive perfectionism and worry. A number of other studies have shown that avoidant coping mediates the relation between SC perfectionism and depressive symptomatology (e.g., Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Dunkley et al., 2003; Noble, Ashby, & Gnilka, 2014). Therefore, there is clear evidence that individuals with higher SC perfectionism have a tendency towards avoidance, which can augment and maintain their negative affect and depressive symptoms.

The main goal of the present study was to gain a better understanding of the links among SC perfectionism, self-esteem, experiential avoidance, and depressive symptoms in a sample of community adults. Figure 1 presents the hypothesized mediational model of the relation between SC perfectionism and depressive symptoms as follows: (1) SC perfectionism would be related to both lower self-esteem and experiential avoidance; (2) lower self-esteem would be related to

experiential avoidance; and (3) lower self-esteem and experiential avoidance would be related to depressive symptoms. We expected that both lower self-esteem and experiential avoidance would mediate the relation between SC perfectionism and depressive symptoms. Finally, it was hypothesized that experiential avoidance would emerge as a unique characteristic associated with SC perfectionism that further explains why SC perfectionism is consistently related to depressive symptoms over and above lower self-esteem.

Method

Participants

Participants included 210 English- and French-speaking community adults holding paid employment, who were recruited through newspaper, bulletin, and internet advertisements in order to obtain a representative community sample from a bilingual North American city. Of the 210 participants, 125 participants (40 male, 85 female) completed the English version of the questionnaires, whereas 85 participants (34 male, 51 female) completed the French version of the questionnaires. The results of a *t* test revealed no significant difference in average age between English-speaking ($M = 39.02$, $SD = 14.91$) and French-speaking ($M = 40.65$, $SD = 12.60$) participants. Similar proportions of English-speaking (79%) and French-speaking (80%) participants had graduated from college or university. A larger proportion of French-speaking participants (85%) than English-speaking participants (58%) were of European descent. On the other hand, larger proportions of English-speaking participants were of Asian (14%), East Indian (6%), and Aboriginal (2%) descent, whereas there were not any French-speaking participants of these ethnicities. There were similarly small proportions of English- and French-speaking participants of South American (7%, 6%), African (4%, 5%), Middle Eastern (5%, 2%), multi-ethnic (3%, 1%), and other (1%, 1%) descent.

Procedure

Participants completed a package of questionnaires during a 1.5 to 2-hour lab session assessing measures of perfectionism, self-esteem, experiential avoidance, and depressive symptoms. Participants were compensated $25 to complete the questionnaires.

Measures

SC and PS perfectionism. SC and PS perfectionism latent factors were obtained using combinations of indicators from the 35-item Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990), 45-item Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), and 23-item Revised Almost Perfect Scale (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Based on previous factor analytic studies (e.g., Dunkley, Blankstein, & Berg, 2012; Stoeber & Otto, 2006), FMPS concern over mistakes, HMPS socially prescribed perfectionism, and APS-R discrepancy subscales were used as indicators of the latent factor of SC perfectionism. PS perfectionism was indicated by the FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards subscales. The PS perfectionism latent variable was included in supplementary measurement model analyses. The reliability and validity of the FMPS (Frost et al., 1990), HMPS (Hewitt & Flett, 1991), and APS-R (Slaney et al., 2001) have all been well established. Available French translations were used for French-speaking participants, and previous studies have demonstrated comparable reliability and validity to the original English versions (see Dunkley, Blankstein, et al., 2012).

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979). The 10-item RSES is a widely used measure of global self-esteem, with higher scores indicating a global positive view of the self. The scale has established adequate internal consistency and validity across diverse samples

(see Rosenberg, 1979). The French version of the RSES has demonstrated comparable reliability and validity, and was used for French-speaking participants (Vallières & Vallerand, 1990). In order to control for measurement error, two 5-item parcels were created to serve as indicators of the self-esteem latent factor for the measurement and structural models, consistent with Dunkley and Grilo (2007). These two 5-item parcels correspond to the self-assessment and self-acceptance subscales of the RSES identified by Tafarodi and Milne (2002).

Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez et al., 2011). The MEAQ is a 62-item measure of experiential avoidance (EA) that comprises six subscales. The behavioral avoidance and distress aversion subscales that have been found to reflect the core features of the higher-order EA construct were used as the two indicators of the experiential avoidance latent factor (see Gamez et al., 2011). The behavioral avoidance subscale (11 items) assesses situational avoidance of physical discomfort and distress, whereas the distress aversion subscale (13 items) captures nonacceptance of or negative attitudes toward distress. The subscales have demonstrated good reliability and validity (Gámez et al., 2011). Monestès, Baeyens, Cheval, and Villatte's (2012) French translation of the MEAQ was administered to participants completing the study in French.

Beck Depression Inventory (BDI; Beck & Steer, 1987). The BDI is a 21-item measure of depression symptoms that was used to assess the severity of current depressive symptoms over the last week. The BDI is a widely used measure with substantial support for its internal consistency and validity across a variety of samples (Beck, Steer, & Garbin, 1988). Bourque and Beaudette's (1982) French translation of the BDI was administered to French-speaking participants. The internal consistency and validity of the French BDI has been found to be similar to the original English version (Bourque & Beaudette, 1982). To control for measurement

error, we constructed three distinct 7-item parcels by selecting every third item of the BDI, consistent with Dunkley and Grilo (2007). The parcels then served as three indicators of the depressive symptoms latent factor in the measurement and structural models. The alpha coefficients for the first, second, and third indicators were .62, .70, and .67, respectively, in the present study.

Results

Descriptive Statistics

The means and standard deviations for the perfectionism, self-esteem, experiential avoidance, and depressive symptoms measures were comparable to those found previously in nonclinical samples. T-tests revealed no differences in any mean scores on the indicators of these variables between participants who completed the English version of the questionnaires and those who completed the French version of the questionnaires. The internal consistencies and intercorrelations among the measures for the English and French participants are presented in Table 1. A multiple groups approach to test invariance of the covariance matrices between English and French community participants was performed using Analysis of Moment Structures Version 5.0 (AMOS 5.0; Arbuckle, 2003). The covariances among the indicators of perfectionism, self-esteem, experiential avoidance, and depressive symptoms for participants completing the English version of the questionnaires were constrained to be equal to those for participants completing the French version. The fit of this constrained model was compared with the fit of a model in which the covariances were freely estimated between English and French participants. The nonsignificant difference between the constrained model and the freely estimated model, χ^2_{diff} (55, n = 210) = 40.54, *ns*, suggested that the correlations among variables were comparable between English and French participants.

Measurement model

Confirmatory factor analysis (CFA) was conducted using AMOS 5.0 to test the measurement model, which consisted of four latent variables (self-critical perfectionism, self-esteem, experiential avoidance, depressive symptoms), each with two or more indicators. The measurement model was fit to the data and produced the following acceptable fit indices: χ^2 (29, N = 210) = 63.29, $p < .001$; $\chi^2/df = 2.18$; GFI = .94; IFI = .98; CFI = .97; RMSEA = .075. Convergent validity was supported for the measures, as factor loadings ranged from .75 to .99 and all were highly significant at the $p < .001$ level. The latent variables were all strongly interrelated with correlations ranging from |.48| to |.74| ($p < .001$). A supplementary measurement model was tested with PS perfectionism, given that it is highly correlated with SC perfectionism. As expected, PS perfectionism was unrelated to self-esteem, experiential avoidance, and depressive symptoms, which supported the decision to not include PS perfectionism in the hypothesized structural model.

Structural model

SEM was used to test the hypothesized relations among SC perfectionism, lower self-esteem, experiential avoidance, and depressive symptoms. The fully mediated model (see Figure 1), which constrained the path from SC perfectionism to depressive symptoms to zero, was estimated and resulted in the following excellent fit indices: χ^2 (30, N = 210) = 64.86, $p < .001$; $\chi^2/df = 2.16$; GFI = .94; IFI = .97; CFI = .97; RMSEA = .075; AIC = 114.86; BIC = 198.54. Next, the fully mediated model was compared with a partially mediated model, which estimated the path from SC perfectionism to depressive symptoms. The partially mediated model did not significantly improve the model fit, χ^2_{diff} (1, N = 210) = 1.57, *ns*, and had a higher AIC value (115.29) and a higher BIC value (202.31) compared to the fully mediated model. Smaller AIC

and BIC values are preferred (see Arbuckle, 2003), which supported the more parsimonious fully mediated model over the partially mediated model. Additionally, the path from SC perfectionism to BDI depressive symptoms was nonsignificant (β = .12).

Next, the 95% confidence intervals of the specific indirect effects leading from SC perfectionism to depressive symptoms were tested. In order to test the significance of all the specific indirect effects in this study, Selig and Preacher's (2008) web-based utility was used to derive confidence intervals for each indirect effect, which ranged from simple mediation to two sequential mediators. Their Monte Carlo Method generates and runs R code for simulating the sampling distribution of an indirect effect, and for each indirect effect, unstandardized estimates of each path, their standard errors, a 95% confidence interval (CI), and 20,000 repetitions were used. If the generated values of a 95% CI did not include zero, then the specific indirect effect was deemed significant at the $p < .05$ level.

The 95% CIs from SC perfectionism to depressive symptoms supported the significance of the specific indirect effects of SC perfectionism to depressive symptoms through (1) self-esteem as a single mediator (.362, .535) and (2) experiential avoidance as a single mediator (.048, .101). On the other hand, the 95% CI (CI = -.060, 0.113) of the indirect effect of SC perfectionism to depressive symptoms through self-esteem and experiential avoidance as two sequential mediators was nonsignificant. Additionally, the 95% CI (-.162, .083) did not support the indirect effect from self-esteem to depressive symptoms through experiential avoidance.

Figure 2 presents the standardized factor loadings and parameter estimates for the paths of the final structural model. The mediation results can be clearly understood by considering the significant paths leading from SC perfectionism to depressive symptoms. First, lower self-esteem mediated the relationship between SC perfectionism and depressive symptoms. Second,

experiential avoidance independently mediated the relationship between SC perfectionism and depressive symptoms, controlling for the effects of lower self-esteem.

Although Figure 2 represents one plausible representation of the data, other plausible alternative models were considered. For instance, it is possible that SC perfectionism could mediate the effect of lower self-esteem on depressive symptoms. Accordingly, we tested an alternative model where the SC perfectionism to self-esteem path in the hypothesized model (see Figure 1) was reversed in direction from self-esteem to SC perfectionism, a path from SC perfectionism to depressive symptoms was specified, and the path from self-esteem to depressive symptoms was constrained to zero. This alternative fully mediated model resulted in a worse fit to the data than the hypothesized model (Figure 2), χ^2 (30, N = 210) = 107.44, $p < .001$; χ^2/df = 3.58; GFI = .91; IFI = .94; CFI = .94; RMSEA = .11; AIC = 157.44; BIC = 241.12. Further, there was a greater proportion of variance in depressive symptoms left unaccounted for in the alternative fully mediated model (54%) than the hypothesized fully mediated model (43%). In addition, estimating the path from self-esteem to depressive symptoms in the alternative model resulted in an essentially identical fit as the hypothesized fully mediated model, but the direct relation between self-esteem and depressive symptoms remained strong ($\beta = -.58$, $p < .001$) even when controlling for the effects of SC perfectionism and experiential avoidance. Therefore, the hypothesized model demonstrated greater explanatory value in fully explaining why SC perfectionism was related to depressive symptoms, whereas the alternative model provided a relatively weaker explanation of why lower self-esteem was linked to depressive symptoms.

Discussion

The present study used SEM to examine the relationship between self-critical perfectionism, self-esteem, experiential avoidance, and depressive symptoms in a sample of

community adults. An advantage of using SEM with a relatively large sample size ($N = 210$) is that it allowed for the assessment of multiple relations to be tested simultaneously. Additionally, by using latent factors, we were able to control for measurement error in the mediators and obtain a more accurate estimate of their effects (Baron & Kenny, 1986). We used SEM to examine both low self-esteem and experiential avoidance as mediators in the relation between SC perfectionism and depressive symptoms in community adults. We found that SC perfectionism was significantly indirectly related to depressive symptoms through low self-esteem and experiential avoidance.

The present study replicated and extended previous findings (e.g., Dunkley & Grilo, 2007; Rice et al., 1998) by supporting lower self-esteem as a mediator of the relation between SC perfectionism and depressive symptoms in a sample of community adults. Our findings are consistent with theory dating back to Horney (1950) stating that low self-esteem stems from perfectionistic individuals' perceived discrepancy between their ideal and actual self, and suggests that this finding applies across university students, community adults, and patients. Moreover, though SC perfectionism and low self-esteem are closely related constructs, these results indicate that the effects of SC perfectionism cannot be simply thought of in terms of low self-esteem. Our study found that experiential avoidance mediated the relation between SC perfectionism and depressive symptoms, controlling for the effects of low self-esteem. Furthermore, experiential avoidance did not mediate the relation between self-esteem and depressive symptoms, demonstrating that experiential avoidance is a unique maladaptive characteristic associated with SC perfectionism. The results suggest that experiential avoidance is not necessarily used to regulate feelings of low self-esteem. Rather, our findings indicate that experiential avoidance is used to deal or cope with the negative feelings associated with SC

perfectionism, specifically the harsh self-scrutiny and perceived criticism from others that are key facets of SC perfectionism. Individuals with higher SC perfectionism may develop a pattern of escape, or avoidance, of aversive self-awareness in order to diminish the impact of self-critical thoughts and concerns about negative perceptions by others (see Santanello & Gardner, 2007).

The results indicate that higher levels of SC perfectionism were significantly associated with a greater tendency to experientially avoid distressing thoughts and feelings. This finding expands previous research that demonstrates this relation within more specific aspects or strategies of avoidance, such as avoidant coping (e.g., Dunkley et al., 2000, 2003; Noble et al., 2014). These results can be understood in relation to escape theory, where individuals can be motivated by a desire to escape from aversive self-awareness (Heatherton & Baumeister, 1991). Furthermore, the persistent use of experiential avoidance has been shown to be ineffective and potentially harmful in the long-term, leading to greater experiences of depressive symptoms and demonstrating that what we resist, persists (Hayes et al., 1996). The present results also extend previous models that found evidence for experiential avoidance as a mediator between maladaptive perfectionism and worry (see Santanello & Gardner, 2007) by demonstrating that experiential avoidance mediated the relationship between SC perfectionism and depressive symptoms.

A limitation of the current study is that the data are cross-sectional, which prevents causal statements. As causal relationships often go in both directions, future research should use a multi-wave longitudinal study to address questions of directionality. Additionally, this study's findings are based on retrospective summary questionnaires and are therefore susceptible to the recall biases and distortions inherent in this type of methodology. Replicating these findings using a repeated-measures methodology with less retrospection (e.g., daily diaries) would be

beneficial (see Dunkley, Berg, & Zuroff, 2012). In addition, as this study relied on a global measure of self-esteem, future research should examine whether these findings extend to different domains of self-esteem (e.g., achievement, interpersonal; see Blankstein et al., 2008). Finally, given that our study consisted of nonclinical community adults, it is possible that these findings may not generalize to clinical samples. Nevertheless, we can speculate that the mediational model proposed in this study is not specific to a community sample, given that similar findings have been shown in samples of undergraduate students (Santanello & Gardner, 2007; Rice et al., 1998) and binge eating disorder patients (Dunkley & Grilo, 2007).

In conclusion, this study clarifies the relations among self-critical perfectionism, self-esteem, experiential avoidance, and depressive symptoms. The findings highlight the importance of the mediators of lower self-esteem and experiential avoidance in explaining the relationship between SC perfectionism and depressive symptoms in a sample of community adults. This study illustrated that SC perfectionism is distinct from low self-esteem by demonstrating that experiential avoidance is a unique maladaptive characteristic associated with SC perfectionism in relation to depressive symptoms.

References for Article 1

Arbuckle, J. L. (2003). AMOS 5.0. *Chicago, IL: Smallwaters*.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi: 10.1037/0022-3514.51.6.1173

Beck, A. T., & Steer, R. A. (1987). *Manual for the Beck Depression Inventory*. San Antonio, TX: Psychological Corporation.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: 25 years of evaluation. *Clinical Psychology Review, 8,* 77-100.

Blankstein, K. R., Dunkley, D. M., & Wilson, J. (2008). Evaluative concerns and personal standards perfectionism: Self-esteem as a mediator and moderator of relations with personal and academic needs and estimated GPA. *Current Psychology, 27*, 29-61. doi: 10.1007/s12144-008-9022-1

Bourque, P., & Beaudette, D. (1982). Étude psychometrique du questionnaire de dépression de Beck auprès d'un échantillon d'étudiants universitaires francophones. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, *14*, 211. doi: 10.1037/h0081254

Dunkley, D. M., Berg, J. L., & Zuroff, D. C. (2012). The role of perfectionism in daily self-esteem, attachment, and negative affect. *Journal of Personality*, *80*, 633-663. doi: 10.1111/j.1467-6494.2011.00741.x

Dunkley, D. M., Blankstein, K. R., & Berg, J. (2012). Perfectionism dimensions and the five-factor model of personality. *European Journal of Personality, 26,* 233-244. doi: 10.1002/per.829

Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology, 47*, 437-453. doi: 10.1037/0022-0167.47.4.437

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards and evaluative concerns dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behaviour Research and Therapy, 44*, 63-84. doi: 10.1016/j.brat.2004.12.004

Dunkley, D. M., & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy*, *45*, 139-149. doi:10.1016/j.brat.2006.01.017

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84*, 234-252. doi: 10.1037/0022-3514.84.1.234

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review, 31*, 203-212. doi: 10.1016/j.cpr.2010.04.009

Frost, R. O., Marten, P. A., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468. doi: 10.1007/BF01172967

Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., & Watson, D. (2011). Development of a measure of experiential avoidance: The Multidimensional Experiential Avoidance Questionnaire. *Psychological Assessment*, *23*, 692-713. doi: 10.1037/a0023242

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior, 15*, 27-33.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*, 1152-1168. doi:10.1037/0022-006X.64.6.1152

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, *110*, 86-108. doi: 10.1037/0033-2909.110.1.86

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. doi: 10.1037/0022-3514.60.3.456

Horney, K. (1950). *Neurosis and human growth: The struggle towards self-realization*. New York: Norton.

Monestès, J. L., Baeyens, C., Cheval, S., & Villatte, M. (2012). French translation of the Multidimensional Experiential Avoidance Questionnaire. Centre Hospitalier Félix Guyon, Réunion, France.

Noble, C. L., Ashby, J. S., & Gnilka, P. B. (2014). Multidimensional Perfectionism, Coping, and Depression: Differential Prediction of Depression Symptoms by Perfectionism Type. *Journal of College Counseling*, *17*, 80-94. doi: 10.1002/j.2161-1882.2014.00049.x

Rice, K. G., Ashby, J. S., & Slaney, R. B. (1998). Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *Journal of Counseling Psychology*, *45*, 304-314. doi: 10.1037/0022-0167.45.3.304

Rosenberg, M. (1979). *Conceiving the self.* New York: Basic Books.

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and

specific self-esteem: Different concepts, different outcomes. *American Sociological Review, 60*, 141-156. doi: 10.2307/2096350

Santanello, A. W., & Gardner, F. L. (2007). The role of experiential avoidance in the relationship between maladaptive perfectionism and worry. *Cognitive Therapy and Research*, *31*, 319-332. doi: 10.1007/s10608-006-9000-6

Selig, J. P., & Preacher, K. J. (2008, June). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [Computer software]. Available from http://quantpsy.org/.

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The Almost Perfect Scale-Revised. *Measurement and Evaluation in Counseling and Development, 34*, 130-145.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319. doi: 10.1207/s15327957pspr1004_2

Tafarodi, R. W., & Milne, A. B. (2002). Decomposing global self-esteem. *Journal of Personality, 70*, 443–483. doi: 10.1111/1467-6494.05017

Vallieres, E. F., & Vallerand, R. J. (1990). Traduction et validation Canadienne-Française de l'échelle de l'estime de soi de Rosenberg. *International Journal of Psychology*, *25*, 305-316. doi: 10.1080/00207599008247865

Wegner, D. M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality*, *62*, 615-640. doi: 10.1111/j.1467-6494.1994.tb00311.x

Table 1

Intercorrelations for Measures of Perfectionism, Self-Esteem, Experiential Avoidance, and Depressive Symptoms

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Discrepancy	**.94\.94**	.75***	.68***	.29**	.49***	.34**	-.55***	-.66***	.55***	.44***	.59***
2. CM	.68***	**.89\.91**	.72***	.45***	.60***	.48***	-.46***	-.55***	.40***	.32**	.51***
3. Social Presc.	.57***	.65***	**.83\.87**	.43***	.59***	.35**	-.35**	-.47***	.51***	.48***	.44***
4. Pers. Stds.	.29**	.47***	.39***	**.81\.85**	.73***	.81***	.13	.04	.10	.15	.06
5. Self-Orient.	.38***	.50***	.38***	.63***	**.88\.91**	.75***	-.01	-.14	.32**	.31**	.24*
6. High Stds.	.26**	.37***	.24**	.77***	.69***	**.88\.88**	.12	.03	.16	.17	.15
7. Self-Asses.	-.57***	-.42***	-.27**	.13	-.01	.17	**.79/.80**	.85***	-.39***	-.23*	-.59***
8. Self-Acc.	-.63***	-.54***	-.42***	.05	-.08	.09	.85***	**.83\.81**	-.53***	-.41***	-.68***
9. Beh. Avoid.	.25**	.22*	.23*	-.10	.03	-.12	-.26**	-.32***	**.80\.86**	.80***	.55***
10. Distr. Avr.	.35***	.30**	.47***	.08	.18*	.04	-.29**	-.37***	.61***	**.87\.88**	.45***
11. BDI total	.46***	.34***	.39***	-.06	.08	-.01	-.63***	-.67***	.25**	.35***	**.86\.87**

Note. English participant correlations are below the diagonal; French participant correlations are above the diagonal. Internal consistencies are in bold on the diagonal, with English participant alphas on the left and French participant alphas on the right. CM = Concern over mistakes. Social Presc. = Socially Prescribed Perfectionism. Pers. Stds. = Personal Standards. Self-Orient. = Self-Oriented Perfectionism. High Stds. = High Standards. Self-Asses. = Self-Assessment. Self-Acc. = Self-Acceptance. Beh. Avoid. = Behavioural Avoidance. Distr. Avr. = Distress Aversion. BDI = Beck Depression Inventory.

