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**Perfectionism, Depressive Symptoms, and Suicide Ideation:  
Tests of Social Disconnection and Existential Models**

MARIANNE ELIZABETH ETHERSON

Submitted in accordance with the requirements for the degree of

Doctor of Philosophy

York St John University,

School of Science, Technology, and Health

April 2022

The candidate confirms that the work submitted is her own, except where work which has formed part of jointly authored publications has been included. The contribution of the candidate and the other authors to this work has been explicitly indicated below. The candidate confirms that appropriate credit has been given within the thesis where reference has been made to the work of others.

Jointly authored publications in the thesis:

Etherson, M. E., Smith, M. M., Hill, A. P., & Flett, G. L. (2022). Feelings of not mattering and depressive symptoms from a temporal perspective: A comparison of the cross-lagged panel model and random-intercept cross-lagged panel model. *Journal of Psychoeducational Assessment*, 40, 60-76.

Contribution of the candidate and co-authors:

Marianne E. Etherson – Project lead in the design of the study, literature search, and writing of the manuscript, data collection and statistical analysis. Lead correspondent with the Chair of the Research Ethics Sub-Committee at York St John University and the journal editor.

Martin M. Smith – Offered guidance on the study design and statistical analyses, and provided feedback on several drafts of the manuscript and response to reviewers.

Andrew P. Hill – Offered guidance on the study design and statistical analyses, and provided feedback on several drafts of the manuscript and response to reviewers.

Gordon L. Flett – Provided feedback on drafts of the manuscript and response to reviewers.

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Simon B. Sherry – Provided feedback on drafts of the manuscript and response to reviewers.

Thomas Curran – Provided feedback on drafts of the manuscript and response to reviewers.

Gordon L. Flett – Provided feedback on drafts of the manuscript and response to reviewers.

Paul L. Hewitt – Provided feedback on drafts of the manuscript and response to reviewers.

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## Abstract

The Perfectionism Social Disconnection Model (PSDM) and the Existential Model of Perfectionism and Depressive Symptoms (EMPDS) are promising models which explain *why* perfectionism leads to depressive symptoms and suicide ideation. The purpose of the thesis was to extend, integrate, and rigorously test these models. Study one advanced research on the PSDM by including suicide ideation alongside depressive symptoms as outcomes, and anti-mattering alongside mattering as mediators. Findings were that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via mattering (in a community sample) and anti-mattering (across samples). Study two provided a three-wave longitudinal test of this model. Socially prescribed perfectionism indirectly predicted depressive symptoms via anti-mattering (in a university sample). Study three tested an extended EMPDS that included suicide ideation and a new integrated model combining the PSDM and EMPDS, which included markers of social disconnection and existentialism as mediators. In the EMPDS, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past across samples. In the integrated model, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past across samples. Study four provided the first longitudinal test of these models. In the EMPDS, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past (in a community sample). In the integrated model, socially prescribed perfectionism indirectly predicted suicide ideation via anti-mattering (in a university sample), and indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past (in a community sample). Collectively, studies indicate that the PSDM and EMPDS partly explain *why* perfectionism contributes to depressive symptoms and suicide ideation. Findings suggest that anti-mattering and difficulty accepting the past are important mediators

for future research, and that suicide ideation should be included in future tests of the PSDM and EMPDS.

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## Chapter 1: Introduction to the thesis

*“Is there no way out of the mind?”* – Apprehensions by Sylvia Plath.

Sylvia Plath was a gifted poet, novelist, and short story writer, who won a Pulitzer Prize. Notably, Plath was a self-proclaimed perfectionist, who was plagued by her perfectionism. For a woman of her era, she was deeply ambitious and highly invested in her writing. Yet, Plath was greatly concerned with recognition and desire for success, and was never satisfied. Despite her success, Plath was unable to garner approval from her mother nor herself (Plath, 2000). Plath’s creative expressions, however, allowed her to express her darkest and innermost feelings, where her sadness was often reflected in her writing. Plath fought an inner battle, which was likely exacerbated by her isolation, troubled relationships and life events. Plath suffered from severe bouts of depression, underwent psychiatric hospitalization, and made several suicide attempts. She sadly took her own life at the age of 30.

### 1.1 Preface

Across the globe, we face a mental health epidemic (e.g., Office for National Statistics, 2022; World Health Organization, 2021). Rates of depressive symptoms and suicide-related outcomes, in particular, are increasing (Twenge et al., 2019; Vos et al., 2017; World Health Organization, 2017). Twenge and colleagues (2019), for instance, found that serious psychological distress and suicide-related outcomes rose exponentially from 2008 to 2017 in US young adults, with weaker and less consistent increases found among adults aged 26 years and over. In line with these trends, recent research have found that levels of perfectionism are on the rise (Curran & Hill, 2019). In a meta-analytic review, Curran and Hill (2019) found cohort differences in perfectionism to increase from 1989 to 2016 in 41,641 British, American, and Canadian college students. This is important as research

suggests perfectionism contributes to the onset of both depressive symptoms and suicide ideation (Limburg et al., 2017; Smith et al., 2016; Smith et al., 2018a). Better knowledge and understanding of the factors that underpin this relationship is critical to help curb the rise in mental health problems and to inform prevention and intervention efforts.