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

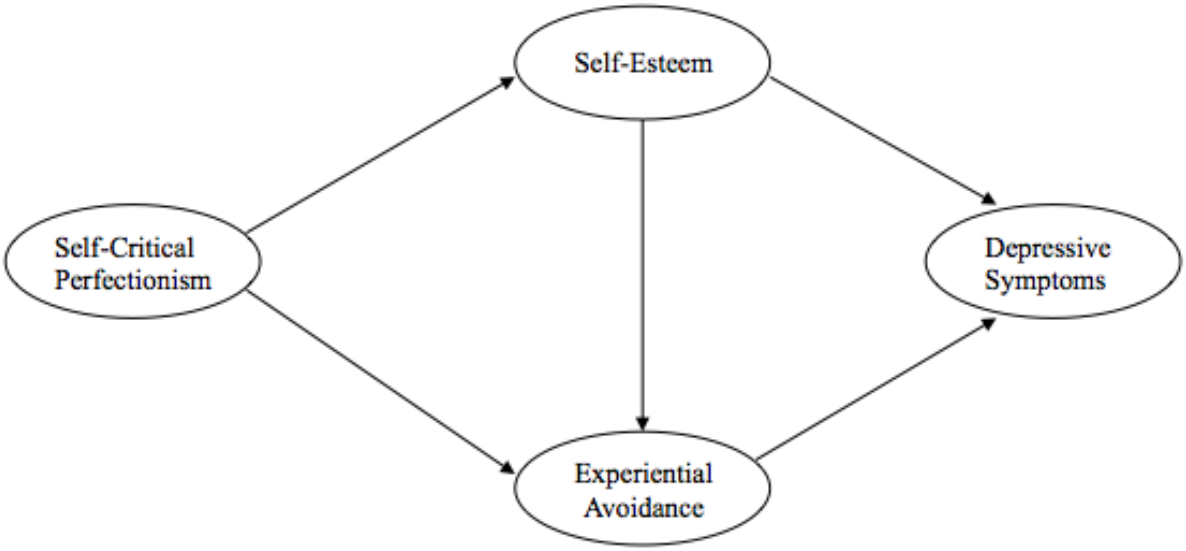

Figure 1. Hypothesized structural model relating self-critical perfectionism, self-esteem, experiential avoidance, and depressive symptoms.

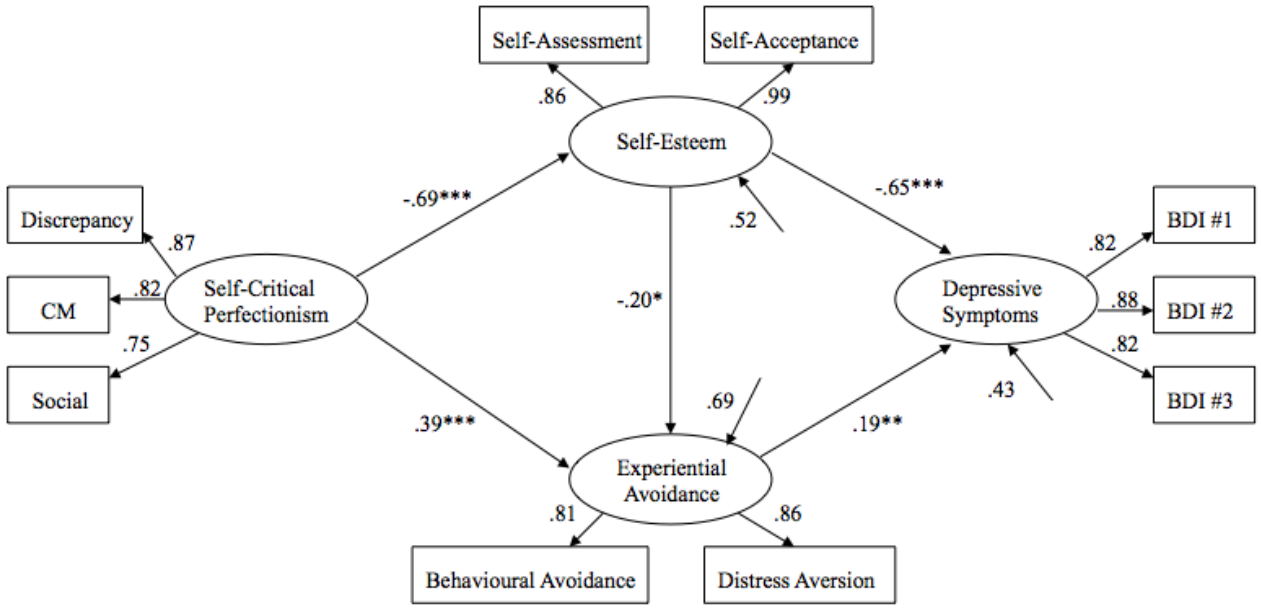

Figure 2. Standardized factor loadings and parameter estimates of the final structural model relating self-critical perfectionism, self-esteem, experiential avoidance, and depressive symptoms. Latent variables are represented by oval-shaped line and measured variables are represented by rectangular-shaped line. The residual arrows denote the proportion of variance in the endogenous latent variable that was unaccounted for by other variables in the model. CM = Concern over mistakes. Social = Socially prescribed perfectionism. BDI = Beck Depression Inventory.
Note. * $p < .05$; ** $p < .01$; *** $p < .001$. All factor loadings are significant at $p < .001$.

Bridge to Article 2

Article 1 aimed to obtain a better understanding of the relations between self-critical perfectionism, self-esteem, experiential avoidance, and depressive symptoms in a sample of community adults. More specifically, Article 1 examined lower self-esteem and experiential avoidance as mediators between self-critical perfectionism and depressive symptoms. Results demonstrated that that the relation between self-critical perfectionism and depressive symptoms was mediated by lower self-esteem. Results also showed that experiential avoidance independently mediated the relation between self-critical perfectionism and depressive symptoms, controlling for the effects of lower self-esteem. Thus, Article 1 distinguished self-critical perfectionism from lower self-esteem by demonstrating that individuals with higher self-critical perfectionism have a tendency toward experiential avoidance, which might explain their higher levels of depressive symptoms.

Article 2 aimed to further extend our understanding of the relationship between self-critical perfectionism, self-esteem, experiential avoidance, and negative outcomes using an experience sampling method in a sample of community adults. Article 2 measured daily experiential avoidance and daily negative affect and sadness by aggregating five within-day reports completed over eight consecutive days. This procedure addresses the methodological limitation of memory distortions and recall biases that are inherent in retrospective summary self-reports. Article 2 focused on replicating and expanding the findings from Article 1, thereby providing additional support for the importance of examining experiential avoidance as a mediator in the relation between self-critical perfectionism and negative affect/sadness. Article 2 also aimed to address whether higher levels of self-critical perfectionism are related to the maintenance of daily experiential avoidance and daily negative affect and sadness.

Article 2

Self-Critical Perfectionism, Self-Esteem, and the Maintenance of Daily Experiential Avoidance, Negative Affect, and Sadness

Molly Moroz and David M. Dunkley

Lady Davis Institute – Jewish General Hospital and McGill University

Moroz, M., & Dunkley, D.M. (In preparation). Self-critical perfectionism, self-esteem, and the maintenance of daily experiential avoidance, negative affect, and sadness.

Abstract

This study (N = 146) examined self-critical (SC) perfectionism, self-esteem, and the maintenance of daily experiential avoidance, negative affect, and sadness. Community adults completed self-report questionnaires assessing self-critical (SC) perfectionism and self-esteem, and then completed five within-day reports assessing experiential avoidance, negative affect, and sadness over eight consecutive days. Confirmatory factor analysis supported SC perfectionism, self-esteem, experiential avoidance, negative affect, and sadness as distinct, but related, constructs. Structural equation modeling (SEM) revealed that the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively, was partially mediated by lower self-esteem. SEM also demonstrated that aggregated daily experiential avoidance independently mediated the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively, controlling for the effects of lower self-esteem. These findings reveal the importance of targeting daily experiential avoidance to reduce the maintenance of negative mood for individuals with higher SC perfectionism.

Keywords: self-criticism, perfectionism, self-esteem, experiential avoidance, experience sampling method

Self-Critical Perfectionism, Self-Esteem, and the Maintenance of Daily Experiential Avoidance, Negative Affect, and Sadness

Perfectionism has received increasing theoretical and empirical attention as a cognitive-personality factor that increases vulnerability to a wide range of psychological problems, including depression and anxiety (Blatt, 2004; Egan, Wade, & Shafran, 2011; Flett & Hewitt, 2002; Smith et al., 2016; Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018). Factor-analytic studies have established perfectionism as a multidimensional construct consisting of two higher-order dimensions, referred to as personal standards (PS) perfectionism and self-critical (SC) perfectionism, that underlie many different perfectionism conceptualizations and measures (e.g., Dunkley, Zuroff, & Blankstein, 2003; Stoeber & Otto, 2006). PS perfectionism is defined as the setting and striving for unrealistically high standards and goals for the self. SC perfectionism involves constant and harsh self-scrutiny, overly critical self-evaluations of one's own behavior and performance, and chronic concerns and worry about others' approval, criticism, and expectations (Dunkley et al., 2003). Previous research has established that SC perfectionism is consistently related to depressive symptoms and higher levels of distress and negative affect (see Dunkley, Blankstein, Masheb, & Grilo, 2006; Stoeber & Otto, 2006). PS perfectionism, in contrast, has demonstrated weak or inconsistent relations with distress and depressive symptoms (Dunkley et al., 2003; Enns & Cox, 1999). Based on existing findings in the perfectionism literature, SC perfectionism is believed to be a more maladaptive dimension, whereas PS perfectionism does not appear to be maladaptive in and of itself (see Smith et al., 2016; Stoeber & Otto, 2006). The main purpose of the present study was to examine daily experiential avoidance as a mediator of the relation between SC perfectionism and daily negative affect and sadness.

Recent studies have examined the role of experiential avoidance as a generalized vulnerability factor related to various forms of psychopathology, including depression and anxiety (Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011; Hayes et al., 2004; Hayes, Strosahl, & Wilson, 1999; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Kashdan, Barrios, Forsyth, & Steger, 2006). Experiential avoidance is defined as the unwillingness to remain in contact with distressing internal and private experiences, such as bodily sensations, emotions, thoughts, and memories, coupled with attempts to alter the form or frequency of these experiences or situations that instigate them (Hayes et al., 1996). It has been suggested that the tendency of individuals with higher SC perfectionism to be overly critical and punitive in their self-evaluations and to experience excessive concerns about making mistakes may serve as motivation to engage in experiential avoidance (Frost, Marten, Lahart, & Rosenblate, 1990; Moroz & Dunkley, 2015). Specifically, these characteristics of SC perfectionism appear to lead to avoidance or control of feelings, thoughts, and situations that might imply or result in failure, criticism, or disappointment (Santanello & Gardner, 2007). In an attempt to avoid contact with negative emotions, self-critical thoughts, and opportunities for failure, individuals with higher SC perfectionism may engage in experiential avoidance to regulate these experiences or to escape from negative self-awareness (Moroz & Dunkley, 2015; Heatherton & Baumeister, 1991). As avoidance strategies often briefly and immediately reduce unwanted internal experiences, SC perfectionistic individuals might continue to engage in experiential avoidance even though such strategies are not effective in the long term (Hayes et al., 1996; 2004). In fact, repeated efforts to suppress or avoid aversive thoughts or feelings often have the paradoxical effect of increasing the thought or feeling being avoided (Gold & Wegner, 1995).

Previous research has shown that individuals with higher SC perfectionism tend to engage in experiential avoidance, and that this tendency appears to explain the link between SC perfectionism and negative outcomes. Specifically, Santanello and Gardener (2007) found that experiential avoidance mediated the relation between maladaptive perfectionism and worry. Similarly, Moroz and Dunkley (2015) found that experiential avoidance mediated the relation between SC perfectionism and depressive symptoms in a sample of community adults. A limitation of the findings from Moroz and Dunkley (2015) and Santanello and Gardner (2007) is the assessment of experiential avoidance using retrospective, dispositional self-report measures that required participants to summarize their tendencies over time and across situations. This methodology tends to be more biased and prone to recall distortions, and may not capture experiential avoidance as it is manifested in daily living.

Although SC perfectionism and low self-esteem are closely related constructs, there is a need to distinguish these constructs. While self-esteem represents a more global negative appraisal of the self (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), SC perfectionism involves concern over perceived deficiencies and self-worth contingencies (e.g., Blatt, 1995; Hamacheck, 1978). Theoretical writings have suggested that self-critical evaluations help maintain the perceived gap between an individual's ideal and actual self, creating experiences of lower self-esteem (Horney, 1950). Previous research using structural equation modeling (SEM) has found support for lower self-esteem as a partial mediator that helps explain the relation between SC perfectionism and depressive symptoms in samples of college students (Blankstein, Dunkley, & Wilson, 2008; Rice, Ashby, & Slaney, 1998) and in a sample of binge eating disordered patients (Dunkley & Grilo, 2007). The partial mediation findings suggest that SC perfectionism has unique qualities beyond lower self-esteem that result in its incremental relation

with depressive symptoms. Additionally, Moroz and Dunkley (2015) found support for lower self-esteem as a mediator between SC perfectionism and depressive symptoms. The findings further illustrated that SC perfectionism was distinct from low self-esteem by demonstrating that experiential avoidance was a unique maladaptive characteristic associated with SC perfectionism in relation to depressive symptoms. The current study sought to further distinguish SC perfectionism from lower self-esteem by examining relations with negative affect and sadness. Additionally, we sought to replicate and build on findings from the aforementioned study by examining experiential avoidance using more ecologically valid aggregated assessments from daily life.

Study Aims and Hypotheses

The present study sought to investigate the relations among SC perfectionism, self-esteem, experiential avoidance, negative affect, and sadness in a sample of community adults. The current study built substantially on previous research by attempting to replicate findings from a model from Moroz and Dunkley (2015) using an experience sample method. Specifically, unlike previous mediation studies that have used one-occasion, retrospective questionnaires, the present study included a major methodological improvement by using repeated within-day reports across eight days to obtain situational measures of experiential avoidance, negative affect, and sadness. An advantage of using within-day reports is that it limits retrospective memory biases and distortions (Moskowitz, 1986), in addition to providing a broader representation of individuals' emotion regulation strategies and affect throughout the day and over several days. In the present study, each person's responses were aggregated across situations (i.e., within-day records) and time (i.e., days), thereby empirically deriving trait measures of experiential avoidance. This enabled us to examine whether SC perfectionism is

related to aggregated, situation-specific assessments of experiential avoidance, negative affect and sadness, in addition to investigating whether the relations are comparable to those reported in previous studies using retrospective trait measures.

The current study examined both negative affect and sadness as outcomes related to the vulnerability of individuals with higher SC perfectionism. Negative affect reflects a more general dimension of affect and subsumes a variety of negative emotions, and has been shown to be related to both depressive and anxious outcomes. Sadness differs conceptually from negative affect and denotes specific content not captured in broader dimensions such as negative affect (Watson, Clark, & Stasik, 2011). Specifically, sadness represents low activation emotions such as feeling lonely, downhearted, and alone, which differs from the externalizing components often found in negative affect, including anger and frustration (Watson et al., 2011). These more active and externalizing components of negative affect may prompt protective "approach" behaviors or coping efforts, whereas sadness may elicit withdrawal or avoidance behaviors, possibly contributing to increases in anxiety over time (Carver & Harmon-Jones, 2009). Given these differences between negative affect and sadness, the current study examined both negative affect and sadness, using aggregated daily assessments, as outcomes related to the vulnerability of individuals with higher SC perfectionism.

Figure 1 presents the hypothesized mediational model of the relation between SC perfectionism and daily negative affect and sadness as follows: (1) SC perfectionism would be related to both lower self-esteem and daily experiential avoidance; (2) lower self-esteem would be related to experiential avoidance; and (3) lower self-esteem and experiential avoidance would be related to daily negative affect and sadness. We expected that both lower self-esteem and experiential avoidance would mediate the relation between SC perfectionism and both negative

affect and sadness, respectively. Finally, it was hypothesized that experiential avoidance would be a unique characteristic associated with SC perfectionism that further explains why SC perfectionism is consistently related to negative affect and sadness over and above lower self-esteem.

Methods

Participants

Participants included 146 English- and French-speaking community adults holding paid employment, from an original sample of 152 participants who completed the baseline questionnaires. Participants were recruited through newspaper, bulletin, and online advertisements in order to obtain a representative community sample from a bilingual North American city. Of the 146 participants, 89 participants (33 male, 56 female) completed the English version of the questionnaires, whereas 57 participants (21 male, 36 female) completed the French version of the questionnaires. The mean age of the sample at Time 1 was 36.99 years (*SD* = 14.52). Participants were largely of European descent (61%), with 19.2% Asian, 4.8% South American, 2.7% African, 2.1% East Indian, 2.1% Aboriginal, 1.4% Middle Eastern, and 6.7% identified as either multi-ethnic or unspecified. The majority of participants graduated from college (27.4%) or university (59.6%).

Procedure

This repeated-measures study involved questionnaires and an experience sampling method (ESM) procedure consisting of five repeated within-day reports every day for eight consecutive days for a possible total of 40 within-day reports per participant. First, participants completed an online package of questionnaires and demographic information during a 1.5 to 2-hour lab session assessing levels of perfectionism and self-esteem measures. Participants were

then asked to complete the ESM procedure online assessing experiential avoidance and affect measures. To facilitate their motivation and compliance, participants were offered the option to complete the ESM online using their own electronic device of choice (e.g., smartphone, computer, tablet). Within-day reports invited participants to refer to the timeframe "since the last assessment" when answering questions about their affect and experiential avoidance tendencies, with the exception of the first report of the day which asked them to refer to the timeframe "since I woke up."

Participants were asked to aim to complete one within-day record every two to three hours, and allow a minimum of 12 hours between their first and fifth records. Participant within-day records were considered compliant if there was at least one hour between within-day records, and non-compliant if the record was incomplete or if there was less than one hour between records. In the current study, 127 participants completed over 34 compliant within-day records (> 85% compliance rate), 8 participants completed at least 30 within-day records (>75% compliance rate), 4 participants completed at least 20 compliant within-day records (>50% compliance rate), and 7 participants completed between 4-10 within-day records. On average, it took 4.37 minutes (SD= 7.98) to complete each within-day report. Participants completed on average one report every 2.97 hours (SD = 1.65) and there was on average 12.51 hours (SD= 2.47) between their first and fifth within day reports. Participants were compensated $25 for completion of the online questionnaires, $25 for completing the ESM procedure, and an additional $25 if they completed the ESM procedure with a compliance rate of 85% or more, for a potential total of $75. Compensation was adjusted relative to participants' overall compliance rates.

Measures

Perfectionism. SC and PS perfectionism latent factors were obtained using combinations of measures from the 35-item Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990), 45-item Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), and 23-item Revised Almost Perfect Scale (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Factor analytic studies of the FMPS, HMPS, and APS-R scales have consistently yielded two higher-order SC and PS dimensions of perfectionism across samples of university students, community adults, and depressed patients (Dunkley, Blankstein, & Berg, 2012; see Stoeber & Otto, 2006, for a review). Based on these previous factor analytic findings (e.g., Dunkley et al., 2012; see Stoeber & Otto, 2006), the SC perfectionism latent factor was indicated by FMPS concern over mistakes, HMPS socially prescribed perfectionism, and APS-R discrepancy subscales, whereas the PS perfectionism latent factor was indicated by the FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards subscales. Multiple indicators derived from various theoretical and empirical perspectives were used to obtain a more comprehensive and integrated assessment of the different aspects of the broader SC and PS dimensions than would be obtained by using individual measures (e.g., Dunkley et al., 2003). The reliability and validity of the FMPS (e.g., Frost et al., 1990), HMPS (e.g., Hewitt & Flett, 1991), and APS-R (e.g., Slaney et al., 2001) scales have all been well established. French versions of the FMPS (Rhéaume et al., 1994), HMPS (Labrecque, Stephenson, Boivin, & Marchand, 1998), and APS-R (Kyparissis, Pierre, Goldsmith, & Dunkley, 2006) were administered to the French participants in this study. Previous studies have demonstrated comparable reliability and validity to the original English versions (see Dunkley et al., 2012).

Self-esteem. The 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979) is a

widely used measure of global self-esteem, with higher scores indicating a global positive view of the self. The scale has established adequate internal consistency and validity across diverse samples (see Rosenberg, 1979). The French version of the RSES has demonstrated comparable reliability and validity, and was used for French-speaking participants (Vallieres & Vallerand, 1990). In order to control for measurement error, two 5-item parcels were created to serve as indicators of the self-esteem latent factor for the measurement and structural models, consistent with Dunkley and Grilo (2007). These two 5-item parcels correspond to the self-assessment and self-acceptance subscales of the RSES identified by Tafarodi and Milne (2002). The alpha coefficient for self-esteem in the present study was .90.

Experiential avoidance. Experiential avoidance was measured based on four items from the Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014). Items were adapted to reflect the timeframe of the experience sampling method (i.e., since the last assessment, or since you woke up), and anchored to the most bothersome event or issue of the specified record. The behavioral avoidance and distress aversion subscales served as the two indicators of the experiential avoidance latent factor, as they have been found to reflect the core features of the higher-order experiential avoidance construct (see Gámez et al., 2011). The behavioral avoidance subscale included the two items with the highest loadings from the corresponding subscale of the BEAQ and assessed situational avoidance of physical discomfort and distress. The distress aversion subscale also included the two items with the highest loadings from the corresponding subscale from the BEAQ and captured nonacceptance of or negative attitudes toward distress. The subscales have demonstrated good reliability and validity (Gámez et al., 2011). Selected items from the Monestès, Baeyens, Cheval, and Villatte (2012) French translation of the MEAQ were administered to participants completing the study in French. The

alpha coefficient for EA was computed by aggregating items across within-day records and in the current study was .88.

Affect. The Positive and Negative Affect Schedule - Short Form (PANAS; Thompson, 2007) was used to assess negative affect and sadness since the last assessment at the within-day level. In this abbreviated PANAS, negative affect is composed of five adjectives. Three additional adjectives from the PANAS–Expanded (PANAS–X; Watson & Clark, 1994) were used to assess sadness. Participants rated these adjectives using a 5-point scale that ranged from 1 (very slightly or not at all) to 5 (extremely). Support for the reliability, convergent validity, and internal consistency of the PANAS-Short Form and PANAS-X have been found (e.g., Dunkley, Mandel, & Ma, 2014; Thompson, 2007; Watson & Clark, 1994). The alpha coefficients for the negative affect and sadness scales were computed by aggregating items across within-day records and in the present study were .95 and .91, respectively. To control for measurement error, we constructed two distinct parcels for negative affect by selecting every second item of the PANAS – Short Form. The parcels then served as two indicators of the negative affect latent factor in the structural models. The three sadness adjectives were used as indicators for the sadness latent factor.

Model Testing

Model testing was conducted using Analysis of Moment Structures Version 5.0 (AMOS 5.0; Arbuckle, 2003), which uses the maximum likelihood (ML) method to examine the overall fit of the models to the corresponding observed variance-covariance matrices. Multiple indices of fit were used to assess the fit of the model to the data (see Hoyle & Panter, 1995). First, absolute fit was assessed using the ratio of the χ^2 value to the degrees of freedom, and a suitable fit is found when the ratios are within the range of 2 to 1 (Carmines & McIver, 1981). Then, we considered the goodness-of-fit index (GFI; absolute fit; Jöreskog & Sörbom, 1984), the

incremental fix index (IFI; incremental fit; Bollen, 1989), and the comparative fit index (CFI; incremental fit; Bentler, 1990), with values of .90 or higher demonstrating better fitting models (see Hoyle & Panter, 1995). Finally, the root mean square error of approximation (RMSEA; parsimony-adjusted fit; Steiger, 1990) was used to assess model fit, with values of .08 or less indicating adequate fit (Browne & Cudeck, 1993). We also followed Hoyle and Panter's (1995) recommendation that competing models be compared using fit indices that account for model complexity. Parsimony-adjusted indices of fit compared between models were the Akaike information criterion (AIC; Akaike, 1987) and the Bayes information criterion (BIC; Schwarz, 1978), with smaller values being preferred (see Arbuckle, 2003).

Selig and Preacher's (2008) web-based utility was used to generate confidence intervals in order to test the significance of the indirect effects. In contrast to other mediation tests (e.g., Baron & Kenny, 1986; Sobel, 1982), Selig and Preacher's (2008) procedure relies on a random selection of a large number of samples from the original dataset instead of assuming parametric results. Their Monte Carlo Method generates and runs R code for simulating the sampling distribution of an indirect effect. For each indirect effect, unstandardized path estimates, asymptotic covariance estimates, a 95% confidence level, and 20,000 bootstrap samples created by randomly sampling and replacing the original data were entered to compute confidence intervals (CI). If the CI did not include zero, the indirect effect was considered statistically significant at the $p < .05$ level.

Results

Descriptive statistics

The 146 participants completed 5,303 out of a possible total of 5,840 within-day reports of experiential avoidance, negative affect, and sadness. The within-day reports of experiential

avoidance, negative affect, and sadness were averaged for each participant. The means, standard deviations, intercorrelations, and coefficient alphas for all measures are shown in Table 1. T-tests revealed no differences in any mean scores on the indicators of these variables between participants who completed the English version of the questionnaires and those who completed the French version of the questionnaires. Table 1 presents the intercorrelations among the indicators of each latent variable.

Measurement model

A confirmatory factor analysis (CFA) was conducted using AMOS 5.0 to test the measurement model, which consisted of five latent variables (self-critical perfectionism, self-esteem, experiential avoidance, negative affect, and sadness), each with two or more indicators. An initial test of the measurement model was fit to the data and resulted in less than optimal fit indices: χ^2 (44, N = 146) = 321.27, $p < .001$; $\chi^2/df = 7.30$; GFI = .80; IFI = .82; CFI = .81; RMSEA = .21. Examination of standardized residuals and modification indexes suggested that there was some shared error between the lonely and alone indicators of the sadness latent variable. Thus, the error terms for the lonely and alone indicators of the sadness latent factor were permitted to correlate. In addition, the standardized factor loading of the distress aversion indicator of experiential avoidance was greater than one, but this was not an issue of concern because the negative residual variances was not significantly different from zero, which suggests simple sample variability around a very small value as a likely explanation. The standardized factor loading of distress aversion dropped below one when the indicators of experiential avoidance were subsequently constrained to be equal. The respecified measurement model resulted in a good fit to the data : χ^2 (44, N = 146) = 71.44, $p < .01$; $\chi^2/df = 1.62$; GFI = .92; IFI = .98; CFI = .98; RMSEA = .066.

Convergent validity was supported for the measures, as factor loadings ranged from .66 to .99 and all were highly significant at the $p < .001$ level. Cohen's (1992) criteria is used for describing weak (r = .10), moderate (r = .30), and strong (r = .50) effect sizes and to classify the strength of the intercorrelations. The latent variables were all moderately to strongly interrelated with correlations ranging from |.25| to |.89| ($p < .05$). Specifically, SC perfectionism was strongly negatively correlated with self-esteem ($r = -.83$, $p < .001$), and moderately to strongly correlated with daily experiential avoidance ($r = .28$, $p < .05$), negative affect ($r = .50$, $p < .001$), and sadness ($r = .46$, $p < .001$). Self-esteem was moderately negatively correlated with experiential avoidance ($r = -.25$, $p < .05$), negative affect ($r = -.45$, $p < .001$), and sadness ($r = -.44$, $p < .001$). The experiential avoidance latent variable was moderately correlated with negative affect ($r = .31$, $p < .01$) and sadness ($r = .26$, $p < .05$). Lastly, negative affect was strongly correlated with sadness ($r = .89$, $p < .001$). A supplementary measurement model was tested with PS perfectionism, given that it is highly correlated with SC perfectionism. As expected, PS perfectionism was unrelated to self-esteem, experiential avoidance, negative affect, and sadness.

Structural model

SEM was used to test the hypothesized relations among SC perfectionism, lower self-esteem, experiential avoidance, and negative affect and sadness (see Figure 1). The same model was tested with PS perfectionism. As expected, and consistent with previous research (Moroz & Dunkley, 2015; Dunkley et al., 2003), PS perfectionism was unrelated to self-esteem, experiential avoidance, and negative affect/sadness, and therefore was not considered further.

SC perfectionism, self-esteem, experiential avoidance, and negative affect model. The hypothesized fully mediated structural model was tested and resulted in the following acceptable indices of fit: χ^2 (23, N=146) = 50.38, $p < .001$; $\chi^2/df = 2.19$; GFI = .93; IFI = .97; CFI

= .97; RMSEA = .091. Next, on the basis of Wald tests, nonsignificant paths were deleted to obtain the most parsimonious model (see Klein, 2005). The nonsignificant path from self-esteem to experiential avoidance was deleted, and the structural model (see Figure 2) was re-estimated and resulted in the following acceptable fit indices: χ^2 (24, N = 146) = 50.42, p = .001; χ^2/df = 2.10; GFI = .93; IFI = .97; CFI = .97; RMSEA = .087; AIC = 92.42; BIC = 155.08. To test whether SC perfectionism had a unique relation with negative affect when the relations of self-esteem and experiential avoidance with negative affect were controlled for, a partially mediated model, which included a path from SC perfectionism to negative affect, was also estimated and compared with the fully mediated model (i.e., no direct relation between SC perfectionism and negative affect). The partially mediated model had the following fit indices: χ^2 (23, N = 146) = 46.30, p = .003; χ^2/df = 2.01; GFI = .93; IFI = .97; CFI = .97; RMSEA = .084; AIC = 90.30; BIC = 155.94. The chi-square difference test, χ^2_{diff} (1, N = 146) = 4.12, $p < .05$, and AIC values but not the BIC values slightly favored the partially mediated model. However, there was little difference in predictive power between the fully mediated model and the partially mediated model, which accounted for 3% more variance in negative affect. Additionally, when estimating the path from SC perfectionism to negative affect in the partially mediated model (β = .41, p = .03), the self-esteem–negative affect relation became nonsignificant (β = -.05, p = .77). Therefore, as the partially mediated model was less theoretically informative in explaining why SC perfectionism was related to negative affect, we adopted the fully mediated model, which had comparable predictive power and greater explanatory power.

Figure 2 presents the significant standardized parameter estimates and factor loadings of the final structural model. The residual arrows indicate the proportion of variance in each endogenous latent variable unaccounted for by other variables in the model. The 95% CIs from

SC perfectionism to negative affect supported the significance of the specific indirect effects of SC perfectionism to negative affect through (1) self-esteem as a single mediator (.015, .038) and (2) experiential avoidance as a single mediator (.001, .011). The mediation results can be clearly understood by considering the significant paths leading from SC perfectionism to negative affect. First, lower self-esteem mediated the relationship between SC perfectionism and negative affect. Second, experiential avoidance independently mediated the relationship between SC perfectionism and negative affect, controlling for the effect of lower self-esteem.

SC perfectionism, self-esteem, experiential avoidance and sadness model. The hypothesized fully mediated structural model was tested and resulted in the following acceptable indices of fit: χ^2 (31, N=146) = 68.60, $p < .001$; χ^2/df = 2.21; GFI = .92; IFI = .96; CFI = .96; RMSEA = .091. Next, on the basis of Wald tests, the nonsignificant path from self-esteem to experiential avoidance was deleted, and the fully mediated structural model (see Figure 3) was re-estimated and resulted in the following acceptable fit indices: χ^2 (32, N = 146) = 68.70, p = .001; χ^2/df = 2.15; GFI = .92; IFI = .96; CFI = .96; RMSEA = .089; AIC = 114.70; BIC = 183.33. To test whether SC perfectionism had a unique relation with sadness when the relations of self-esteem and experiential avoidance with sadness were controlled for, a partially mediated model, which included a path from SC perfectionism to sadness, was also estimated and compared with the fully mediated model (i.e., no direct relation between SC perfectionism and sadness). The partially mediated model had the following fit indices: χ^2 (31, N = 146) = 65.55, $p < .001$; χ^2/df = 2.11; GFI = .92; IFI = .97; CFI = .97; RMSEA = .088; AIC = 113.55; BIC = 185.15. The chi-square difference test, χ^2_{diff} (1, N = 146) = 3.15, *ns*, and BIC values but not the AIC values favored the fully mediated model. Additionally, the path from SC perfectionism to sadness in the partially mediated model was nonsignificant ($\beta = .33$, $p = .09$), and when

estimated, the self-esteem–sadness relation also became nonsignificant (β = .09, p = .64). Thus, we adopted the fully mediated model, which was more parsimonious and had greater explanatory power.

Figure 3 presents the standardized parameter estimates and factor loadings of the final structural model. The 95% CIs from SC perfectionism to sadness supported the significance of the specific indirect effects of SC perfectionism to sadness through (1) self-esteem as a single mediator (.001, .019) and (2) experiential avoidance as a single mediator (.001, .009). The mediation results can be understood by considering the paths leading from SC perfectionism to sadness. First, lower self-esteem mediated the relationship between SC perfectionism and sadness. Second, experiential avoidance independently mediated the relationship between SC perfectionism and sadness, controlling for the effect of lower self-esteem.

Discussion

The present study was the first to use an experience sampling methodology and SEM to examine the relations between self-critical perfectionism, self-esteem, daily experiential avoidance, and daily negative affect and sadness. Our results replicated previous cross-sectional findings (Moroz & Dunkley, 2015) by examining aggregated situational assessments of experiential avoidance as a dispositional mediator of the relation between SC perfectionism and both daily negative affect and sadness in a sample of community adults. As hypothesized, we found that SC perfectionism was significantly indirectly related to both daily negative affect and sadness through daily experiential avoidance and low self-esteem.

Our findings demonstrated that SC perfectionism was related to aggregated, situation-specific assessments of experiential avoidance. This finding is consistent with previous studies that used retrospective measures of experiential avoidance (Moroz & Dunkley, 2015; Santanello

& Gardner, 2007). The present study provided a more ecologically valid representation of the use of experiential avoidance as an emotion regulation strategy in individuals with higher SC perfectionism (Epstein, 1983; Moskowitz, 1986). It appears that greater perfectionistic concerns and self-critical evaluations are associated with a greater tendency to avoid aversive thoughts and feelings. This finding is consistent with previous theory that discusses how individuals with greater SC perfectionism might develop patterns of escape or avoidance in order to regulate the negative thoughts and feelings associated with their maladaptive perfectionism (see Santanello & Gardner, 2007). Additionally, our findings demonstrated that higher daily experiential avoidance was significantly related to higher daily negative affect and sadness, respectively. This finding supports the notion that experiential avoidance is a maladaptive emotion regulation strategy, that might be effective in relieving immediate distress, but that has negative consequences when used across situations over time. These results are also consistent with the assertion that experiential avoidance is associated with various psychological distress symptoms (Hayes et al., 1996, 1999).

Finally, our results revealed that daily experiential avoidance mediated the relation between SC perfectionism and daily negative affect and sadness, respectively, controlling for the effects of lower self-esteem. This finding replicates previous studies using retrospective summary measures (e.g., Moroz & Dunkley, 2015; Santanello & Gardner, 2007), and more validly captures the mediating effect of experiential avoidance in daily living as it was measured repeatedly across days and situations. In line with escape theory, this mediational finding highlights that individuals with higher SC perfectionism might be motivated to escape from aversive self-awareness by engaging in experiential avoidance (Heatherton & Baumeister, 1991). In turn, their tendency to use experiential avoidance as a regulation strategy might explain their greater maintenance of negative affect and sadness over time.

The present study also extended previous findings (e.g., Moroz & Dunkley, 2015; Dunkley & Grilo, 2007; Rice et al., 1998) by demonstrating that lower self-esteem mediated the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively. This finding is in line with clinical observations (e.g., Horney, 1950) describing that the link between perfectionism and lower self-esteem stems from the perceived discrepancy between an individuals' ideal and actual self, including a dissatisfaction with their level of performance. Our results demonstrated that individuals with higher SC perfectionism possess a global negative view of the self, which in turn, is related to trait-like (i.e., aggregated repeated daily) negative affect and sadness, respectively. Furthermore, these results provide further evidence that SC perfectionism and low self-esteem are closely related but distinct constructs, and that the effects of SC perfectionism cannot be reduced to representing low self-esteem. For instance, the results demonstrated that experiential avoidance did not mediate the relation between low self-esteem and negative affect and sadness, respectively, in keeping with previous findings (Moroz & Dunkley, 2015). This finding implies that experiential avoidance might not be used to regulate feelings of low self-esteem, and further emphasizes that experiential avoidance is a unique maladaptive characteristic associated with SC perfectionism.

Moreover, our mediational findings were significant for both negative affect and sadness outcome variables. This suggests that the tendency to engage in experiential avoidance for individuals with higher SC perfectionism is related to both general negative affect as well as more specific negative emotions. There is value in examining negative affect and sadness separately as general negative affectivity has been related to approach-oriented coping efforts that might be protective with regards to personality vulnerability, whereas sadness represents low activation emotions that might further contribute to avoidance and withdrawal behaviors (Carver

& Harmon-Jones, 2009). Our significant findings for both negative affect and sadness also support the view that SC perfectionism is a transdiagnostic risk factor, which might help further explain the complexity in clinical presentation seen in individuals with higher SC perfectionism.

Clinical Implications

There are important clinical implications to consider in relation to our results, especially given that previous research has shown that individuals with higher SC perfectionism demonstrate a poor response to treatment targeting negative affect/mood (Blatt & Zuroff, 2005; Jacobs et al., 2009). Our findings highlight the importance of targeting daily experiential avoidance in individuals with greater SC perfectionism in order to reduce daily experiences of negative affect and sadness. Focusing on targeting mechanisms, such as experiential avoidance, involved in the consistent relation between SC perfectionism and negative outcomes might produce important gains in therapy and help foster mastery in these individuals. Several emergent therapies such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) and Dialectical Behavior Therapy (DBT; Linehan, 1993) include specific strategies aimed at increasing distress tolerance and self-acceptance, and decreasing experiential avoidance. These third-wave therapies might be particularly effective for individuals with higher SC perfectionism as they aim to reduce attempts to control, alter, or avoid internal thoughts and feelings, which might foster greater self-compassion to counter-balance self-critical evaluations.

Limitations and Future Directions

There were limitations of the present study that warrant attention in future research. Although an ESM procedure across eight days was an advantage of the current study, future research should examine these relations longitudinally. Accordingly, it would be beneficial to include multiple waves of data spanning several months or years in future studies. Second, as self-report measures were used and therefore susceptible to the disadvantages and biases of this

type of methodology, future studies might use informant reports, assessments of observable behaviors, or interviews to supplement self-reports. In addition, this study used a global measure of self-esteem. Future studies could examine whether these findings extend to distinctive domains of self-esteem, such as interpersonal or achievement (see Blankstein et al., 2008). Finally, the generalizability of our results to clinical samples, such as patients with depression and/or anxiety disorders, needs to be examined. We cautiously speculate that our mediational model is not specific to a sample of community adults as similar findings have been shown in samples of undergraduate students (Santanello & Gardner, 2007; Rice et al., 1998) and binge eating disorder patients (Dunkley & Grilo, 2007).

Conclusion

The present study used an experience sampling method and SEM to better understand the relations among SC perfectionism, low self-esteem, daily experiential avoidance, negative affect, and sadness. The results demonstrated that daily experiential avoidance and lower self-esteem mediated the relation between SC perfectionism and aggregated daily negative affect and sadness in a sample of community adults. The findings underscore the importance of examining experiential avoidance as a unique maladaptive emotion regulation strategy associated with SC perfectionism in relation to negative outcomes. This study also provided further support for the distinction between SC perfectionism and low self-esteem.

References for Article 2

Akaike, H. (1987). Factor analysis and AIC. *Psychometrika, 52*, 317–332. doi: 10.1007/978-1-4612-1694-0_29

Arbuckle, J. L. (2003). AMOS 5.0. *Chicago, IL: Smallwaters.*

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi: 10.1037/0022-3514.51.6.1173

Bentler, P. M. (1990). Comparative fit indices in structural models. *Psychology Bulletin, 107*, 238-246. doi: 10.1037/0033-2909.107.2.238

Blankstein, K. R., Dunkley, D. M., & Wilson, J. (2008). Self-criticism and personal standards perfectionism: Self-esteem as a mediator and moderator of relations with personal and academic needs and estimated GPA. *Current Psychology, 27*, 29-61. doi: 10.1007/s12144-008-9022-1

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist, 50*, 1003-1020. doi:10.1037/0003-066x.50.12.1003

Blatt, S. J. (2004). *Experiences of Depression: Theoretical, Clinical, and Research Perspectives.* Washington, DC: American Psychological Association.

Blatt, S. J., & Zuroff, D. C. (2005). Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clinical Psychology Review*, *25*(4), 459-486. doi: 10.1016/j.cpr.2005.03.001

Bollen, K.A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods Research, 17*, 303-316. doi: 10.1177/0049124189017003004

Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen, & J.S. Long (Eds.), *Testing structural equation models* (pp.136-162). Newbury Park, CA: Sage.

Carmines, E.G., & McIver, J.P. (1981). Analyzing models with unobserved variables: Analysis of covariance structures. In G. Bohmstedt & E. Borgatta (Eds.), *Social Measurement: Current Issues* (pp. 65-115). Beverly Hills, CA: Sage.

Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: evidence and implications. *Psychological Bulletin*, *135*, 183-204. doi: 10.1037/a0013965

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Dunkley, D. M., Blankstein, K. R., & Berg, J. (2012). Perfectionism dimensions and the five-factor model of personality. *European Journal of Personality, 26*, 233-244. doi: 10.1002/per.829

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards and self-criticism dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behaviour Research and Therapy, 44*, 63-84. doi: 10.1016/j.brat.2004.12.004

Dunkley, D. M., & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy, 45*, 139-149. doi: 10.1016/j.brat.2006.01.017

Dunkley, D. M., Mandel, T., & Ma, D. (2014). Perfectionism, neuroticism, and daily stress reactivity and coping effectiveness 6 months and 3 years later. *Journal of Counseling Psychology, 61*, 616-633. doi:10.1037/cou0000036

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84*, 234-252. doi: 10.1037//0022-3514.84.1.234

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review, 31*, 203-212. doi: 10.1016/j.cpr.2010.04.009

Enns, M. W., & Cox, B. J. (1999). Perfectionism and depression symptom severity in major depressive disorder. *Behavior Research and Therapy*, *37*, 783-794.

Epstein, S. (1983). Aggregation and beyond: Some basic issues on the prediction of behavior. *Journal of Personality*, *51*, 360-392.

Flett, G. L., & Hewitt, P. L. (Eds.). (2002). *Perfectionism: Theory, research, and treatment.* Washington, DC: American Psychological Association.

Frost, R. O., Marten, P. A., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468. doi: 10.1007/BF01172967

Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., & Watson, D. (2011). Development of a measure of experiential avoidance: The Multidimensional Experiential Avoidance Questionnaire. *Psychological Assessment, 23*, 692-713. doi: 10.1037/a0023242

Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., Suzuki, N., & Watson, D. (2014). The brief experiential avoidance questionnaire: development and initial validation. *Psychological Assessment*, *26*, 35-45. doi: 10.1037/a003447

Gold, D. B., & Wegner, D. M. (1995). Origins of ruminative thought: Trauma, incompleteness, nondisclosure, and suppression. *Journal of Applied Social Psychology, 25*, 1245-1261. doi: 10.1111/j.1559-1816.1995.tb02617.x

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior, 15,* 27-33.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44,* 1-25. doi: 10.1016/j.brat.2005.06.006

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: Understanding and treating human suffering.* New York: Guilford.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & Stewart, S. H. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578. doi: 10.1007/BF03395492

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168. doi: 10.1037/0022-006X.64.6.1152

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin, 110*, 86-108. doi: 10.1037/0033-2909.110.1.86

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. doi: 10.1037/0022-3514.60.3.456

Horney, K. (1950). *Neurosis and human growth: The struggle towards self-realization.* New York: Norcross.

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed*.), Structural equation modeling: Concepts, issues, and applications* (pp. 158-176). Thousand Oaks, CA: Sage Publications, Inc.

Jacobs, R. H., Silva, S. G., Reinecke, M. A., Curry, J. F., Ginsburg, G. S., Kratochvil, C. J., & March, J. S. (2009). Dysfunctional attitudes scale perfectionism: a predictor and partial mediator of acute treatment outcome among clinically depressed adolescents. *Journal of Clinical Child & Adolescent Psychology*, *38*, 803-813. doi: 10.1080/15374410903259031

Jöreskog, K. G., & Sörbom, D. (1984). LISREL-VI user's guide.

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy*, *44*, 1301-1320. doi: 10.1016/j.brat.2005.10.003

Klein, R. B. (2005). Principles and Practice of Structural Equation Modeling. New York. *NY: Guilford.*

Kyparissis, A., Pierre, A., Goldsmith, P., & Dunkley, D. M. (2006). French version of the Revised Almost Perfect Scale (APS-R). SMBD Jewish General Hospital, McGill University, Montreal, Quebec, Canada.

Labrecque, J., Stephenson, R., Boivin, I., & Marchand, A. (1998). Validation de l'échelle multidimensionnelle du perfectionnisme auprès de la population francophone. *Revue Francophone de Clinique Comportementale et Cognitive, 3*, 1–14.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford press.

Monestès, J. L., Villatte, M., Mouras, H., Loas, G., & Bond, F. W. (2009). Traduction et validation française du questionnaire d'acceptation et d'action (AAQ-II). *Revue Européenne de Psychologie Appliquée, 59*, 301-308. doi: 10.1016/j.erap.2009.09.001

Moroz, M., & Dunkley, D. M. (2015). Self-critical perfectionism and depressive symptoms: Low self-esteem and experiential avoidance as mediators. *Personality and Individual Differences, 87*, 174-179. doi: 10.1016/j.paid.2015.07.044

Moskowitz, D. S. (1986). Comparison of self-reports, reports by knowledgeable informants, and behavioral observation data. *Journal of Personality*, *54*, 294-317. doi: 10.1111/j.1467-6494.1986.tb00396.x

Rhéaume, J., Letarte, H., Freeston, M. H., Dugas, M., Ladouceur, R., Boivin, I., & Marchand, A. (1994). L'Échelle de standards personnels (French version of the Frost MPS). Université Laval, Sainte-Foy, Québec, Canada.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (1998). Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *Journal of Counseling Psychology, 45*, 304-314. doi: 10.1037/0022-0167.45.3.304

Rosenberg, M. (1979). *Conceiving the self.* New York: Basic Books.