Depressive symptoms are an important public health concern (World Health Organization, 2017). The occurrence of depressive symptoms is much greater than depressive disorders, particularly within non-clinical populations (Judd et al., 2002). While depressive symptoms may not impact daily functioning to the same degree as depressive disorders, depressive symptoms can still cause significant impairment to one's health and quality of life (Ayuso-Mateos et al., 2010). Depressive symptoms range on a continuum from mild to severe with increasing severity associated with the number of symptoms experienced and the persistence of symptoms (Ayuso-Mateos et al., 2010). Symptoms include low mood, irritability, a loss of interest in activities, changes in appetite, difficulty sleeping or excessive sleeping, a lack of concentration and an inability to make decisions, somatic problems, fatigue, feelings of guilt, low self-esteem, and even suicide ideation (American Psychiatric Association, 2020).

Suicide ideation is broadly defined as thoughts of ending one's own life, which can range from passive thoughts to active planning of suicide (Turecki et al., 2019). However, challenges exist in defining and measuring suicide ideation. In the suicide literature, diverse nomenclature is used to define similar phenomena (Turecki et al., 2019). Some researchers, for instance, consider planning, motivation, and suicidal intent to be key defining features of suicide ideation (Silverman, 2016). There are also questions as to whether there should be a clear distinction between fleeting and chronic suicidal thoughts, and passive (e.g., thoughts about not wanting to live) and active suicide ideation (e.g., thoughts or plans about how to die; Silverman, 2016). Despite the varied nomenclature, it is well-established that thoughts of

suicide are often associated with heightened distress and precede suicide attempts and deaths (Beck et al., 2000). In addition, suicide ideation represents a much larger proportion of the population than suicide attempts, particularly within non-clinical samples, and is therefore an important marker to be investigated (Jobes & Joiner, 2019). In this regard, it is important for future research to further our understanding of the distinct risk factors and underlying mechanisms contributing to suicide ideation, such as perfectionism.

Perfectionism is a personality trait characterized by the setting of unrealistic standards and harsh self-criticism (Frost et al., 1990). While various conceptualizations of perfectionism exist, Hewitt and Flett's (1991) conceptualization is arguably the most widely used. Hewitt and Flett (1991) proposed a multidimensional model formed of three dimensions: self-oriented perfectionism, socially prescribed perfectionism and other-oriented perfectionism. Self-oriented perfectionism is characterized as setting irrational standards for oneself and being overly self-critical. Socially prescribed perfectionism involves a tendency to perceive others as excessively demanding. Whereas, other-oriented perfectionism involves demanding perfection from others and being highly critical of others. Each dimension is differentially related to various mental health outcomes (e.g., Limburg et al., 2017). Socially prescribed perfectionism, however, is the dimension which is more consistently and strongly associated with mental health problems, including depressive symptoms and suicide ideation (e.g., Limburg et al., 2017; Smith et al., 2016; Smith et al., 2018a).

The Perfectionism Social Disconnection Model (PSDM) is one theoretical framework that aims to explain the relationship between perfectionism and mental health problems (Hewitt et al., 2006). This model suggests that socially prescribed perfectionism (and to a lesser extent, self-oriented perfectionism and other-oriented perfectionism) generate social disconnection, which in turn, lead to mental health problems (Hewitt et al., 2017). A wealth of research has been conducted in support of the PSDM examining depressive symptoms as

an outcome in various samples, including clinical, university, and community samples (e.g., Flett et al., 2012; Hewitt et al., 2020; Rnic et al., 2021). Research examining suicide ideation or behaviour as an outcome in the PSDM, however, is scarce, and has only been conducted in clinical samples (e.g., Roxborough et al., 2012). In addition, most studies on the PSDM have relied on cross-sectional or two-wave longitudinal designs, yet three-wave longitudinal designs are required to provide a more robust test of the underlying relationships (Cole & Maxwell, 2003). Future research examining the PSDM with suicide ideation as an outcome in non-clinical samples, in addition to more robust longitudinal tests of the PSDM are warranted.

One interpersonal factor found to play an important role in the PSDM is mattering (e.g., Flett et al., 2012). Mattering is defined as the feeling that one is important and significant to others (Rosenberg & McCullough, 1981). Perfectionism is conceptually linked to mattering. This is based on the premise that only when expectations are met, people high in perfectionism will feel like they matter (Flett, 2022). A new construct, termed anti-mattering, has also been proposed. Anti-mattering is characterized by feelings of not mattering, in addition to feeling insignificant and marginalized by others (Flett, 2018). This construct is deemed more extreme than low feelings of mattering and is more strongly related to mental health problems (see Flett, 2018; Flett et al., 2022b). In this regard, anti-mattering may play a more important role in the relationship between perfectionism and mental health problems, however, to date, no research has examined anti-mattering as a mediator and marker of social disconnection in the PSDM.