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: Different concepts, different outcomes. *American Sociological Review*, *60*, 141-156.

Santanello, A. W., & Gardner, F. L. (2007). The role of experiential avoidance in the relationship between maladaptive perfectionism and worry. *Cognitive Therapy and Research, 31*, 319-332. doi: 10.1007/s10608-006-9000-6

Schwarz, G. (1978). Estimating the dimension of a model. *The Annals of Statistics, 6*, 461-464.

Selig, J. P., & Preacher, K. J. (2008, June). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [Computer software]. Available from http://quantpsy.org/.

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The Almost Perfect Scale-Revised. *Measurement and Evaluation in Counseling and Development, 34,* 130-145.

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, *30*, 201-212. doi: 10.1002/per.2053

Smith, M. M., Vidovic, V., Sherry, S. B., Stewart, S. H., & Saklofske, D. H. (2018). Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping*, *31*, 4-20. doi: 10.1080/10615806.2017.1384466

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology*, *13*, 290-312. doi: 10.2307/270723

Steiger, J.H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173-180. doi: 10.1207/s15327906mbr2502_4

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319. doi: 10.1207/s15327957pspr1004_2

Tafarodi, R. W., & Milne, A. B. (2002). Decomposing global self-esteem. *Journal of Personality, 70*, 443–483. doi: 10.1111/1467-6494.05017

Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). *Journal of Cross-Cultural Psychology*, *38*, 227-242. doi: 10.1177/0022022106297301

Vallieres, E. F., & Vallerand, R. J. (1990). Traduction et validation canadienne-française de l'échelle de l'estime de soi de Rosenberg. *International Journal of Psychology*, *25*, 305-316. doi: 10.1080/00207599008247865

Watson, D., & Clark, L. A. The PANAS-X: Manual for the positive and negative affect schedule–expanded form. University of Iowa; 1994. *Unpublished manuscript.*

Watson, D., Clark, L. A., & Stasik, S. M. (2011). Emotions and the emotional disorders: A quantitative hierarchical perspective. *International Journal of Clinical and Health Psychology*, *11,* 429-442.

Table 1. *Means, standard deviations, internal consistencies, and intercorrelations for measures of perfectionism, self-esteem, experiential avoidance, and negative affect and sadness.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Discrepancy	**.93**											
2. Conc. over Mistakes	.68***	**.91**										
3. Socially Prescribed	.53***	.55***	**.86**									
4. Personal Standards	.32***	.52***	.29***	**.82**								
5. Self-Oriented	.38***	.58***	.48***	.69***	**.90**							
6. High Standards	.34***	.37***	.24**	.76***	.66***	**.86**						
7. Self-Assessment	-.58***	-.45***	-.47***	-.02	-.13	.02	**.81**					
8. Self-Acceptance	-.74***	-.54***	-.55***	-.05	-.17*	-.08	.75***	**.86**				
9. Behav. Avoidance	.14	.08	.17*	-.05	.01	-.12	-.05	-.15	**.72**			
10. Distress Aversion	.23**	.23**	.33***	.00	.12	-.02	-.17*	-.27**	.79***	**.65**		
11. Negative Affect	.41***	.38***	.42***	.13	.16	.08	-.35***	-.42***	.25**	.36***	**.81**	
12. Sadness	.31***	.28**	.32***	.08	.20*	.09	-.17*	-.32***	.24**	.33***	.71***	**.91**
M	40.60	21.28	50.41	22.76	66.12	36.71	16.87	14.90	5.48	5.30	7.37	4.57
SD	16.43	8.72	14.85	5.99	16.94	8.22	2.80	3.82	2.26	2.31	2.39	1.99

Note. $n = 146$. Conc. = Concern. Behav. = Behavioral Avoidance.

Cronbach alphas are presented in bold on the diagonal.

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

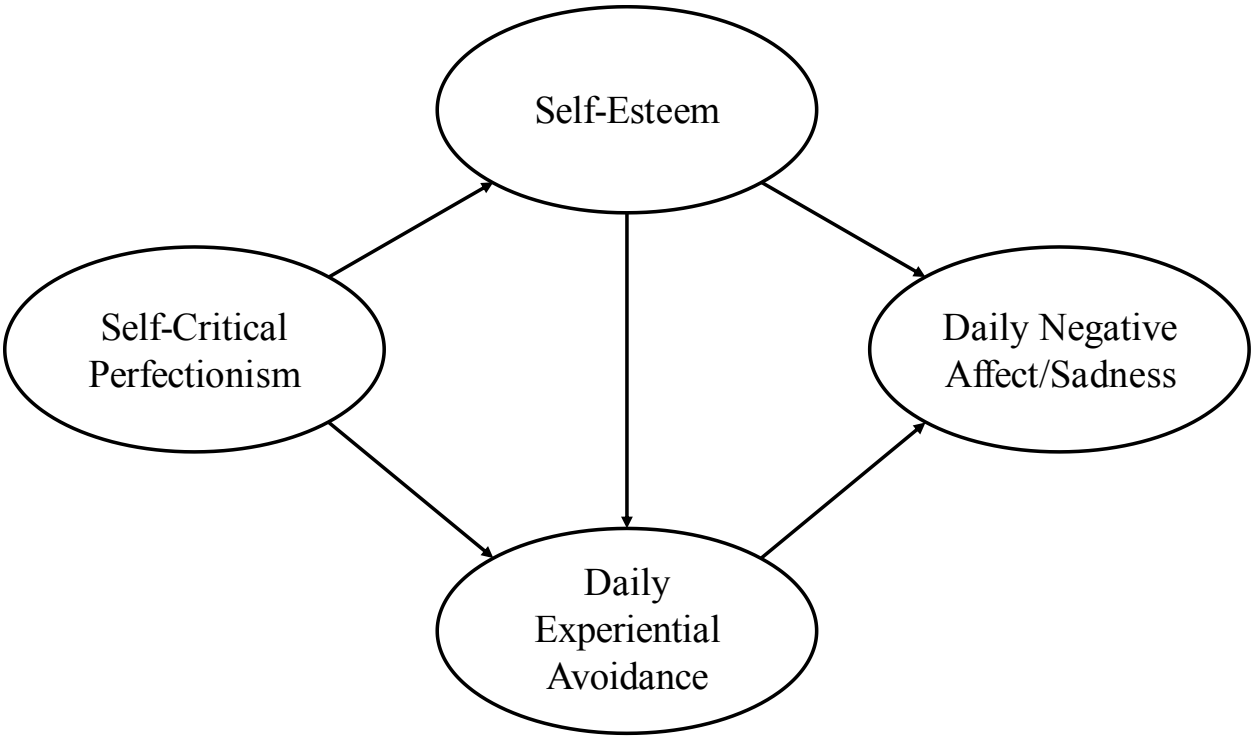

Figure 1. Hypothesized structural model relating self-critical perfectionism, self-esteem, aggregated daily experiential avoidance, and aggregated daily negative affect and sadness.

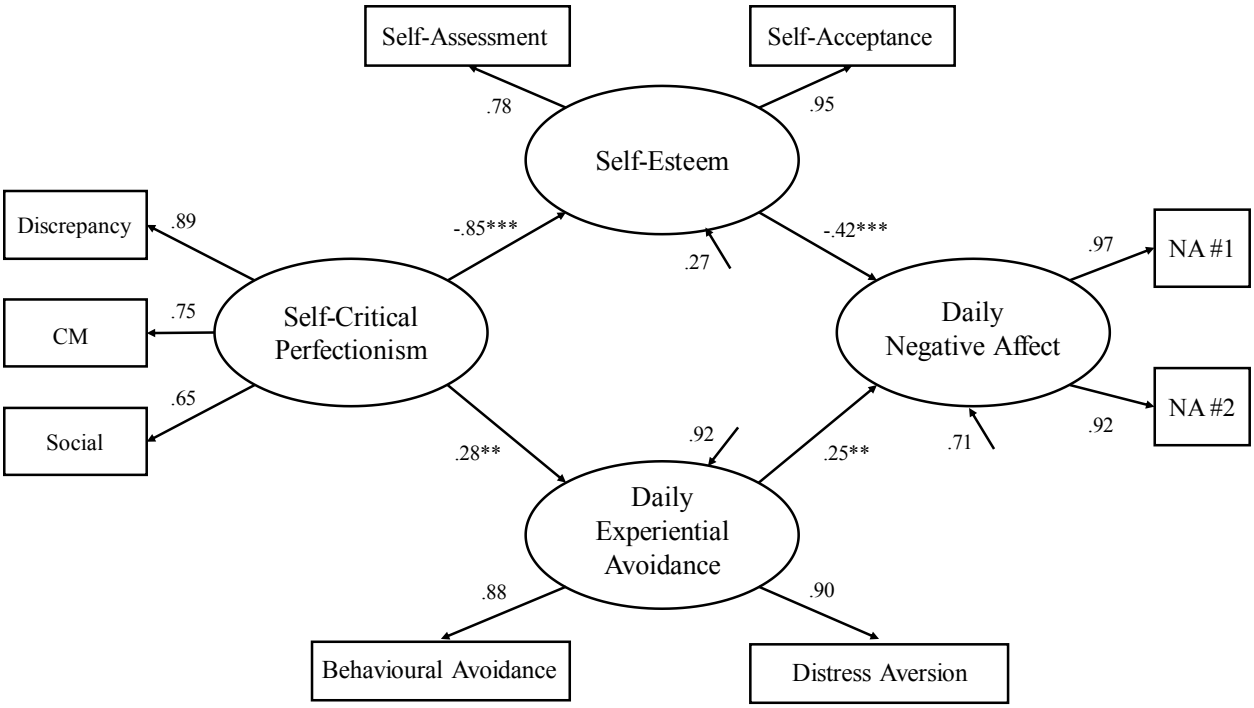

Figure 2. Standardized factor loadings and parameter estimates of the final structural model relating self-critical perfectionism, self-esteem, aggregated daily experiential avoidance, and aggregated daily negative affect. Latent variables are represented by oval-shaped line and measured variables are represented by rectangular-shaped line. The residual arrows denote the proportion of variance in the endogenous latent variable that was unaccounted for by other variables in the model. CM = concern over mistakes. Social = socially prescribed perfectionism. Note. *p < .05; **p < .01; ***p < .001. All factor loadings are significant at p < .001.

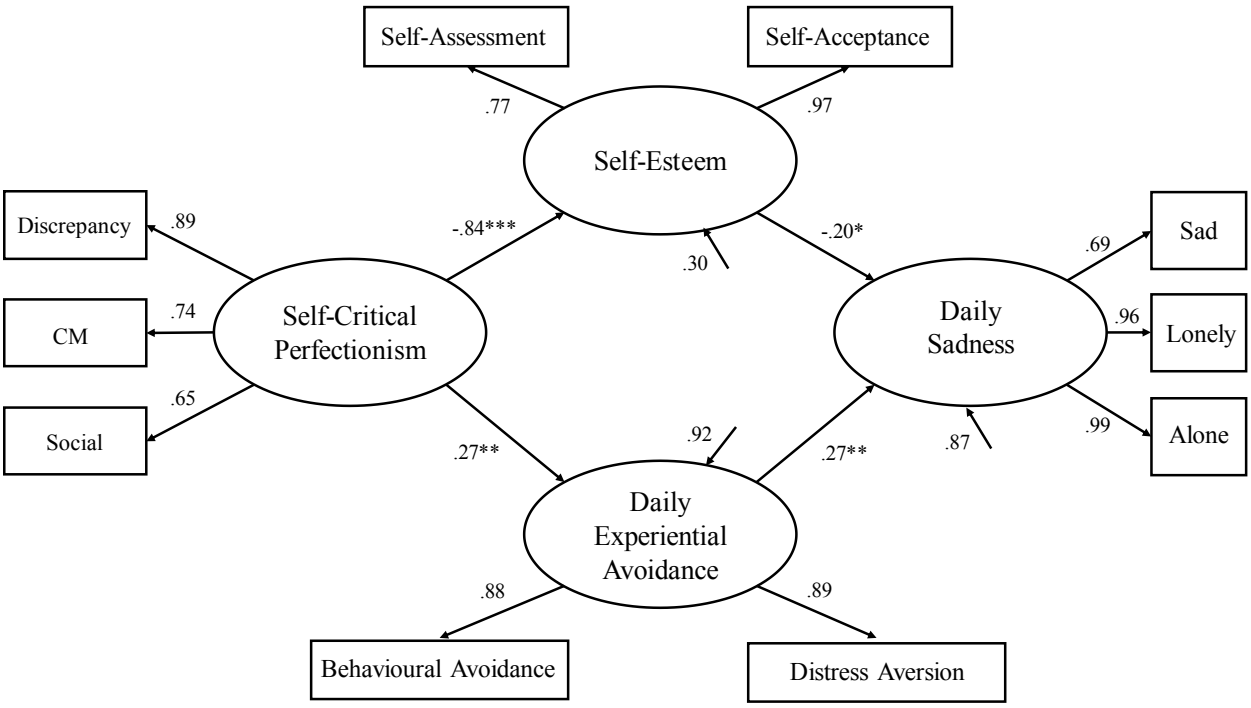

Figure 3. Standardized factor loadings and parameter estimates of the final structural model relating self-critical perfectionism, self-esteem, aggregated daily experiential avoidance, and aggregated daily sadness. Latent variables are represented by oval-shaped line and measured variables are represented by rectangular-shaped line. The residual arrows denote the proportion of variance in the endogenous latent variable that was unaccounted for by other variables in the model. CM = concern over mistakes. Social = socially prescribed perfectionism. Note. *p < .05; **p < .01; ***p < .001. All factor loadings are significant at p < .001.

Bridge to Article 3

Articles 1 and 2 aimed to address questions related to the explanatory mechanism of experiential avoidance in mediating the relationship between self-critical perfectionism and negative outcomes in samples of community adults. Results from Article 1 demonstrated that experiential avoidance mediated the cross-sectional relation between self-critical perfectionism and depressive symptoms, controlling for lower self-esteem. Results from Article 2 showed that aggregated daily experiential avoidance mediated the relation between self-critical perfectionism and aggregated daily negative affect and sadness, respectively, controlling for lower self-esteem.

Article 3 aimed to further broaden and extend these findings by examining the longitudinal relationship between self-critical perfectionism, experiential avoidance, and depressive and anxious symptoms, controlling for baseline neuroticism, in a sample of community adults. Article 3 examined the cross-lagged relations among these variables, which were each measured at three separate time points over a two-year period, controlling for baseline neuroticism. This repeated measures design with cross-lagged analysis allowed us to test for possible reciprocal relations among these variables, as well as to test for the possibility that depressive and anxious symptoms and/or experiential avoidance might influence self-critical perfectionism over time (scar model). The goal of Article 3 was to examine the longitudinal cross-lagged effects of self-critical perfectionism, experiential avoidance, and depressive and anxious, controlling for prior symptom levels and baseline neuroticism. Thus, Article 3 allowed for a more rigorous examination of these relations by taking into account the temporal precedence and autoregressive effects of these variables.

Article 3

Self-Critical Perfectionism, Experiential Avoidance, and Depressive and Anxious Symptoms Over Two Years: A Three-Wave Longitudinal Study

Molly Moroz and David M. Dunkley

Lady Davis Institute – Jewish General Hospital and McGill University

Moroz, M., & Dunkley, D.M. (2019). Self-critical perfectionism, experiential avoidance, and depressive and anxious symptoms over two years: A three-wave longitudinal study. *Behavior Research and Therapy, 112*, 18-27.

Abstract

This three-wave longitudinal study examined the relations among perfectionism, experiential avoidance, and depressive and anxious symptoms over two years. Community adults (N=173) completed self-report questionnaires assessing two higher-order perfectionism dimensions (self-critical [SC], personal standards [PS]), neuroticism, experiential avoidance, and depressive and anxious symptoms at Time 1, Time 2 one year later, and Time 3 two years later. Cross-lagged path analyses demonstrated that SC perfectionism predicted increases in experiential avoidance from Time 1 to Time 2 and again from Time 2 to Time 3. Experiential avoidance predicted increases in both depressive and anxious symptoms from Time 1 to Time 2 and again from Time 2 to Time 3. Time 2 experiential avoidance mediated the relation between Time 1 SC perfectionism and both depressive and anxious symptoms over two years, controlling for the effects of Time 1 neuroticism and prior symptom levels. Experiential avoidance did not mediate the relations between PS perfectionism and depressive/anxious symptoms over two years. These findings highlight the importance of targeting experiential avoidance in reducing vulnerability to depressive and anxious symptoms over the long-term in individuals with higher SC perfectionism.

Keywords: perfectionism, self-criticism, experiential avoidance, depression, anxiety, neuroticism

Self-Critical Perfectionism, Experiential Avoidance, and Depressive and Anxious Symptoms Over Two Years: A Three-Wave Longitudinal Study

Over the past three decades, research has demonstrated that perfectionism is an important transdiagnostic vulnerability factor for a variety of negative outcomes, including depressive and anxious symptoms (see Egan, Wade, and Shafran, 2011; Flett & Hewitt, 2002; Smith et al., 2016; Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018). Studies have established perfectionism as a multidimensional construct consisting of two higher-order dimensions, which we refer to as personal standards (PS) perfectionism and self-critical (SC) perfectionism. PS perfectionism entails the setting of and striving for excessively high standards and goals for the self. SC perfectionism involves constant and harsh self-scrutiny and critical self-evaluation of one's own behavior, and continuous worry about others' approval, criticism, and expectations (see Dunkley, Zuroff, & Blankstein, 2003). Previous research has established that, in contrast to PS perfectionism, SC perfectionism is more consistently related to negative outcomes such as depressive and anxious symptoms (see Dunkley, Blankstein, Masheb, & Grilo., 2006; Stoeber & Otto, 2006). Further, several studies have shown that SC perfectionism is a vulnerability factor for depressive and anxious symptoms over time (e.g., Mandel, Dunkley, & Moroz, 2015; for reviews see Smith et al., 2016; Smith et al., 2017). The SC perfectionism dimension has also been found to have a negative impact on the therapeutic process in addition to treatment outcomes (see Blatt & Zuroff, 2005; Kannan & Levitt, 2013). However, the mechanisms that mediate the relation between SC perfectionism and depressive and anxious symptoms are not well-understood. The present study examined the experiential avoidance facet of psychological inflexibility as a mediator of the relation between SC perfectionism and depressive and anxious symptoms over two years.

SC Perfectionism, Experiential Avoidance, and Depressive and Anxious Symptoms

Psychological inflexibility might help explain the vulnerability of individuals with higher SC perfectionism to depressive and anxious symptoms. A broader construct of the model of psychopathology described by Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), psychological inflexibility refers to the inability to cognitively adapt to challenging situations and to modify one's perspective and behavior in response to the changing demands of the environment (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Experiential avoidance is one facet of psychological inflexibility that involves the unwillingness to remain in contact with aversive private experiences, including bodily sensations, emotions, thoughts, memories, and behavioural predispositions (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Hayes and colleagues (1996) refer to experiential avoidance as a maladaptive strategy that often leads to actions that are inconsistent with one's goals and values. In contrast to experiential avoidance, acceptance is one facet of psychological flexibility that is demonstrated through a willingness to experience unwanted private events in order to persist in goal directed behavior based on one's chosen values (Hayes et al., 2006). Experiential avoidance has received increasing attention as a generalized vulnerability factor, and has been shown to be a fundamental aspect of mental health that cuts across many of the negative outcomes associated with SC perfectionism including depressive symptoms, anxiety, and general psychological ill-health (Kashdan, Barrios, Forsyth, & Steger, 2006; Kashdan & Rottenberg, 2010).

The notions of inflexibility and avoidance have been widely discussed in descriptions and features of maladaptive perfectionism, suggesting a possible relationship between self-critical perfectionism and experiential avoidance. Individuals with higher SC perfectionism often acquire dysfunctional attitudes stemming from childhood experiences. These self-critical

evaluative concerns have been theorized to develop in childhood in environments of disapproval, inconsistent approval, and/or conditional approval based on unreasonably high parental expectations, in combination with a harsh and punitive parenting style (e.g., Blatt, 1995; Hamachek, 1978; Flett, Hewitt, Oliver, & Macdonald, 2002). Such environments have been shown to foster doubt and uncertainty that any effort is ever good enough, and a sense of self-worth that is contingent on performance (e.g., Blatt & Homann, 1992).

These dysfunctional attitudes lead to a conceptualization of the self as being flawed, imperfect, and not good enough. When individuals with higher SC perfectionism become attached to the content of these self-descriptions, they are likely to elicit more frequent experiences about the perceived discrepancy between their actual self and ideal self (Flett, Hewitt, Blankstein, & Gray, 1998; Horney, 1950). For instance, Horney (1950) described how the use of should statements (e.g., "I should be perfect", "I should have done better") maintain this discrepancy, which may hinder the individual from flexibly observing and allowing these experiences to occur in order to obtain useful perspectives in guiding action. Given that individuals with greater SC perfectionism display chronic concerns about personal failure, loss of control, and perceived criticism, they tend to be reactive to any thought, image, or memory that activates these themes (Dunkley, Mandel, & Ma, 2014). This may contribute to preoccupations about needing to avoid situations and internal events that would reinforce such fears and negative conceptualizations of the self, possibly hindering the potential for attitudes of self-acceptance and self-compassion in the present moment.

Over time, individuals with higher SC perfectionism may develop tendencies towards experiential avoidance by becoming increasingly focused on the avoidance, suppression, or control of distressing negative self-referential thoughts and feelings. This is consistent with

theory suggesting that individuals with higher SC perfectionism demonstrate a desire to escape from unpleasant and distressing emotional states and engage in experiential avoidance to cope with their negative self-awareness (Heatherton & Baumeister, 1991; Santanello & Gardner, 2007). As such, these individuals are theorized to make attempts to avoid distress, self-critical thoughts, and opportunities for failure, and may give up or move away from the pursuit of important goals, instead of persisting or changing behavior in the service of chosen values (Santanello & Gardner, 2007; Hayes et al., 2006).

Overall, experiential avoidance might be a central construct in understanding the development, maintenance, and treatment of psychopathology for individuals with higher SC perfectionism. A number of mediation studies looking at the relation between SC perfectionism and a variety of negative outcomes have found preliminary support for the mediating role of experiential avoidance (Moroz & Dunkley, 2015; Santanello & Gardner, 2007) as well as other specific forms of avoidance, such as avoidant coping (Dunkley et al., 2003; 2016) and procrastination (see Sirois et al., 2017). However, many of these previous mediation studies have the shortcoming of being cross-sectional, which precludes drawing causal inferences. Examining these relations longitudinally is essential given that experiential avoidance and other forms of thought suppression and avoidance have been shown to produce short-term reductions in distress, but to produce harmful effects in the longer-term (Wenzlaff & Wegner, 2000; Hayes et al., 1996). This may be because attempts to control or avoid distressing internal experiences might actually increase and prolong these unwanted feelings and thoughts (Wenzlaff & Wegner, 2000). Yet, no study has provided a test of the theory of the longer-term negative impact of experiential avoidance in relation to higher SC perfectionism.

Differentiating Self-Critical Perfectionism and Experiential Avoidance from Neuroticism

Theoretical writings have described SC perfectionism as a specific neurotic style that is focused on issues of self-control, self-worth, and social avoidance (e.g., Blatt, 1995; Hamachek, 1978). Neuroticism is a broader personality vulnerability dimension that refers to a general dispositional tendency to experience higher levels of negative emotional states, such as depression and anxiety (e.g., Costa & McCrae, 1992). Barlow's unified protocol for transdiagnostic treatment of emotional disorders (see Barlow, Allen, & Choate, 2016) emphasizes neuroticism as an important target to reduce distress and vulnerability. As SC perfectionism and neuroticism are strongly related, there is a need to demonstrate the incremental validity of SC perfectionism over and above broader personality traits such as neuroticism (see Enns & Cox, 1997; Smith et al., 2016; Zuroff, Mongrain, & Santor, 2004). In addition, given that neuroticism has been found to be strongly associated with experiential avoidance (e.g., Latzman & Masuda, 2013), further investigation of the discriminant validity of measures of experiential avoidance from neuroticism is warranted (Rochefort, Baldwin, & Chmielewski, 2018). Previous studies have distinguished measures of SC from neuroticism by demonstrating unique relations with PS perfectionism, negative interpersonal characteristics (e.g., lower agreeableness, negative social interactions), avoidant coping, and depressive symptoms (e.g., Dunkley, Blankstein, & Berg, 2012; Dunkley, Mandel, et al., 2014; see Smith et al., 2016; Zuroff et al., 2004 for reviews). Research is needed to further distinguish SC perfectionism from neuroticism in relation to experiential avoidance.

The Present Study Aims and Hypotheses

The present study was the first to investigate the longitudinal relationships among SC perfectionism, experiential avoidance, and depression and anxiety symptoms over time. We employed a three-wave cross-lagged longitudinal design over two years to examine experiential

avoidance as a mediator in the relation between SC perfectionism and depressive and anxious symptoms, while controlling for the effects of Time 1 neuroticism. Multiple waves of data are recommended for testing mediational processes given the types of biases seen in cross-sectional analyses of longitudinal mediation (Maxwell & Cole, 2007). A multiwave longitudinal design in combination with a cross-lagged data analysis strategy allows for stronger causal inferences, as it takes into account temporal precedence while allowing for competing explanations, such as the possibility of reciprocal relations (Burkholder & Harlow, 2003). For instance, an argument could be made that greater experiential avoidance further increases the likelihood of failure experiences, which might contribute to increases in SC perfectionism over time. Furthermore, we examined the potential deleterious or "scar" effects of depressive and anxious symptoms on SC perfectionism and experiential avoidance over time (Rice & Aldea, 2006).

Based on the theory and previous findings described above, the present study hypothesized SC perfectionism as a vulnerability factor, where SC perfectionism confers increased risk for experiential avoidance and depressive and anxious symptoms (see Egan et al., 2011). Specifically, we used outcomes based on the tripartite model of depression and anxiety (Clark & Watson, 1991; Watson, 2009), and examined symptoms specific to depression (i.e., anhedonia) and anxiety (i.e., anxious arousal) in two models. We hypothesized predictive relations between SC perfectionism and experiential avoidance, and experiential avoidance and symptom outcomes, while controlling for the effects of each variable at previous time points. Further and of greatest interest, we hypothesized that Time 2 experiential avoidance would mediate the relation between Time 1 SC perfectionism and Time 3 specific symptoms of depression and anxiety, while controlling for the effects of Time 1 neuroticism and previous symptom levels. As the two higher-order perfectionism dimensions are strongly correlated, we

also tested our models with PS perfectionism in order to differentiate the effects of SC from PS perfectionism. We hypothesized that the study's models would be more specifically related to SC perfectionism, consistent with previous findings that have shown SC perfectionism to be more maladaptive than PS perfectionism (Dunkley, Blankstein, et al., 2006). The present study might have important clinical implications as many emerging therapeutic strategies employ self-acceptance and nonjudgmental mindfulness techniques with the goal of reducing experiential avoidance to diminish symptom severity. Given that individuals with higher SC perfectionism have exhibited poor outcomes in psychotherapy treatment for depression (Blatt & Zuroff, 2005), the findings from the current study might point to experiential avoidance as an important mediating mechanism that could be targeted to reduce the depressive and anxious symptoms experienced by these individuals.

Method

Participants

The present study presents analyses of the same sample of 210 community adults used in a previous study of the Time 1 measures (see Moroz & Dunkley, 2015). The current sample includes 192 English- and French-speaking employed, community adults, recruited through newspaper, bulletin, and internet advertisements in order to obtain a representative community sample from a bilingual North American city. One hundred eighteen participants (81 female, 37 male) completed the English version of the questionnaires, and 74 participants (45 female, 29 male) completed the French version of the questionnaires. The mean age of the sample at Time 1 was 40.10 years (SD = 14.23). Participants were largely of European descent (69.3%), with 8.3% Asian, 7.3% South American, 4.7% African, 3.6% East Indian, 2.6% Middle Eastern, 0.5% Aboriginal, and 3.6% identified as either multi-ethnic or unspecified.

Procedure

The study involved completion of a package of self-report questionnaires at three separate time points. Participants completed measures of perfectionism, experiential avoidance, neuroticism, and depressive and anxious symptoms at Time 1, and completed the measures of perfectionism, experiential avoidance, and depressive and anxious symptoms at Time 2 approximately one year from baseline (M = 11.84 months, SD = .91 months) and at Time 3 approximately two years from baseline (M = 23.61 months, SD = .71 months). Questionnaires took approximately 1.5 to 2 hours to complete in in-lab sessions. Participants were compensated $25 to complete the questionnaires at each time point.

Measures

SC and PS perfectionism. SC and PS perfectionism latent factors were derived from selected scales from the short form versions of the Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990), the Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976), and the Revised Almost Perfect Scale (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Although the full version of perfectionism questionnaires were completed at Time 1, only the brief version items were used to be consistent with the short form (SF) versions of the FMPS (Cox, Enns, & Clara, 2002), the HMPS (Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008), the APS-R (Rice, Richardson, & Tueller, 2014), and the DEQ (Rudich, Lerman, Gurevich, Weksler, & Shahar, 2008) that were administered at Time 2 and 3. Based on previous factor analytic findings (Dunkley, Ma, Lee, Preacher, & Zuroff, 2014; see Stoeber & Otto, 2006, for a review), SC perfectionism was indicated by the 5-item FMPS-SF concern over mistakes subscale (e.g., If I fail at work/school, I am a failure as a

person"), the 5-item HMPS-SF socially prescribed perfectionism subscale (e.g., "Although they may not show it, other people get very upset with me when I slip up"), the 4-item APS-R-SF discrepancy subscale (e.g., "Doing my best never seems to be enough"), and the 6-item DEQ-SF self-criticism subscale (e.g., "I tend to be very critical of myself"). PS perfectionism was indicated by the 5-item FMPS-SF personal standards subscale (e.g., "I set higher goals than most people"), the 5-item HMPS-SF self-oriented perfectionism subscale (e.g., "I strive to be as perfect as I can be"), and the 4-item APS-R-SF high standards subscale (e.g., "I expect the best from myself").

Reliability and validity for the short-form subscales of the FMPS, HMPS, APS-R, and DEQ have been previously established with coefficient alphas ranging from .73 to .87 (see Cox et al., 2002; Rice et al., 2014; Rudich et al., 2008). Coefficient alphas in the present study for FMPS-SF concern over mistakes, HMPS-SF socially prescribed perfectionism, APS-R-SF discrepancy, DEQ-SF self-criticism, FMPS-SF personal standards, HMPS-SF self-oriented perfectionism, and APS-R-SF high standards ranged from .74 to .90 across Time 1, Time 2, and Time 3. Standardized factor loadings for the SC and PS perfectionism indicators have previously ranged from .66 to .90 for the indicators of SC perfectionism and from .83 to .88 for the indicators of PS perfectionism (Dunkley, Ma, et al., 2014). Studies have supported the convergent and discriminant validity of higher-order perfectionism dimensions in hypothesized relations with other personality measures and psychological (mal)adjustment (e.g., Dunkley et al., 2003; Dunkley, Ma, et al., 2014; see Stoeber & Otto, 2006).

Experiential avoidance. Experiential avoidance was measured using the Acceptance and Action Questionnaire-II (AAQ-II; Bond, Hayes, et al., 2011). The AAQ-II is a widely used measure of experiential avoidance and was created in an attempt to address the poor

psychometric properties of the original AAQ (Bond et al., 2011). The AAQ-II includes seven items (e.g., "I'm afraid of my feelings", "Worries get in the way of my success") measured on a 1 (never true) to 5 (always true) scale. The AAQ-II has good internal consistency (mean alpha coefficient of .84) and stable psychometric properties including 3- and 12-month test-retest reliability of .81 and .79, respectively, as well as adequate convergent, incremental, and discriminant validity (Bond et al., 2011). Internal consistencies for the current study were .88, .88, .89 at Time 1, Time 2, and Time 3, respectively (see Table 1).

Depressive and anxious symptoms. Depressive and anxious symptoms were measured using the Mood and Anxiety Symptom Questionnaire Short Form (MASQ; Watson & Clark, 1991). The MASQ is a 62-item self-report questionnaire that includes four separate scales. Two of the four scales encompass the general aspects of depressive and anxious symptoms, which are referred to as 'general distress depressive symptoms' (GDD; 12 items; e.g., "Felt pessimistic about the future") and 'general distress anxious symptoms' (GDA; 11 items; e.g., "Was unable to relax"). The other two scales focus more on the specific aspects of depression and anxiety. These two measures are referred to as anhedonic depression (AD; 22 items; e.g., "Felt like it took extra effort to get started") and anxious arousal (AA; 17 items; e.g., "Was trembling or shaking"). Acceptable internal consistency and good convergent and discriminant validity has been found for the MASQ scales (Watson et al., 1995). As the general symptoms subscales (GDD, GDA) are strongly correlated with AD and AA (e.g., Watson et al., 1995), we used the AD and AA subscales as outcomes to capture the unique aspects of depression and anxiety. The coefficient alphas for AD and AA in the current study ranged from .84 to .93 across Time 1, Time 2, and Time 3 (see Table 1).

Neuroticism. Neuroticism was assessed at Time 1 using the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992). The NEO-FFI is a 60-item self-report questionnaire that assesses the five-factor model of personality, including the 12-item neuroticism domain scale (e.g., "I often feel tense and jittery", "Sometimes I feel completely worthless"). Costa and McCrae (1992) reported extensive evidence supporting the internal consistency and temporal stability of the neuroticism scale, and the alpha coefficient for the current study was .87 at Time 1. The convergent and discriminant validity has been exhibited in expected relations with other personality measures and psychological (mal)adjustment (see Costa & McCrae, 1992).

Questionnaire packages were available in both English and French given that the population was bilingual. French versions of the FMPS (Rhéaume et al., 1994), HMPS (Labrecque, Stephenson, Boivin, & Marchand, 1998), DEQ (Boucher, Cyr, & Fortin, 2006), and APS-R (Kyparissis, Pierre, Goldsmith, & Dunkley, 2006) were administered to the French participants in this study. The French translations of the perfectionism measures have been found to have similar internal consistencies and validity as the original English versions (see Dunkley, Blankstein, et al., 2012). Waintraub, Delalleau, Lavergne, and Bertrand's (1997) French translation of the MASQ was administered to the community adults completing the study in French. The French version of the MASQ has demonstrated comparable internal consistencies and validity as the original English version (see Dunkley, Blankstein, et al., 2012). Experiential avoidance was measured using a French translation of the AAQ-II (Monestès, Villatte, Mouras, Loas, & Bond, 2009) that demonstrates good internal consistency (Cronbach alphas .76 – .82), test-retest reliability, and validity that are also comparable to the original English measure. A validated French translation of the NEO-FFI (Rolland & Petot, 1998) was administered to French-speaking participants. The French NEO-FFI was found to be largely equivalent to the

original English language version (Rolland, Parker, & Stumpf, 1998; see Dunkley, Mandel, & Ma, 2014; Dunkley, Blankstein, et al., 2012).

Model Testing

Structural equation modeling was performed using Analysis of Momentary Structure 5.0 (AMOS Version 5.0; Arbuckle, 2003) to test the longitudinal cross-lagged effects between SC perfectionism, experiential avoidance, and symptoms of depression and anxiety. Cross-lagged analyses allow for the simultaneous exploration of cross-lagged effects, specifically, the vulnerability effect that SC perfectionism demonstrates in relation to depressive and anxious symptoms through experiential avoidance as well as any reciprocal relations among these variables over time. By using a cross-lagged modeling technique, the pattern of effects is conceptually replicated at each time point. The current study used cross-lagged analysis to attempt to identify causal predominance, which occurs when one variable influences other variables without the additional reciprocal influence (Burkholder & Harlow, 2003).

Two separate models were tested with each of anhedonic depression and anxious arousal. In each model, Time 1 SC perfectionism predicted experiential avoidance and AD/AA at Time 2, Time 1 experiential avoidance predicted SC perfectionism and AD/AA at Time 2, and Time 1 AD/AA predicted SC perfectionism and experiential avoidance at Time 2. Subsequently, Time 2 SC perfectionism predicted experiential avoidance and AD/AA at Time 3, Time 2 experiential avoidance predicted SC perfectionism and AD/AA at Time 3, and Time 2 AD/AA predicted SC perfectionism and experiential avoidance at Time 3. Time 1 neuroticism was included as a covariate with the other Time 1 variables, and predicted Time 2 and Time 3 SC perfectionism, experiential avoidance, and AD/AA. We also controlled for first-order autoregressive paths (i.e., stability paths from Time 1 to Time 2 and from Time 2 to Time 3 for all variables) and second-

order autoregressive paths (i.e., stability paths from Time 1 to Time 3 for all variables; Geiser, 2013), as well as correlations between residuals of the SC perfectionism latent factor, experiential avoidance, and AD/AA, within Time 2 and Time 3, respectively. The residuals of each of the four indicators of SC perfectionism were allowed to correlate across time points.

Consistent with Hoyle and Panter's (1995) recommendations, we considered multiple indexes to evaluate model fit. We considered the ratio of the chi-square value to the degrees of freedom in the model (absolute fit), with ratios in the range of 2 to 1 suggesting better fitting models (see Carmines & McIver, 1981). We also considered the incremental-fit index (IFI; Bollen, 1989; incremental fit), and the comparative-fit index (CFI; Bentler, 1990; incremental fit), with values .90 or over indicating better fitting models (see Hoyle & Panter, 1995). In addition, we considered the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990; parsimony-adjusted fit), with values of .08 or less indicating adequate fit (Browne & Cudeck, 1993). For each of the AD and AA models, we compared two submodels to test whether the cross-lagged effects were time invariant. In Models 1.1 and 2.1 the six cross-lagged paths were constrained to be equal across time (i.e., fixed), whereas in Models 1.2 and 2.2 the cross-lagged paths were unconstrained (i.e., free to vary). Model comparison was based on three criteria of changes in fit indices: $\Delta\chi^2$ significant at $p < .05$, $\Delta CFI \geq -.010$, and $\Delta RMSEA \geq .015$ (Chen, 2007; Cheung & Rensvold, 2002). If the constrained model does not differ from the unconstrained model based on these criteria, the constrained model is preferred as a more parsimonious model.

Indirect effects were tested using the Monte Carlo Method (see MacKinnon, Lockwood, & Williams, 2004; Preacher & Selig, 2012) for assessing mediation. We used Selig and Preacher's (2008) web-based utility to generate and run R code for simulating the sample

distribution of an indirect effect. Unstandardized path estimates, asymptotic covariance estimates, a 95% confidence level, and 20,000 bootstrap samples created by randomly sampling and replacing the original data were entered to compute confidence intervals (CI). If the CI did not include zero, the indirect effect was considered statistically significant at the $p < .05$ level.

Results

Descriptive Statistics

Out of the 192 participants, 173 participants completed all three time points, 6 participants completed Time 1 and Time 2 measures, and 13 participants completed Time 1 and Time 3 measures. The full information maximum likelihood (FIML) robust estimator in Amos version 5.0 was used to handle missing data, as this method provides less biased estimates relative to other methods for handling missing data (see Schlomer, Bauman, & Card, 2010). Table 1 reports the means, standard deviations, intercorrelations, and internal consistencies of the SC perfectionism, neuroticism, experiential avoidance, anhedonic depression, and anxious arousal variables. Since the present sample was a subset of an original sample of 210 participants, *T* tests were performed comparing the means of the Time 1 perfectionism, neuroticism, experiential avoidance, and outcome variables. Results from the six *T* tests revealed that there were no significant differences between the current study's subsample of 192 participants and the additional 18 participants from the original sample. We also conducted independent samples *T* tests for each variable (i.e., SC and PS perfectionism, neuroticism, experiential avoidance, AD, AA) at each time point to compare means between those who completed the measures in English (n = 118) versus French (n = 74). Of the 16 *T* tests, no mean differences were found between participants who completed the measures in English compared to those who completed the measures in French.

Amos 5.0 was used to estimate intercorrelations among two latent factors (SC and PS perfectionism) and four measured variables (experiential avoidance, neuroticism, anhedonic depression, anxious arousal). As shown in Table 1, test–retest correlations ranged from .42 to .92, supporting reliability. SC perfectionism, neuroticism, and experiential avoidance were strongly intercorrelated, and exhibited moderate to strong positive intercorrelations with anhedonic depression and anxious arousal within and across time points. SC perfectionism also exhibited moderate to strong positive intercorrelations with PS perfectionism within time points (rs from .45 to .55). In contrast to SC, PS perfectionism exhibited weak, negligible, or inverse correlations with neuroticism (rs from -.05 to .03), experiential avoidance (rs from -.03 to .07), anhedonic depression (rs from -.19 to .05), and anxious arousal (rs from -.06 to .11), both within and between time points.

Cross-Lagged Analyses

To examine the longitudinal relationships between SC perfectionism, experiential avoidance, and symptoms of depression and anxiety, we tested two autoregressive cross-lagged models composed of Time 1, Time 2, and Time 3 SC perfectionism, experiential avoidance, and each of the two outcome measures (i.e., anhedonic depression, anxious arousal), with Time 1 neuroticism as a covariate.

SC perfectionism, experiential avoidance, and anhedonic depression model. We tested cross-lagged effects between SC perfectionism, experiential avoidance, and anhedonic depression, with Time 1 neuroticism as a covariate. The time-invariant Model 1.1 with the six cross-lagged paths constrained to be equal across time had acceptable fit indices: χ^2 (114, N = 192) = 161.22, $p < .01$; χ^2/df = 1.41; IFI = .98; CFI = .98; RMSEA = .047. Comparing Model 1.1 with the time-variant Model 1.2, where the six cross-lagged paths were free to vary, did not

result in a significant difference (χ^2_{diff}(6, N = 192) = 2.95, *ns*; ΔCFI = .00; ΔRMSEA = -.002), demonstrating that both models fit the data equally well. Therefore, the time-invariant Model 1.1 was retained as the final model as it represents the more parsimonious model.

Figure 1 displays Model 1.1, with only the estimates of significant paths shown. The nonsignificant paths were estimated and retained in the model, but the estimates were omitted from the figure only for presentational clarity and are reported below instead. All standardized factor loadings for the SC perfectionism latent factor were significant ($p < .001$), and ranged from .74 to .80 for FMPS-SF concern over mistakes, .64 to .67 for HMPS-SF socially-prescribed perfectionism, .79 to .86 for APS-R-SF discrepancy, and .77 to .81 for DEQ-SF self-criticism across time points. All first order autoregressive paths for each of SC perfectionism, experiential avoidance, and AD were significant, as well as the second order autoregressive path from Time 1 SC perfectionism to Time 3 SC perfectionism, whereas the second order autoregressive paths for experiential avoidance ($\beta = .12$) and AD ($\beta = .07$) were nonsignificant. Time 1 neuroticism significantly predicted increases in Time 2 AD only, and demonstrated nonsignificant relations with Time 2 ($\beta = .02$) and Time 3 ($\beta = .04$) SC perfectionism, Time 2 ($\beta = -.09$) and Time 3 ($\beta = .11$) experiential avoidance, and Time 3 AD ($\beta = .15$).

Cross-lagged results demonstrated that Time 1 SC perfectionism predicted increases in Time 2 experiential avoidance, and Time 2 SC perfectionism predicted increases in Time 3 experiential avoidance, controlling for the autoregressive effects of experiential avoidance and AD as well as the effects of Time 1 neuroticism. Results also revealed that Time 1 experiential avoidance predicted increases in Time 2 AD, and Time 2 experiential avoidance predicted increases in Time 3 AD, controlling for the autoregressive effects of AD and the effects of Time 1 neuroticism. While the significant cross-lagged effects are small, they are meaningful when

predicting relative changes in longitudinal autoregressive models, because controlling for autoregressive paths removes a great amount of the variance to be predicted in the outcome variables (see Adachi & Willoughby, 2015). Of most interest, the relation between Time 1 SC perfectionism and Time 3 AD was mediated by Time 2 experiential avoidance. The 95% CI supported the significance of the indirect effect of Time 1 SC perfectionism to Time 3 AD through Time 2 experiential avoidance (CI = 0.036, 0.252). Nonsignificant paths from Time 1 SC perfectionism to Time 2 AD (β = -.07) and from Time 2 SC perfectionism to Time 3 AD (β = -.06) demonstrated that SC perfectionism did not directly predict increases in AD over two years.

Nonsignificant paths from Time 1 experiential avoidance (β = -.03) and Time 1 AD (β = -.03) to Time 2 SC perfectionism and from Time 2 experiential avoidance (β = -.02) and Time 2 AD (β = -.02) to Time 3 SC perfectionism demonstrated that these variables did not predict increases in SC perfectionism over two years, controlling for the autoregressive effects of SC perfectionism over time. Nonsignificant paths from Time 1 AD to Time 2 experiential avoidance (β = .06) and from Time 2 AD to Time 3 experiential avoidance (β = .05) demonstrated that AD did not predict increases in experiential avoidance over two years.

SC perfectionism, experiential avoidance, and anxious arousal model. Next, we tested a second model with SC perfectionism, experiential avoidance, and anxious arousal, with Time 1 neuroticism as a covariate. The time-invariant Model 2.1 had the following acceptable fit indices: χ^2 (114, N = 192) = 170.83, $p < .001$; χ^2/df = 1.50; IFI = .98; CFI = .98; RMSEA = .051. Comparing Model 2.1 with the time-variant Model 2.2 did not result in a significant difference (χ^2_{diff} (6, N = 192) = 4.83, *ns*; ΔCFI = .00; ΔRMSEA = -.002), demonstrating that both models fit the data equally well. Therefore, the time-invariant Model 2.1 was retained as the final model because it was more parsimonious.

Figure 2 displays Model 2.1, with only the estimates of significant paths shown. The nonsignificant paths were estimated and retained in the model, but the estimates were omitted from the figure only for presentational clarity and are reported below instead. All first order autoregressive paths for each of SC perfectionism, experiential avoidance, and AA were significant, as well as the second order autoregressive path from Time 1 AA to Time 3 AA, whereas the second order autoregressive paths for SC perfectionism (β = .30) and experiential avoidance (β = .14) were nonsignificant. Time 1 neuroticism demonstrated nonsignificant relations with Time 2 (β = .02) and Time 3 (β = .04) SC perfectionism, Time 2 (β = -.08) and Time 3 (β = .13) experiential avoidance, and Time 2 (β = .04) and Time 3 (β = .07) AA.

Cross-lagged results demonstrated that Time 1 SC perfectionism predicted increases in Time 2 experiential avoidance, and Time 2 SC perfectionism predicted increases in Time 3 experiential avoidance, controlling for the autoregressive effects of experiential avoidance and AA as well as the effects of Time 1 neuroticism. Results also revealed that Time 1 experiential avoidance predicted increases in Time 2 AA, and that Time 2 experiential avoidance predicted increases in Time 3 AA, controlling for the autoregressive effects of AA as well as the effects of Time 1 neuroticism. Of most interest, the relation between Time 1 SC perfectionism and Time 3 AA was mediated by Time 2 experiential avoidance (see Figure 2). The 95% CI supported the significance of the indirect effect of Time 1 SC perfectionism to Time 3 AA through Time 2 experiential avoidance (CI = 0.006, 0.097). Nonsignificant paths from Time 1 SC perfectionism to Time 2 AA (β = -.10) and from Time 2 SC perfectionism to Time 3 AA (β = -.11) demonstrated that SC perfectionism did not directly predict increases in AA over two years.

Nonsignificant paths from Time 1 experiential avoidance (β = -.05) and Time 1 AA (β = .02) to Time 2 SC perfectionism and from Time 2 experiential avoidance (β = -.04) and Time 2

AA (β = .02) to Time 3 SC perfectionism demonstrated that these variables did not predict increases in SC perfectionism over two years, controlling for the autoregressive effects of SC perfectionism over time. Nonsignificant paths from Time 1 AA to Time 2 experiential avoidance (β = .03) and from Time 2 AA to Time 3 experiential avoidance (β = .04) demonstrated that AA did not predict increases in experiential avoidance over two years.

Supplementary Analyses

We conducted the same cross-lagged path analyses with the PS perfectionism latent factor entered in the model instead of SC perfectionism. The full results of the supplementary analyses are reported in the online supplement. All standardized factor loadings for the PS perfectionism latent factor were significant ($p < .001$), and ranged from .89 to .90 for FMPS-SR personal standards, .76 to .79 for HMPS-SF self-oriented perfectionism, and from .88 to .91 for APS-R-SF high standards across time points. PS perfectionism was not related to experiential avoidance and outcome measures from Time 1 to Time 2, nor from Time 2 to Time 3. In addition, the indirect effects from Time 1 PS perfectionism to Time 3 AD/AA, respectively, through Time 2 experiential avoidance were all non-significant (CI = -0.008, 0.101; CI = -0.005, 0.029).

Discussion

The present three-wave, longitudinal study substantially advanced previous cross-sectional studies demonstrating experiential avoidance as a mediator of the relation between SC perfectionism and distress outcomes (e.g., Moroz & Dunkley, 2015; Santanello & Gardner, 2007). Our results demonstrated that experiential avoidance mediated the relation between SC perfectionism and both symptoms of depression and anxiety over a 2-year period, controlling for the effects of Time 1 neuroticism.

Our longitudinal cross-lagged results demonstrated that SC perfectionism predicted increases in experiential avoidance from both Time 1 to Time 2 and Time 2 to Time 3, while controlling for previous levels of neuroticism and symptom outcomes (see Figures 1 and 2). Though SC perfectionism and neuroticism are closely related, these findings suggest that experiential avoidance is a unique maladaptive characteristic associated with SC perfectionism, in addition to other forms of avoidance (i.e., avoidant coping), negative interpersonal characteristics, and depressive symptoms (e.g., Dunkley et al., 2014; see Smith et al., 2016; Zuroff et al., 2004 for reviews). This is in line with notions that individuals with higher SC perfectionism make attempts to avoid or escape from aversive self-awareness as it serves to diminish the negative impact of their harsh self-critical evaluations and concerns about negative perceptions by others (Heatherton & Baumeister, 1991; Santanello & Gardner, 2007). One possible explanation for why experiential avoidance might increase from year to year in individuals with higher SC perfectionism is that they may experience short-term relief of distress (Hayes et al., 1996), ultimately reinforcing their experiential avoidance over time.

Furthermore, experiential avoidance predicted increases in anhedonic depressive symptoms (Figure 1) and anxious arousal (Figure 2) from both Time 1 to Time 2 and Time 2 to Time 3, respectively, while controlling for Time 1 neuroticism. This finding builds on previous research that conceptualizes experiential avoidance as a generalized vulnerability factor that confers transdiagnostic risk (Kashdan et al., 2006). Further, though experiential avoidance and neuroticism are strongly related, our results demonstrate that the effects of experiential avoidance, as measured by the AAQ-II, cannot be simply thought of in terms of neuroticism. Our findings are consistent with notions that attempts to control or avoid distressing internal experiences often increase and prolong these unwanted feelings and thoughts, leading to further

distress over time (Wenzlaff & Wegner, 2000). Furthermore, these results suggest that what we resist or attempt to avoid has the paradoxical effect of not only maintaining symptom levels but producing increased distress and symptoms in the longer-term. This might be because non-acceptance of distress may derail an individual from adapting to situational demands and instead to concentrate efforts on the experiential avoidance of their distress, leading to greater experiences of symptoms of depression and anxiety (Hayes et al., 2006).

The current study's design also allowed for the examination of potential reciprocal relations or "scar" effects of depressive and anxious symptoms on subsequent SC perfectionism and experiential avoidance. Our results did not find support for scarring effects, which conceptualizes changes in personality traits as being a consequence of preexisting symptoms, as depressive and anxious symptoms did not predict changes in perfectionism or experiential avoidance over time. This finding is consistent with research that supports SC perfectionism and experiential avoidance as vulnerability factors (e.g., Rice & Aldea, 2006; Hawley, Ho, Zuroff, & Blatt, 2006; Kashdan et al., 2006).

In contrast to SC perfectionism, PS perfectionism was not significantly related to neuroticism, experiential avoidance, and depressive and anxious symptoms. This is consistent with previous research highlighting that SC perfectionism represents the more maladaptive dimension of perfectionism (see Dunkley, Blankstein, Masheb, et al., 2006; Stoeber & Otto, 2006). This finding suggests that having high personal standards does not individually contribute to greater experiential avoidance. Rather, it is the negative self-evaluative features of higher SC perfectionism that appear to perpetuate experiential avoidance over time.

Overall, the results from the present longitudinal study demonstrate a crucial test of the theory that avoidance and suppression strategies have harmful effects in the longer-term for

individuals with higher SC perfectionism. The results provide compelling support for the notion that individuals with higher SC perfectionism are more vulnerable to depressive and anxious symptoms because of their unique tendency to engage in experiential avoidance. These findings help explain why these individuals are vulnerable to both depression and anxiety as they make attempts to avoid depressive symptoms characterized by themes of defeat, helplessness, and withdrawal, as well as anxious symptoms related to fears of criticism, judgment, and rejection from others (Cantazaro & Wei, 2010; Dunkley, Berg, & Zuroff, 2012). Thus, their experiential avoidance and maladaptive strategies of dealing with their depressive and anxious symptoms, in turn, seem to exacerbate them over time.

Clinical Implications

The results from the current study have important clinical implications as research has shown that individuals with higher SC perfectionism demonstrate a poor response to traditional treatments targeting depressive and anxious symptoms (Blatt & Zuroff, 2005; Kannan & Levitt, 2013). Additionally, addressing individuals' perfectionism directly in therapy may be met with resistance (Lundh, 2004). Our findings indicate that employing interventions aimed at decreasing experiential avoidance may be particularly beneficial for individuals with greater SC perfectionism in reducing symptoms over time. Third-wave therapies, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) as well as Dialectical Behavior Therapy (DBT; Linehan, 1993), teach individuals to abandon attempts to control or avoid thoughts and feelings, and instead to observe inner experiences nonjudgmentally and accept them as they are, while changing behavioral responses in constructive and values-driven ways. The strategies employed in ACT and DBT, such as mindfulness and distress tolerance techniques and acceptance-based

strategies, might help individuals with greater SC perfectionism to develop more self-acceptance, without necessarily confronting the individuals' perfectionistic beliefs directly.

Limitations and Future Directions

Although the present methodology offered advances over previous studies, limitations of this study should be addressed and areas for future research should be discussed. Experiential avoidance was measured using the AAQ-II, which has been criticized for being closely related to distress measures (Wolgast, 2014). It would be of interest to replicate these findings with the Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez, Chmielewski, Kotov, Ruggero, & Watson, 2011), which has been recommended as a more promising measure of experiential avoidance than the AAQ-II (Rochefort et al., 2018; Wolgast, 2014). Additionally, the present study focused on the examination of experiential avoidance, which represents one facet of psychological inflexibility. It would be important for future research to examine other dimensions of the broader construct of psychological inflexibility (e.g., cognitive fusion, focus on past and future) and other relevant constructs (e.g., anxiety sensitivity, intolerance of uncertainty) to be tested against experiential avoidance in the same study. Further, this study's findings are based on self-report questionnaires and therefore susceptible to recall biases and distortions inherent in this type of methodology. It would be beneficial to replicate these findings using repeated-measures methodology with less retrospection, such as daily diaries or an experience sampling method (see Dunkley, Berg, & Zuroff, 2012). Given that our study consisted of nonclinical community adults, it is important to examine the generalizability of our findings to clinical samples. Future studies would benefit from examining the relations among SC perfectionism, experiential avoidance, and negative outcomes in clinical samples (e.g., individuals with clinical depression, GAD, or eating disorders). It would also be of interest to test

whether specific third wave psychotherapies (e.g., Acceptance and Commitment Therapy, Dialectical Behavior Therapy, Mindfulness-Based Cognitive Therapy) would be effective in the treatment of depression and anxiety in individuals with greater SC perfectionism.

Conclusions

In conclusion, the present findings demonstrate the importance of experiential avoidance as a mediator in the relationship between SC perfectionism and symptoms of depression and anxious over time. This longitudinal study illustrated that higher SC perfectionism coupled with greater experiential avoidance accounted for increases in symptoms of depression and anxiety over 2 years, while controlling for neuroticism and previous symptom levels. These findings highlight the potential for acceptance and distress tolerance interventions aimed at decreasing experiential avoidance to be useful in symptom reduction in individuals with higher SC perfectionism.

References for Article 3

Adachi, P., & Willoughby, T. (2015). Interpreting effect sizes when controlling for stability effects in longitudinal autoregressive models: Implications for psychological science. *European Journal of Developmental Psychology, 12*, 116–128. doi: 10.1080/17405629.2014.963549

Arbuckle, J. L. (2003). AMOS 5.0. *Chicago, IL: Smallwaters*.

Barlow, D. H., Allen, L. B., & Choate, M. L. (2016). Toward a unified treatment for emotional disorders–republished article. *Behavior Therapy*, *47*, 838-853. doi:10.1016/S0005-7894(04)80036-4

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238-246. doi: 10.1037/0033-2909.107.2.238

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist*, *50*, 1003-1020. doi: 10.1037/0003-066x.50.12.1003

Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology, 85*, 383–389. doi: 10.1037/0021-843X.85.4.383

Blatt, S. J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self-critical depression. *Clinical Psychology Review*, *12*, 47-91. doi: 10.1016/0272-7358(92)90091-L

Blatt, S. J., & Zuroff, D. C. (2005). Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clinical Psychology Review*, *25*, 459-486. doi: 10.1016/j.cpr.2005.03.001

Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods and Research*, *17*, 303-316. doi: 10.1177/0049124189017003004

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K.,…Zettle, R. D. (2011). Preliminary psychometric properties of the acceptance and action questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42,* 676-688. doi: 10.1016/j.beth.2011.03.007

Boucher, S., Cyr, M., & Fortin, A. (2006). Propriétés psychométriques d'une version canadienne-française du Questionnaire des expériences dépressives. *Canadian Journal of Behavioural Science*, *38*, 230-237. doi: 10.1037/cjbs2006010

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), Testing structural equation models (pp. 136–162). Newbury Park, CA: Sage.

Burkholder, G. J., & Harlow, L. L. (2003). An illustration of a longitudinal cross-lagged design for larger structural equation models. *Structural Equation Modeling*, *10*, 465-486. doi: 10.1207/S15328007SEM1003_8

Cantazaro, A., & Wei, M. (2010). Adult attachment, dependence, self-criticism, and depressive symptoms: A test of a mediational model. *Journal of Personality*, *78*, 1135-1162. doi: 10.1111/j.1467-6494.2010.00645.x

Carmines, E. G., & McIver, J. P. (1981). Analyzing models with unobserved variables: Analysis of covariance structures. Thousand Oaks, California: Sage.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*, 464–504. doi: 10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of- fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233–255. doi: 10.1207//S15328007SEM0902_5

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology*, *100*, 316-336. doi: 10.1037//0021-843X.100.3.316

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558-577. doi: 10.1037/0021-843X.112.4.558

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, Florida: Psychological Assessment Resources.

Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment*, *14*, 365-373. doi: 10.1037/1040-3590.14.3.365

Dunkley, D. M., Berg, J. L., & Zuroff, D. C. (2012). The role of perfectionism in daily self-esteem, attachment, and negative affect. *Journal of Personality*, *80*, 633-663. doi: 10.1111/j.1467-6494.2011.00741.x

Dunkley, D. M., Blankstein, K. R., & Berg, J. L. (2012). Perfectionism dimensions and the five-factor model of personality. *European Journal of Personality*, *26*, 233-244. doi: 10.1002/per.829

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards

and self-criticism dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behaviour Research and Therapy, 44*, 63-84. doi: 10.1016/j.brat .2004.12.004

Dunkley, D. M., Ma, D., Lee, I. A., Preacher, K. J., & Zuroff, D. C. (2014). Advancing complex explanatory conceptualizations of daily negative and positive affect: trigger and maintenance coping action patterns. *Journal of Counseling Psychology*, *61*, 93-109. doi: 10.1037/a0034673

Dunkley, D. M., Mandel, T., & Ma, D. (2014). Perfectionism, neuroticism, and daily stress reactivity and coping effectiveness 6 months and 3 years later. *Journal of Counseling Psychology*, *61*, 616-633. doi: 10.1037/cou0000036

Dunkley, D. M., Solomon-Krakus, S., & Moroz, M. (2016). Personal standards and self-critical perfectionism and distress: Stress, coping, and perceived social support as mediators and moderators. In *Perfectionism, health, and well-being* (pp. 157-176). Springer, Cham. doi: 10.1007/978-3-319-18582-8_7

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84*, 234-252. doi: 10.1037/0022-3514.84.1.234

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review, 31*, 203-212. doi: 10.1016/j.cpr.2010.04.009

Enns, M. W., & Cox, B. J. (1997). Personality dimensions and depression: review and commentary. *The Canadian Journal of Psychiatry*, *42*, 274-284. doi: 10.1177/070674379704200305

Flett, G. L., & Hewitt, P. L. (Eds.). (2002). *Perfectionism: Theory, research, and treatment.*

Washington, DC: American Psychological Association. doi: 10.1037/10458-000

Flett, G. L., Hewitt, P. L., Blankstein, K. R., & Gray, L. (1998). Psychological distress and the frequency of perfectionistic thinking. *Journal of Personality and Social Psychology*, *75*, 1363-1381. doi: 10.1037//0022-3514.75.5.1363

Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 89-132). doi: 10.1037/10458-004

Frost, R. O., Marten, P. A., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468. doi: 10.1007/BF01172967

Geiser, C. (2013). Data analysis with Mplus (Methodology in the social sciences). *New York, NY: Guilford*.

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior, 15*, 27-33.

Hawley, L. L., Ho, M.-H. R., Zuroff, D. C., & Blatt, S. J. (2006). The relationship of perfectionism, depression, and therapeutic alliance during treatment for depression: Latent difference score analysis. *Journal of Consulting and Clinical Psychology*, *74*, 930–942. doi: 10.1037/0022-006X.74.5.930

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*, 1-25. doi: 10.1016/j.brat.2005.06.006

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: Understanding and treating human suffering.* New York: Guilford.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & Stewart, S. H. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record*, *54*, 553-578. doi: 10.1007/BF03395492

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*, 1152-1168. doi: 10.1037/0022-006X.64.6.1152

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, *110*, 86-108. doi: 10.1037/0033-2909.110.1.86

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. doi: 10.1037/0022-3514.60.3.456

Hewitt, P. L., Habke, A. M., Lee-Baggley, D. L., Sherry, S. B., & Flett, G. L. (2008). The impact of perfectionistic self-presentation on the cognitive, affective, and physiological experience of a clinical interview. *Psychiatry: Interpersonal and Biological Processes*, *71*, 93-122. doi: 10.1521/psyc.2008.71.2.93

Horney, K. (1950). *Neurosis and human growth: The struggle towards self-realization*. New York: Norton.

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158-176). Thousand Oaks, CA: Sage Publications, Inc.

Jöreskog, K. G., & Sörbom, D. (1984). LISREL-VI user's guide (3rd ed.). Mooresville, Indiana: Scientific Software.

Kannan, D., & Levitt, H. M. (2013). A review of client self-criticism in psychotherapy. *Journal of Psychotherapy Integration*, *23*, 166-178. doi: 10.1037/a0032355

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy*, *44*, 1301-1320. doi: 10.1016/j.brat.2005.10.003

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, *30*, 865-878. doi: 10.1016/j.cpr.2010.03.001

Kyparissis, A., Pierre, A., Goldsmith, P., & Dunkley, D. M. (2006). French version of the Revised Almost Perfect Scale (APS-R). *SMBD Jewish General Hospital, McGill University, Montreal, Quebec, Canada*.

Labrecque, J., Stephenson, R., Boivin, I., & Marchand, A. (1998). Validation de L'échelle Multidimensionnelle du Perfectionnisme Auprès de la population Francophone du Québec. *Revue Francophone de Clinique Comportementale et Cognitive*, *3*, 1-14.

Latzman, R. D., & Masuda, A. (2013). Examining mindfulness and psychological inflexibility within the framework of Big Five personality. *Personality and Individual Differences*, *55*, 129-134. doi: 10.1016/j.paid.2013.02.019

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford press.

Lundh, L. G. (2004). Perfectionism and acceptance. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, *22*, 251-265. doi: 10.1023/B:JORE.0000047311.12864.27

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, *39*, 99-128. doi: 10.1207/s15327906mbr3901_4

Mandel, T., Dunkley, D. M., & Moroz, M. (2015). Self-critical perfectionism and depressive and anxious symptoms over 4 years: The mediating role of daily stress reactivity. *Journal of Counseling Psychology*, *62*, 703-717. doi: 10.1037/cou0000101

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods*, *12*, 23-44. doi: 10.1037/1082-989X.12.1.23

Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research*, *46*, 816-841. doi: 10.1080/00273171.2011.606716

McGrath, D. S., Sherry, S. B., Stewart, S. H., Mushquash, A. R., Allen, S. L., Nealis, L. J., & Sherry, D. L. (2012). Reciprocal relations between self-critical perfectionism and depressive symptoms: Evidence from a short-term, four-wave longitudinal study. *Canadian Journal of Behavioural Science, 44*, 169-181. doi: 10.1037/a0027764

Monestès, J. L., Villatte, M., Mouras, H., Loas, G., & Bond, F. W. (2009). Traduction et validation française du questionnaire d'acceptation et d'action (AAQ-II). *Revue Européenne de Psychologie Appliquée*, *59*, 301-308. doi : 10.1016/j.erap.2009.09.001

Moroz, M., & Dunkley, D. M. (2015). Self-critical perfectionism and depressive symptoms: Low self-esteem and experiential avoidance as mediators. *Personality and Individual Differences*, *87*, 174-179. doi: 10.1016/j.paid.2015.07.044

Preacher, K. J., & Selig, J. P. (2012). Advantages of Monte Carlo confidence intervals for indirect effects. *Communication Methods and Measures*, *6*(2), 77-98. doi: 10.1080/19312458.2012.679848

Rhéaume, J., Letarte, H., Freeston, M. H., Dugas, M., Ladouceur, R., Boivin, I., & Marchand, A. (1994). L'Échelle de standards personnels (French version of the Frost MPS). *Université Laval, Sainte-Foy, Québec, Canada*.

Rice, K. G., & Aldea, M. A. (2006). State dependence and trait stability of perfectionism: A short-term longitudinal study. *Journal of Counseling Psychology*, *53*, 205-213. doi: 10.1037/0022-0167.53.2.205

Rice, K. G., Richardson, C. M., & Tueller, S. (2014). The short form of the revised almost perfect scale. *Journal of Personality Assessment*, *96*, 368-379. doi: 10.1080/00223891.2013.838172

Rochefort, C., Baldwin, A. S., & Chmielewski, M. (2018). Experiential avoidance: An examination of the construct validity of the AAQ-II and MEAQ. *Behavior Therapy*, *49*, 435-449. doi: 10.1016/j.beth.2017.08.008

Rolland, J. P., Parker, W. D., & Stumpf, H. (1998). A psychometric examination of the French translations of NEO-PI-R and NEO-FFI. *Journal of Personality Assessment*, *71*, 269-291. doi: 10.1207/s15327752jpa7102_13

Rolland, J. P., & Petot, J.-M. (1998). Questionnaire de Personnalité NEO-PI-R (traduction française). Paris: Les Éditions du Centre de Psychologie Appliquée.

Rudich, Z., Lerman, S. F., Gurevich, B., Weksler, N., & Shahar, G. (2008). Patients' self-criticism is a stronger predictor of physician's evaluation of prognosis than pain diagnosis

or severity in chronic pain patients. *The Journal of Pain*, *9*, 210-216. doi: 10.1016/j.jpain.2007.10.013

Santanello, A. W., & Gardner, F. L. (2007). The role of experiential avoidance in the relationship between maladaptive perfectionism and worry. *Cognitive Therapy and Research*, *31*, 319-332. doi: 10.1007/s10608-006-9000-6

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling psychology*, *57*, 1-10. doi: 10.1037/a0018082

Selig, J. P., & Preacher, K. J. (2008, June). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [Computer software]. Available from http://quantpsy.org/.

Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. *Research in Human Development*, *6*, 144-164. doi: 10.1080/15427600902911247

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2017). A meta-analytic and conceptual update on the associations between procrastination and multidimensional perfectionism. *European Journal of Personality*, *31*(2), 137-159. doi: 10.1002/per.2098

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The Almost Perfect Scale-Revised. *Measurement and Evaluation in Counseling and Development, 34*, 130-145.

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling

for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, *30*, 201-212. doi: 10.1002/per.2053

Smith, M. M., Vidovic, V., Sherry, S. B., Stewart, S. H., & Saklofske, D. H. (2018). Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping*, *31*, 4-20. doi: 10.1080/10615806.2017.1384466

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, *25*, 173-180. doi: 10.1207/s15327906mbr2502_4

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319. doi: 10.1207/s15327957pspr1004_2

Waintraub, L., Delalleau, B., Lavergne, A., & Bertrand, F. (1997). French version of the Mood and Anxiety Questionnaire (MASQ). *Institut de Recherches Internationales Servier: Courbevoie*.

Watson, D. (2009). Differentiating the mood and anxiety disorders: A quadripartite model. *Annual Review of Clinical Psychology*, *5*, 221-247. doi: 10.1146/annurev.clinpsy.032408.153510

Watson, D., & Clark, L. A. (1991). The mood and anxiety symptom questionnaire. *Unpublished manuscript, University of Iowa, Department of Psychology, Iowa City*.

Watson, D., Weber, K., Assenheimer, J. S., Clark, L. A., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: I. Evaluating the convergent and discriminant validity

of anxiety and depression symptom scales. *Journal of Abnormal Psychology*, *104*, 3-14. doi: 10.1037/0021-843X.104.1.3

Wenzlaff, R. M., & Wegner, D. M. (2000). Thought suppression. *Annual Review of Psychology*, *51*, 59-91. doi: 10.1146/annurev.psych.51.1.59

Wolgast, M. (2014). What does the Acceptance and Action Questionnaire (AAQ-II) really measure? *Behavior Therapy*, *45*, 831-839. doi: 10.1016/j.beth.2014.07.002

Zuroff, D. C., Mongrain, M., & Santor, D. A. (2004). Conceptualizing and measuring personality vulnerability to depression: comment on Coyne and Whiffen (1995). *Psychological Bulletin*, *130*, 489-511. doi: 10.1037/0033-2909.130.3.489

Table 1

Bivariate correlations, means, standard deviations, and internal consistencies for measures of self-critical perfectionism, experiential avoidance, anhedonic depression, and anxious arousal

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Time 1													
1. SC perf.	**-**												
2. Neuroticism	.73***	**.87**											
3. Exp. Avoidance	.66***	.72***	**.88**										
4. Anhedonic Dep.	.55***	.57***	.47***	**.91**									
5. Anxious Arousl	.32***	.42***	.42***	.27***	**.84**								
Time 2													
6. SC perf.	.92***	.66***	.58***	.49***	.35***	**-**							
7. Exp. Avoidance	.61***	.58***	.79***	.45***	.37***	.65***	**.88**						
8. Anhedonic Dep.	.44***	.54***	.55***	.46***	.23**	.49***	.58***	**.92**					
9. Anxious Arousl	.20*	.25**	.28***	.16*	.47***	.32***	.44***	.33***	**.91**				
Time 3													
10. SC perf.	.84***	.63***	.54***	.52***	.28***	.86***	.56***	.39***	.22**	**-**			
11. Exp. Avoidance	.60***	.60***	.69***	.46***	.32***	.62***	.76***	.52***	.34***	.72***	**.89**		
12. Anhedonic Dep.	.40***	.48***	.48***	.42***	.18*	.37***	.48***	.57***	.21**	.51***	.65***	**.93**	
13. Anxious Arousl	.28***	.35***	.40***	.23**	.60***	.26**	.45***	.28***	.63***	.29***	.42***	.37***	**.89**
M	-	33.1	47.6	55.8	23.1	-	50.1	56.5	23.8	-	48.6	58.0	23.8
SD	-	9.4	11.4	13.6	6.69	-	11.3	14.5	9.0	-	12.2	15.5	8.1

Note. $n = 192$.

SC perf. = Self-critical perfectionism. Exp. = Experiential. Dep. = Depression. Arousl = Arousal.

Cronbach alphas are presented in bold on the diagonal.

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

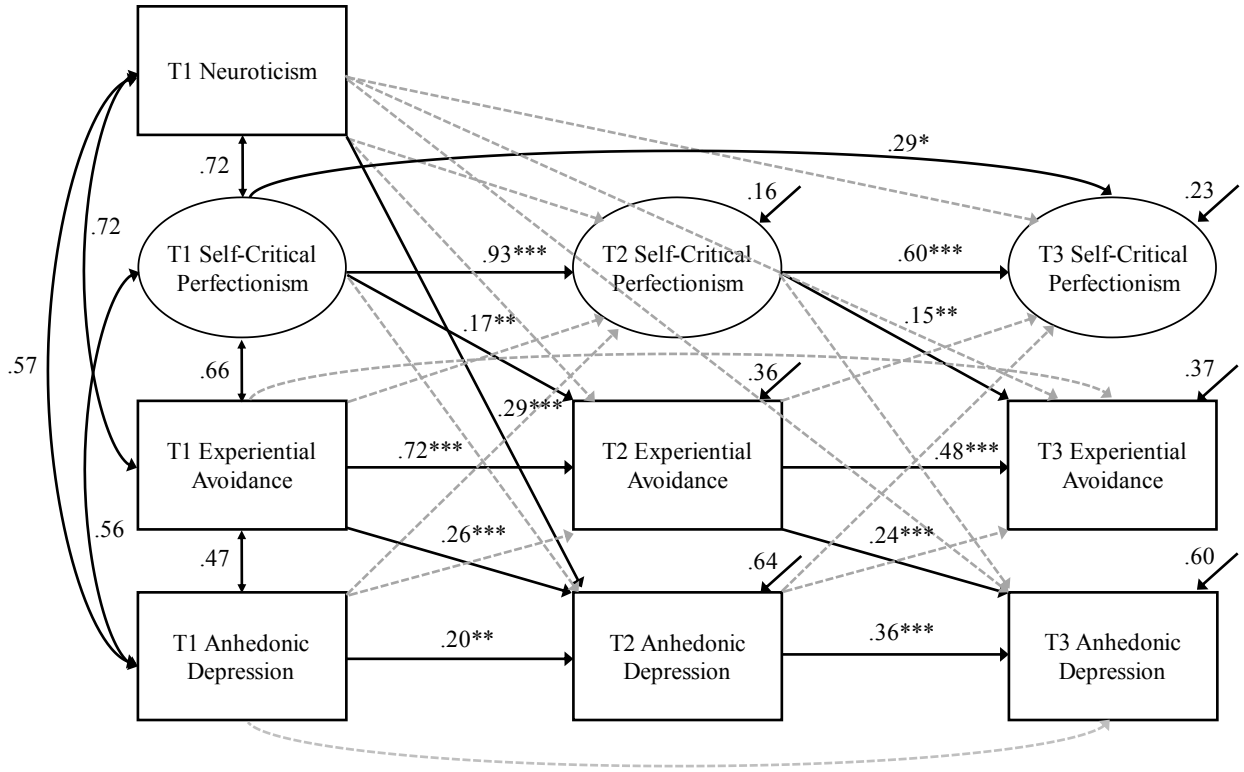

Figure 1. Cross-lagged analyses involving self-critical perfectionism, experiential avoidance, and anhedonic depression (AD) over Time 1 (T1), Time 2 (T2), and Time 3 (T3), and Time 1 neuroticism. For presentational clarity, significant paths and estimates are displayed in solid black and nonsignificant paths ($p > .05$) are displayed in dashed gray without estimates. Correlations between exogenous variables are significant ($p < .001$) and represented by double-headed arrows. Autoregressive paths are represented by horizontal arrows and cross-lagged paths are represented by diagonal arrows.
Note. * $p < .05$; ** $p < .01$; *** $p < .001$

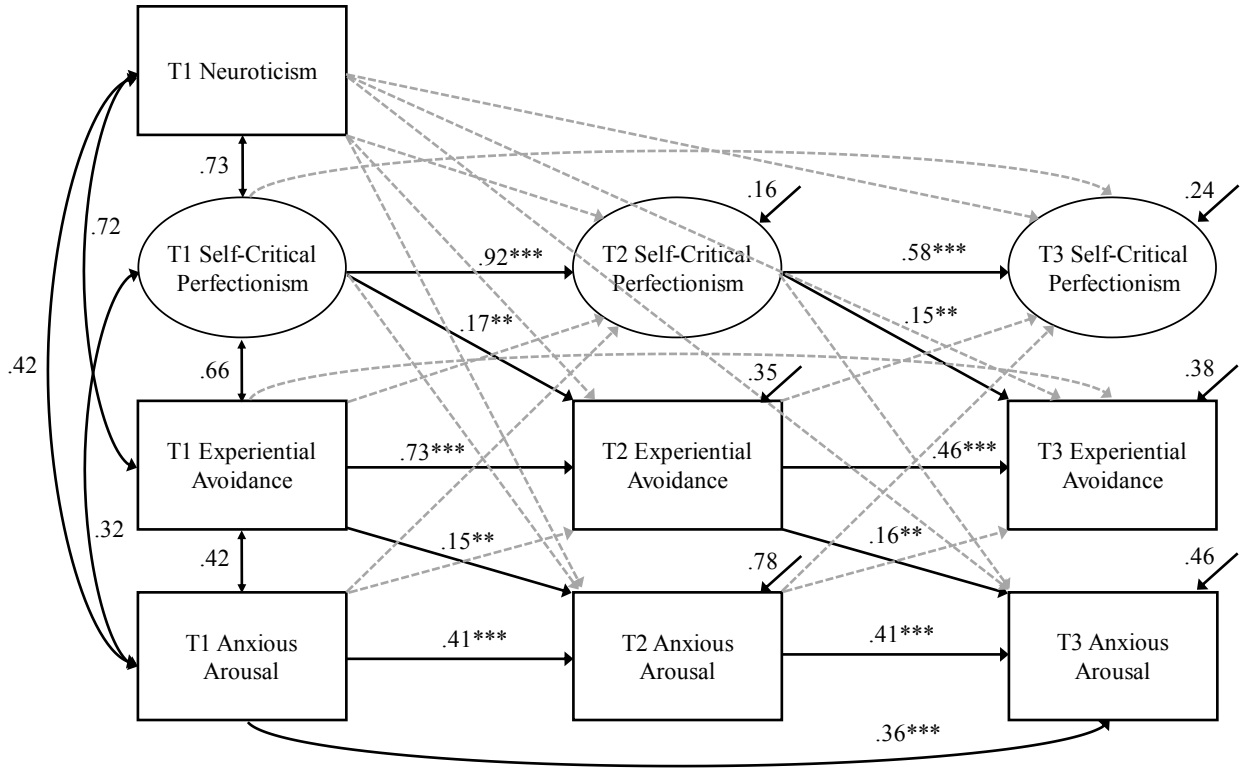

Figure 2. Cross-lagged analyses involving self-critical perfectionism, experiential avoidance, and anxious arousal (AA) over Time 1 (T1), Time 2 (T2), and Time 3 (T3), and Time 1 neuroticism. For presentational clarity, significant paths and estimates are displayed in solid black and nonsignificant paths ($p > .05$) are displayed in dashed gray without estimates. Correlations between exogenous variables are significant ($p < .001$) and represented by double-headed arrows. Autoregressive paths are represented by horizontal arrows and cross-lagged paths are represented by diagonal arrows.
Note. * $p < .05$; ** $p < .01$; *** $p < .001$

General Discussion

The current thesis sought to develop a better understanding of mediating mechanisms that contribute to the experiences of negative outcomes seen in individuals with higher SC perfectionism over time, and which could serve as important treatment targets for these individuals. The main purpose of this thesis was to investigate and improve our understanding of the relations between SC perfectionism, experiential avoidance, and negative outcomes. More specifically, Article 1 examined the role of experiential avoidance as an important explanatory variable in the relationship between SC perfectionism and depressive symptoms in a sample of community adults. Article 2 then tested daily experiential avoidance as a mediator between SC perfectionism and daily negative affect and daily sadness in an experience sampling study involving five daily reports over eight consecutive days in a sample of community adults. Finally, Article 3 examined the longitudinal cross-lagged relations between SC perfectionism, experiential avoidance, and depressive and anxious symptoms in a sample of community adults over a two-year period. The following sections will provide a discussion of the implications of the findings to our understanding of the relationship between perfectionism, experiential avoidance, and negative psychological outcomes.

SC Perfectionism Distinguished from PS Perfectionism

The findings from the current thesis support previous research demonstrating that the SC perfectionism dimension represents the more maladaptive dimension of perfectionism as compared to PS perfectionism (see Dunkley, Blankstein, Masheb, et al., 2006; Stoeber & Otto, 2006). Confirmatory factor analyses performed in Articles 1 and 2 revealed that PS perfectionism was unrelated to experiential avoidance and lower self-esteem as well as to outcomes of depressive symptoms, daily negative affect and daily sadness, respectively.

Additionally, Article 3 found that PS perfectionism was not related to neuroticism, experiential avoidance, and depressive and anxious symptoms over time, which is consistent with notions that SC perfectionism represents the more maladaptive dimension of perfectionism. The findings from each of the three articles found SC perfectionism to be more maladaptive than PS perfectionism in relation to experiential avoidance and each of the distress outcomes. These findings demonstrate that having high personal standards does not individually contribute to greater experiential avoidance. Further, PS perfectionism does not appear to be maladaptive in and of itself as the PS perfectionism dimension was unrelated to the distress outcomes across the three articles and over time.

SC Perfectionism as a Predictor of Experiential Avoidance

The results from Articles 1, 2, and 3 all indicate that higher levels of SC perfectionism were significantly associated with a greater tendency to engage in experiential avoidance. These findings are consistent with previous research demonstrating that SC perfectionism is related to specific avoidance strategies, such as an avoidant coping style (Dunkley et al., 2000; 2003; Noble, Ashby, & Gnilka, 2014), but extend these findings by examining experiential avoidance, which represents a broader construct that encompasses different aspects of avoidance. The findings demonstrated that SC perfectionism was related to experiential avoidance cross-sectionally in Article 1, in addition to being related to daily aggregated experiential avoidance, which was assessed across different situations and over time in Article 2. The findings from Article 3 demonstrated that SC perfectionism predicted increases in experiential avoidance from one year to the next, while controlling for neuroticism and previous levels of symptom outcomes. Taken together, the findings provide compelling evidence that individuals with higher SC

perfectionism demonstrate tendencies towards experiential avoidance as a maladaptive emotion regulation strategy.

The findings from the three articles might be understood in relation to escape theory, that posits that individuals can demonstrate motivations and desires to escape from aversive self-awareness (Heatherton & Baumeister, 1991). Individuals with higher SC perfectionism appear to exhibit particularly negative and harsh self-critical evaluations as well as chronic concerns about performance and negative judgments from others, all of which seems to contribute to an overall conceptualization of the self as being flawed, imperfect, and not good enough (Dunkley et al., 2003). Rather than remaining in a preoccupied state of negative self-awareness, it makes sense that individuals with higher SC perfectionism would make attempts to avoid or escape the thoughts and feelings that stem from their perfectionistic concerns (Santanello & Gardner, 2007). As such, these individuals appear to develop tendencies to engage in experiential avoidance, resulting in a general unwillingness to remain in contact with negative internal experiences.

SC Perfectionism Distinguished from Lower Self-Esteem and Neuroticism

The findings from each of the three articles also show that SC perfectionism is not reducible to broader constructs such as low self-esteem and neuroticism in relation to experiential avoidance. Altogether, the results demonstrated that SC perfectionism was related to experiential avoidance over and above these higher order dimensions. The findings from Articles 1 and 2 demonstrated that SC perfectionism was related to experiential avoidance in Article 1 and Article 2, controlling for the effects of lower self-esteem. Additionally, the results from Articles 1 and 2 demonstrated that experiential avoidance did not mediate the relationship between lower self-esteem and distress outcomes. Together, these findings extended previous research (e.g., Dunkley & Grilo, 2007; Rice, Ashby, & Slaney, 1998) and provided further

evidence that SC perfectionism and low self-esteem are closely related but distinct constructs, and that the effects of SC perfectionism cannot be reduced to representing low self-esteem. These findings suggest that experiential avoidance might not be used to regulate feelings of low self-esteem, but rather emphasize experiential avoidance as a unique maladaptive characteristic associated with SC perfectionism in relation to negative outcomes.

Furthermore, Article 3 demonstrated that SC perfectionism was related to experiential avoidance, controlling for neuroticism. This is consistent with previous research that has distinguished measures of SC perfectionism from neuroticism by demonstrating unique relations with avoidant coping, negative interpersonal characteristics (e.g., lower agreeableness, negative social interactions), and depressive symptoms (e.g., Dunkley, Blankstein, & Berg, 2012; Dunkley, Mandel, et al., 2014; see Smith et al., 2016; Zuroff et al., 2004 for reviews). Together, the three articles support the overall finding that SC perfectionism is not reducible to broader constructs in terms of its unique relation with experiential avoidance. These findings suggest that experiential avoidance might be used to deal or cope with the negative feelings associated with SC perfectionism, specifically the harsh self-scrutiny and perceived criticism from others that are key features of SC perfectionism.

Experiential Avoidance as a Mediator between SC Perfectionism and Distress

The findings from the three articles support previous theory that conceptualizes experiential avoidance as a generalized vulnerability factor that confers transdiagnostic risk (Kashdan, Barrios, Forsyth, & Steger, 2006; Kashdan & Rottenberg, 2010). All of the findings support the view that experiential avoidance is a transdiagnostic risk factor, as it was found to be related to distress outcomes across the three articles, while controlling for higher order constructs. Specifically, Article 1 demonstrated that experiential avoidance was related to

depressive symptoms, controlling for lower self-esteem. Article 2 provided a more sophisticated examination of daily experiential avoidance and revealed that daily aggregated experiential avoidance was related to the maintenance of daily aggregated negative affect and sadness, controlling for the effects of lower self-esteem. Article 3 then provided robust evidence of experiential avoidance as a transdiagnostic risk factor, by demonstrating that experiential avoidance predicted increases in anhedonic depressive symptoms and anxious arousal from both Time 1 to Time 2 and Time 2 to Time 3, respectively, while controlling for Time 1 neuroticism. Together, these findings demonstrate that the effects of experiential avoidance provide additional explanatory value over and above broader personality variables such as neuroticism and lower self-esteem in relation to distress outcomes (Rochefort, Baldwin, & Chmielewski, 2018; Wolgast, 2014).

The findings from all three articles also support experiential avoidance as a mediator that helps explain the relationship between SC perfectionism and greater experiences of negative distress outcomes. Article 1 demonstrated that experiential avoidance mediated the relation between SC perfectionism and depressive symptoms, controlling for the effects of lower self-esteem. As the findings from Article 1 were cross-sectional, Article 2 built on these findings by demonstrating that aggregated daily experiential avoidance, assessed across situations over the course of the week, mediated the relation between SC perfectionism and aggregated daily negative affect and sadness, respectively, controlling for the effects of lower self-esteem. This finding highlights that the use of experiential avoidance as a regulation strategy in daily living might explain the maintenance of both greater daily negative affect and sadness for individuals with greater SC perfectionism. Further, Article 2 provided a more ecologically valid representation of the use of experiential avoidance as a maladaptive emotion regulation strategy

in individuals with higher SC perfectionism, and demonstrated that the greater daily use of experiential avoidance was related to negative consequences across situations and over time. The findings from Article 3 similarly demonstrated that experiential avoidance mediated the relationship between SC perfectionism and both depressive and anxious symptoms over a 2-year period, controlling for the effects of neuroticism. The longitudinal findings from Article 3 provided a crucial test of the theory that avoidance and suppression strategies have harmful effects for individuals with higher SC perfectionism by increasing depressive and anxious symptoms over the longer-term.

The findings from the three articles emphasize that the tendency towards experiential avoidance as a self-regulatory strategy becomes problematic as it is related to rigid and inflexible behavioral reactions that are often inconsistent with an individuals' life values or higher-order goals (Hayes et al., 2004). Stated differently, experiential avoidance might be effective for avoiding distress in the moment, but does not appear to contribute to adaptive goal-directed behaviors (Hayes et al., 1999; 2004). Furthermore, the tendency to engage in experiential avoidance seen in individuals with higher SC perfectionism might be particularly detrimental over the longer-term. The longitudinal findings from Article 3 demonstrated that attempts to control or avoid distressing internal experiences often increase and prolong these unwanted feelings and thoughts, leading to further distress over time (Wenzlaff & Wegner, 2000). This might be explained by the immediate and short-term relief from distress that results from using escape and avoidance strategies (Hayes et al., 1996), which can be negatively reinforcing and lead to further use of experiential avoidance over time, demonstrating that what we resist, persists. Taken together, the findings highlight that experiential avoidance contributes to our understanding of the consistent relation between SC perfectionism and negative outcomes.

Clinical Implications

Findings from the three articles in this thesis have significant clinical implications, which are meaningful as previous research has shown that individuals with higher SC perfectionism demonstrate a poor response to traditional treatments targeting depressive and anxious symptoms (Blatt & Zuroff, 2005; Kannan & Levitt, 2013). Additionally, addressing individuals' perfectionism directly in therapy may be met with resistance, which is why is it important to identify explanatory factors that contribute to the negative outcomes associated with SC perfectionism (Lundh, 2004). The findings of the three articles emphasize the importance of targeting experiential avoidance in individuals with greater SC perfectionism in order to reduce the experience and maintenance of negative psychological distress outcomes. Focusing on mechanisms, such as experiential avoidance, involved in the consistent relation between SC perfectionism and negative outcomes might lead to important gains in treatment and help foster mastery in these individuals. By targeting experiential avoidance, these individuals can increase their willingness to tolerate, and even accept, internal distress in order to move toward what is important to them. More specifically, this would mean teaching individuals to disengage from the internal struggle of warding off negative internal experiences, as these patterns of experiential avoidance seem to keep individuals stuck in making attempts to avoid distress rather than pursing important goals and values. In fact, Hayes and colleagues (1996) have posited that many psychopathologies do not necessarily involve 'bad problems', but rather, that a common feature across disorders involves 'bad solutions', such as developing tendencies towards experiential avoidance.

Acceptance-based treatments have grown in prominence and efficacy and highlight the importance of altering the impact of emotions and thoughts, rather than attempting to change

their form or frequency (Hayes et al., 1996). This is consistent with research that demonstrates that reappraisal strategies, in contrast to suppression strategies, might be particularly useful in emotion regulation (Gross, 2001). Third-wave therapies, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) as well as Dialectical Behavior Therapy (DBT; Linehan, 1993), might be particularly beneficial for individuals with greater SC perfectionism as they teach individuals to abandon attempts to control or avoid thoughts and feelings, and instead to observe inner experiences nonjudgmentally and accept them as they are, while changing behavioral responses in constructive and values-driven ways. The strategies employed in ACT and DBT, such as mindfulness and distress tolerance techniques and acceptance-based strategies, might help individuals with greater SC perfectionism to develop more self-acceptance, without necessarily confronting the individuals' perfectionistic beliefs directly. Furthermore, strategies aimed at increasing distress tolerance and self-acceptance, including reappraisals of internal experiences, might foster greater self-compassion to counter-balance self-critical evaluations in individuals with higher SC perfectionism.

Limitations and Future Directions

The current thesis possessed several strengths, including the use of large samples of community adults, the experience sampling method, and the use of a longitudinal design. However, there remain several limitations to this research. Measures were based on retrospective summary questionnaires and therefore present the possibility for recall biases and distortions in perception inherent in this type of methodology. Article 2 had the strength of including an experience sampling method with multiple daily reports, nonetheless, future research would benefit from using methodology with less retrospection in order to decrease distortions, memory biases, and social desirability. Articles 1 and 2 both relied on a global measure of self-esteem,

which limits our ability to generalize the findings to specific domains of self-esteem, such as achievement and interpersonal self-esteem (see Blankstein et al., 2008). Future research should examine different domains of self-esteem in order to replicate and generalize the findings from those articles. Furthermore, Article 3 used the AAQ-II to measure experiential avoidance, and this measure has received criticism for being closely related to distress measures as well as not fully capturing the broader construct of psychological inflexibility, as was intended by the developers (see Wolgast, 2014). Future research could assess experiential avoidance using both the AAQ-II as well as the MEAQ (Rochefort et al., 2018).

The current thesis focused on the examination of experiential avoidance, which represents one facet of the broader construct of psychological inflexibility. It would be important for future research to examine other dimensions of psychological inflexibility, including cognitive fusion, self-as-content, inaction, lack of contact with the present moment, and lack of contact with values. For instance, individuals with higher SC perfectionism might be more likely to engage in a process of cognitive fusion with the content of their self-scrutiny and self-critical thoughts, which could include taking thoughts such as 'I am a failure' as literal truths that dominate behavior (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). In addition, the use of judgmental and self-critical language may also contribute to preoccupations and focus on the past and future, as opposed to flexible contact with the present moment, which can be seen in individuals with higher SC perfectionism when they ruminate about past events or mistakes (Frost, Marten, Lahart, & Rosenblate, 1990; O'Connor, O'Connor, & Marshall, 2007) and worry about anticipated failures or criticisms in the future (Stoeber & Joormann, 2001). Furthermore, greater inflexibility in those with higher SC perfectionism may also be expressed through a lack of chosen values and behavioral patterns characterized by inaction, impulsivity, and avoidant

persistence, which could result in giving up or moving away from the pursuit of important goals, instead of persisting or changing behavior in the service of chosen values (Santanello & Gardner, 2007; Hayes et al., 2006). Recently, a new scale has been developed that attempts to capture the different dimensions of psychological inflexibility, namely, the Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs, Rogge, & Wilson, 2018). It would be of interest for future studies to include measures like the MPFI in order to investigate whether other aspects of psychological inflexibility help explain the relationship between SC perfectionism and negative outcomes, which would further strengthen the current findings.

Moreover, the articles in the current thesis were based on samples of nonclinical community adults. Therefore, it is important that future research examine the generalizability of these findings to clinical samples, such as individuals with clinical depression, anxiety disorders, and eating disorders. Future research should test whether specific therapeutic interventions aimed at increasing psychological flexibility and decreasing experiential avoidance (i.e., fostering acceptance of distress) would be effective in the treatment of depressive and anxious symptoms in individuals with higher SC perfectionism. Third wave psychotherapies, such as Acceptance and Commitment Therapy, Dialectical Behavior Therapy, and Mindfulness-Based Cognitive Therapy, offer promising interventions and directions for future research based on the findings from the current thesis.

Conclusion

The present thesis contributes to our understanding of the personality vulnerability of self-critical perfectionism to distress and negative outcomes over time. This thesis investigated experiential avoidance as an important explanatory factor that helps explain the consistent relationship between self-critical perfectionism and distress outcomes. Results from the three

articles showed that individuals with higher self-critical perfectionism demonstrate a tendency to engage in experiential avoidance. The results also provided compelling support for experiential avoidance as a mediator between self-critical perfectionism and various distress outcomes. The findings from the present thesis highlight directions for future research and lend support for the investigation and use of interventions targeting experiential avoidance with the aim of reducing vulnerability to depression and anxiety in individuals with higher self-critical perfectionism.

General References

Adler, A. (1956). The neurotic disposition. In H. L. Ansbacher & R. R. Ansbacher(Eds.), *The individual psychology of Alfred Adler* (pp. 239- 262). New York: Harper.

Antony, M. M., Purdon, C. L., Huta, V., & Swinson, R. P. (1998). Dimensions of perfectionism across the anxiety disorders. *Behaviour Research and Therapy*, *36*, 1143-1154. doi: 10.1016/S0005-7967(98)00083-7

Bagby, R. M., Quilty, L. C., & Ryder, A. C. (2008). Personality and depression. *The Canadian Journal of Psychiatry/Le Revue Canadienne de Psychiatrie, 53*, 14–25. doi: 10.1177/070674370805300104

Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology Review*, *27*, 384-405. doi: 10.1016/j.cpr.2006.12.005

Barlow, D.H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic.* New York: Guilford Press.

Barlow, D. H., Allen, L. B., & Choate, M. L. (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy*, *35*, 205-230. doi: 10.1016/S0005-7894(04)80036-4

Barrow, J. C., & Moore, C. A. (1983). Group interventions with perfectionistic thinking. *The Personnel and Guidance Journal, 61*, 612-615. doi: 10.1111/j.2164-4918.1983.tb00008.x

Békés, V., Dunkley, D. M., Taylor, G., Zuroff, D. C., Lewkowski, M., Foley, J. E., Myhr, G., & Westreich, R. (2015). Chronic stress and attenuated improvement in depression over 1 year: The moderating role of perfectionism. *Behavior Therapy*, *46*, 478-492. doi: 10.1016/j.beth.2015.02.003

Blankstein, K. R., Dunkley, D. M., & Wilson, J. (2008). Self-criticism and personal standards perfectionism: Self-esteem as a mediator and moderator of relations with personal and academic needs and estimated GPA. *Current Psychology, 27*, 29-61. doi: 10.1007/s12144-008-9022-1

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist, 50*, 1003-1020. doi:10.1037/0003-066x.50.12.1003

Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology, 85*, 383-389. doi: 10.1037/0021-843X.85.4.383

Blatt, S. J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self-critical depression. *Clinical Psychology Review, 12*, 47-91. doi:10.1016/0272-7358(92)90091-L

Blatt, S. J., & Zuroff, D. C. (2005). Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clinical Psychology Review, 25*, 459-486. doi: 10.1016/j.cpr.2005.03.001

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K.,...Zettle, R. D. (2011). Preliminary psychometric properties of the acceptance and action questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676-688. doi: 10.1016/j.beth.2011.03.007

Borkovec, T.D., Alcaine, O., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R.G. Heimberg, C.L. Turk, & D.S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77–108). New York: Guilford Press.

Burkholder, G. J., & Harlow, L. L. (2003). An illustration of a longitudinal cross-lagged design for larger structural equation models. *Structural Equation Modeling, 10,* 465-486. doi: 10.1207/S15328007SEM1003_8

Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology Today*, 34-52.

Chang, E. C., & Rand, K. L. (2000). Perfectionism as a predictor of subsequent adjustment: Evidence for a specific diathesis-stress mechanism among college students. *Journal of Counseling Psychology, 47*, 129-137. doi: 10.1037/0022-0167.47.1.129

Chawla, N., & Ostafin, B. (2007). Experiential avoidance as a functional dimensional approach to psychopathology: An empirical review. *Journal of Clinical Psychology*, *63*, 871-890. doi: 10.1002/jclp.20400

Cioffi, D., & Holloway, J. (1993). Delayed costs of suppressed pain. *Journal of Personality and Social Psychology*, *64*, 274-282. doi: 10.1037//0022-3514.64.2.274

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, *4*, 5-13.

Cox, B. J., Clara, I. P., & Enns, M. W. (2009). Self-criticism, maladaptive perfectionism, and depression symptoms in a community sample: A longitudinal test of the mediating effects of person-dependent stressful life events. *Journal of Cognitive Psychotherapy*, *23*, 336-349. doi: 10.1891/0889-8391.23.4.336

Coyne, J. C., & Whiffen, V. E. (1995). Issues in personality as diathesis for depression: The case of sociotropy-dependency and autonomy-self-criticism. *Psychological Bulletin*, *118*, 358-378. doi: 10.1037/0033-2909.118.3.358

Curran, T., & Hill, A. P. (2017). Perfectionism is increasing over time: A meta-analysis of birth cohort differences from 1989 to 2016. *Psychological Bulletin, 145*, 410-429. doi: 10.1037/bul0000138

Di Schiena, R., Luminet, O., Philippot, P., & Douilliez, C. (2012). Adaptive and maladaptive perfectionism in depression: Preliminary evidence on the role of adaptive and maladaptive rumination. *Personality and Individual Differences, 53*, 774-778. doi: 10.1016/j.paid.2012.05.017

Dunkley, D. M., Berg, J. L., & Zuroff, D. C. (2012). The role of perfectionism in daily self-esteem, attachment, and negative affect. *Journal of Personality, 80*, 633-663. doi: 10.1111/j.1467-6494.2011.00741.x

Dunkley, D. M., & Blankstein, K. R. (2000). Self-critical perfectionism, coping, hassles, and current distress: A structural equation modeling approach. *Cognitive Therapy and Research, 24*, 713-730. doi: 10.1023/a:1005543529245

Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology, 47*, 437-453. doi: 10.1037/0022-0167.47.4.437

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards and evaluative concerns dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behavioural Research and Therapy, 44*, 63-84. doi: 10.1016/j.brat.2004.12.004

Dunkley, D. M., & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy, 45*, 139-149. doi: 10.1016/j.brat.2006.01.017

Dunkley, D. M., Ma, D., Lee, I. A., Preacher, K. J., & Zuroff, D. C. (2014). Advancing complex explanatory conceptualizations of daily negative and positive affect: Trigger and maintenance coping action patterns. *Journal of Counseling Psychology, 61*, 93-109. doi: 10.1037/a0034673

Dunkley, D. M., Sanislow, C. A., Grilo, C. M., & McGlashan, T. H. (2009). Self-criticism versus neuroticism in predicting depression and psychosocial impairment for 4 years in a clinical sample. *Comprehensive Psychiatry, 50*, 335-346. doi: 10.1016/j.comppsych.2008.09.004

Dunkley, D. M., Solomon-Krakus, S., & Moroz, M. (2016). Personal standards and self-critical perfectionism and distress: Stress, coping, and perceived social support as mediators and moderators. In *Perfectionism, health, and well-being* (pp. 157-176). Springer, Cham. doi: 10.1007/978-3-319-18582-8_7

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84*, 234-252. doi: 10.1037//0022-3514.84.1.234

Ellis, A., & Robb, H. (1994). Acceptance and rational-emotive therapy. In S. C. Hayes, N. S. Jacobson, V. M. Follette, & M. J. Dougher (Eds.), *Acceptance and change: Content and context in psychotherapy* (pp. 91-102). Reno, NV: Context Press.

Enns, M. W., & Cox, B. J. (1997). Personality dimensions and depression: review and commentary. *The Canadian Journal of Psychiatry, 42*, 274-284. doi: 10.1177/070674379704200305

Enns, M. W., & Cox, B. J. (1999). Perfectionism and depression symptom severity in major depressive disorder. *Behaviour Research and Therapy, 37*, 783-794. doi: 10.1016/S0005-7967(98)00188-0

Enns, M. W., Cox, B. J., & Clara, I. P. (2005). Perfectionism and neuroticism: A longitudinal study of specific vulnerability and diathesis-stress models. *Cognitive Therapy and Research, 29*, 463-478. doi: 10.1007/s10608-005-2843-04

Flett, G. L., Blankstein, K. R., Hewitt, P. L., & Koledin, S. (1992). Components of perfectionism and procrastination in college students. *Social Behavior and Personality: an international journal*, *20*, 85-94. doi: 10.2224/sbp.1992.20.2.85

Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 5-31): Washington, DC: American Psychological Association.

Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism* (pp. 89-132). Washington, DC: American Psychological Association.

Freud, S. (1952). *A general introduction to psychoanalysis*. New York: Washington Square Press. (Original work published 1920).

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468. doi: 10.1007/bf01172967

Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., & Watson, D. (2011). Development of a measure of experiential avoidance: The Multidimensional Experiential Avoidance Questionnaire. *Psychological Assessment, 23*, 692-713. doi: 10.1037/a0023242

Gnilka, P. B., Ashby, J. S., & Noble, C. M. (2012). Multidimensional perfectionism and anxiety: Differences among individuals with perfectionism and tests of a coping-mediation model. *Journal of Counseling & Development*, *90*, 427-436. doi: 10.1002/j.1556-6676.2012.00054.x

Gold, D. B., & Wegner, D. M. (1995). Origins of ruminative thought: Trauma, incompleteness, nondisclosure, and suppression. *Journal of Applied Social Psychology, 25*, 1245-1261. doi: 10.1111/j.1559-1816.1995.tb02617.x

Graham, A. R., Sherry, S. B., Stewart, S. H., Sherry, D. L., McGrath, D. S., Fossum, K. M., & Allen, S. L. (2010). The existential model of perfectionism and depressive symptoms: A short-term, four-wave longitudinal study. *Journal of Counseling Psychology*, *57*, 423-438. doi: 10.1037/a0020667

Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science*, *10*, 214-219. doi: 10.1111/1467-8721.00152

Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: the acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology*, *106*, 95-103. doi: 10.1037/0021-843X.106.1.95

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior, 15*, 27-33.

Hawley, L. L., Ho, M. H. R., Zuroff, D. C., & Blatt, S. J. (2006). The relationship of perfectionism, depression, and therapeutic alliance during treatment for depression: Latent difference score analysis. *Journal of Consulting and Clinical Psychology*, *74*, 930-942. doi: 10.1037/0022-006X.74.5.930

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*, 1-25. doi: 10.1016/j.brat.2005.06.006

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: Understanding and treating human suffering.* New York: Guilford.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & Stewart, S. H. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578. doi: 10.1007/BF03395492

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168. doi: 10.1037/0022-006X.64.6.1152

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self- awareness. *Psychological Bulletin, 110*, 86-108. doi: 10.1037/0033-2909.110.1.86

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. doi: 10.1037/0022-3514.60.3.456

Hewitt, P. L., Flett, G. L., & Ediger, E. (1996). Perfectionism and depression: Longitudinal assessment of a specific vulnerability hypothesis. *Journal of Abnormal Psychology*, *105*, 276-280. doi: 10.1037/0021-843X.105.2.276

Hollender, M. H. (1965). Perfectionism. *Comprehensive Psychiatry*, *6*, 94-103. doi: 10.1016/S0010-440X(65)80016-5

Horney, K. (1950). *Neurosis and human growth: The struggle towards self-realization.* New York: Norcross.

Kannan, D., & Levitt, H. M. (2013). A review of client self-criticism in psychotherapy. *Journal of Psychotherapy Integration, 23*, 166-178. doi: 10.1037/a0032355

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy, 44*, 1301-1320. doi: 10.1016/j.brat.2005.10.003

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review, 30*, 865-878. doi: 10.1016/j.cpr.2010.03.001

Latzman, R. D., & Masuda, A. (2013). Examining mindfulness and psychological inflexibility within the framework of Big Five personality. *Personality and Individual Differences, 55*, 129-134. doi: 10.1016/j.paid.2013.02.019

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford press.

Lundh, L. G. (2004). Perfectionism and acceptance. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 22,* 251-265. doi: 10.1023/B:JORE.0000047311.12864.27

McCrae, R. R., & Costa, P. (2008). Empirical and theoretical status of the five-factor model of personality traits. In *The SAGE Handbook of Personality Theory and Assessment: Volume 1 - Personality Theories and Models* (pp. 273-294). SAGE Publications Inc. doi: 10.4135/9781849200462.n13

McGrath, D. S., Sherry, S. B., Stewart, S. H., Mushquash, A. R., Allen, S. L., Nealis, L. J., & Sherry, D. L. (2012). Reciprocal relations between self-critical perfectionism and

depressive symptoms: Evidence from a short-term, four-wave longitudinal study. *Canadian Journal of Behavioural Science, 44*, 169-181. doi: 10.1037/a0027764

Missildine, W. H. (1963). *Your inner child of the past*. New York: Simon & Schuster.

Molnar, D. S., Sadava, S. W., Flett, G. L., & Colautti, J. (2012). Perfectionism and health: A mediational analysis of the roles of stress, social support and health-related behaviours. *Psychology & Health, 27*, 846-864. doi: 10.1080/08870446.2011.630466

Moore, C, & Barrow, J. C. (1986). Perfectionistic thinking in university students: Implications for individual treatment. In J. E. Talley & W. J. K. Rockwell (Eds.), *Counseling and psychotherapy with college students: A guide to treatment* (pp. 100-112). New York: Praeger.

Moskowitz, D. S. (1986). Comparison of self-reports, reports by knowledgeable informants, and behavioral observation data. *Journal of Personality*, *54*, 294-317. doi: 10.1111/j.1467-6494.1986.tb00396.x

Noble, C. L., Ashby, J. S., & Gnilka, P. B. (2014). Multidimensional perfectionism, coping, and depression: Differential prediction of depression symptoms by perfectionism type. *Journal of College Counseling*, *17*, 80-94. doi: 10.1002/j.2161-1882.2014.00049.x

O'Connor, R. C., & O'Connor, D. B. (2003). Predicting hopelessness and psychological distress: The role of perfectionism and coping. *Journal of Counseling Psychology*, *50*, 362-372. doi: 10.1037/0022-0167.50.3.362

O'Connor, D. B., O'Connor, R. C., & Marshall, R. (2007). Perfectionism and psychological distress: Evidence of the mediating effects of rumination. *European Journal of Personality*, *21*, 429-452. doi: 10.1002/per.616

Perls, F., Hefferline, R. F., & Goodman, P. (1951). *Gestalt therapy*. New York: Julian Press.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (1998). Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *Journal of Counseling Psychology, 45*, 304-314. doi: 10.1037/0022-0167.45.3.304

Rochefort, C., Baldwin, A. S., & Chmielewski, M. (2018). Experiential avoidance: An examination of the construct validity of the AAQ-II and MEAQ. *Behavior Therapy, 49*, 435-449. doi: 10.1016/j.beth.2017.08.008

Roemer, L., & Borkovec, T. D. (1994). Effects of suppressing thoughts about emotional material. *Journal of Abnormal Psychology*, *103*, 467-474. doi: 10.1037/0021-843X.103.3.467

Rogers, C.R. (1951). Client-centered therapy: Its current practice, implications, and theory. Boston: Houghton Mifflin.

Rogers, C. R. (1961). *On Becoming a Person: A Therapist's View of Psychotherapy* (Sentry ed.). Boston, MA: Houghton Mifflin.

Rolffs, J. L., Rogge, R. D., & Wilson, K. G. (2018). Disentangling components of flexibility via the Hexaflex model: development and validation of the multidimensional psychological flexibility inventory (MPFI). *Assessment*, *25*, 458-482. doi: 10.1177/1073191116645905

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: Different concepts, different outcomes. *American Sociological Review*, *60*, 141-156.

Roth, S., & Cohen, L. J. (1986). Approach, avoidance, and coping with stress. *American Psychologist*, *41*, 813-819. doi: 10.1037//0003-66X.41.7.813

Santanello, A. W., & Gardner, F. L. (2007). The role of experiential avoidance in the relationship between maladaptive perfectionism and worry. *Cognitive Therapy and Research, 31*, 319-332. doi: 10.1007/s10608-006-9000-6

Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology*, *4*, 1-32. doi: 10.1146/annurev.clinpsy.3.022806.091415

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2017). A meta-analytic and conceptual update on the associations between procrastination and multidimensional perfectionism. *European Journal of Personality, 31*, 137-159. doi: 10.1002/per.2098

Slade, P. D., & Owens, R. G. (1998). A dual process model of perfectionism based on reinforcement theory. *Behavior Modification*, *22*, 372-390. doi: 10.1177/01454455980223010

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The Almost Perfect Scale-Revised. *Measurement and Evaluation in Counseling and Development, 34*, 130-145.

Smith, M. M., Sherry, S. B., Chen, S., Saklofske, D. H., Mushquash, C., Flett, G. L., & Hewitt, P. L. (2018). The perniciousness of perfectionism: A meta-analytic review of the perfectionism–suicide relationship. *Journal of Personality*, *86*, 522-542. doi: 10.1111/jopy.12333

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, *30*, 201-212. doi: 10.1002/per.2053

Smith, M. M., Vidovic, V., Sherry, S. B., Stewart, S. H., & Saklofske, D. H. (2018). Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping*, *31*, 4-20. doi: 10.1080/10615806.2017.1384466

Stoeber, J., & Joormann, J. (2001). Worry, procrastination, and perfectionism: Differentiating amount of worry, pathological worry, anxiety, and depression. *Cognitive Therapy and Research*, *25*, 49-60. doi: 10.1023/A:1026474715384

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319. doi: 10.1207/s15327957pspr1004_2

Stone, A. A., & Shiffman, S. (2002). Capturing momentary, self-report data: A proposal for reporting guidelines. *Annals of Behavioral Medicine*, *24*, 236-243. doi: 10.1207/S15324796ABM2403_09

Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, *53*, 5-13.

Wenzlaff, R. M., & Wegner, D. M. (2000). Thought suppression. *Annual Review of Psychology, 51*, 59-91. doi: 10.1146/annurev.psych.51.1.59

Wolgast, M. (2014). What does the Acceptance and Action Questionnaire (AAQ-II) really measure? *Behavior Therapy, 45*, 831-839. doi: 10.1016/j.beth.2014.07.002

Zuroff, D. C., Mongrain, M., & Santor, D. A. (2004). Conceptualizing and measuring personality vulnerability to depression: comment on Coyne and Whiffen (1995). *Psychological Bulletin, 130*, 489-511. doi: 10.1037/0033-2909.130.3.489