Other theoretical models exist which aim to explain why perfectionism lead to mental health problems. One such model is the Existential Model of Perfectionism and Depressive Symptoms (EMPDS; Graham et al., 2010). This model suggests that existential factors (i.e., difficulty accepting the past) explain why socially prescribed perfectionism leads to

depressive symptoms. Difficulty accepting the past is defined as viewing life experiences as incoherent, dissatisfying, and meaningless (Graham et al., 2010). Research has examined the EMPDS in relation to depressive symptoms in various samples (e.g., Smith et al., 2020a). The EMPDS, however, has not been extended to include other mental health problems, such as suicide ideation, despite theory and research suggesting that suicide ideation may be an important addition to the model (e.g., Butler, 1963; Rasmussen et al., 2008; Smith et al., 2020a). Moreover, as with research on the PSDM, most studies have examined the EMPDS in cross-sectional or two-wave longitudinal designs (Sherry et al., 2015; Smith et al., 2020a; Smith et al., 2020b). Future research extending the EMPDS to include suicide ideation and more robust longitudinal tests of the EMPDS are warranted.

Notably, theoretical models such as the PSDM and EMPDS have so far been studied individually. Studying theoretical models separately, however, prevents evaluations of unique contributions. It is therefore important for research to integrate the PSDM and EMPDS to compare competing explanations and to test their predictive ability. Integrating the PSDM and EMPDS would provide a more complete understanding of the relationship between perfectionism and depressive symptoms, and perfectionism and suicide ideation. Future research, then, is needed to integrate explanatory models of the perfectionism-depressive symptoms and perfectionism-suicide ideation relationship.

Against this backdrop, the overarching aim of the thesis is to advance understanding of the relationships between perfectionism and depressive symptoms, and perfectionism and suicide ideation, by extending, integrating, and testing the PSDM and EMPDS. The current thesis advances understanding of the perfectionism-depressive symptoms and perfectionism-suicide ideation relationship in several respects. These include (1) examining suicide ideation as an outcome in the PSDM in non-clinical samples (university and community samples) for the first time, (2) examining anti-mattering (alongside mattering) as a mediator and marker of

social disconnection in the PSDM for the first time, (3) conducting one of the most robust tests of the PSDM, particularly in relation to suicide ideation, (4) extending the EMPDS to include suicide ideation, (5) conducting one of the most robust tests of the EMPDS, and (6) integrating the PSDM and EMPDS for the first time.

## 1.2 Mental Health Prevalence

Depression is the leading cause of disability worldwide (Vos et al., 2017). Globally, over 280 million people suffer from depression, representing approximately 3.8% of the world's population (World Health Organization, 2021). In line with this trend, evidence suggests the global prevalence of depressive symptoms is on the rise (Vos et al., 2017; World Health Organization, 2017). In the UK population, prevalence rates are also high. It is estimated, for instance, that 24% of women and 13% of men in England are diagnosed with a depressive disorder in their lifetime (McManus et al., 2016), representing a significant proportion of the population. These rates are alarming given the distress associated with depression.

Depressive symptoms and depressive disorders are associated with vast costs at the individual and societal level (World Health Organization, 2017). At the individual level, depressive symptoms and depressive disorders are often highly debilitating and cause immense suffering. The symptoms associated with depressive symptoms and depressive disorders can lead to difficulty functioning in many areas, including social relationships, home life and work (World Health Organization, 2021). At a societal level, recent estimates are that mental health problems, including depressive symptoms and depressive disorders, cost the UK economy approximately £118 billion per year, with a large portion attributed to costs of lost productivity (McDaid et al., 2022). In all, both the individual and societal costs are profound.

Like with depressive symptoms, suicide is an important global health problem. Around 700,000 people die from suicide per year and many more attempt suicide (World Health Organization, 2021). Alarmingly, estimates suggest that the numbers of suicides, too, are increasing and will exceed one million by 2030 (World Health Organization, 2017). In England and Wales alone, 5583 suicide deaths were reported in 2021, 6.9% higher than the

number of suicides reported in 2020. This number is equivalent to a mortality rate of 10.7 deaths per 100,000 people (Office for National Statistics, 2022). These statistics are not just numbers. Instead, they represent lives and devastating losses which have the potential to be prevented.

Suicidality (i.e., suicidal thoughts/ideation, attempts, and completion) is distressing for both the individual impacted and those around them. Each suicide is a personal tragedy, where loved ones are tormented by unimaginable loss. A suicide is described as a ripple effect, with those closest to the person most severely affected (O'Connor, 2021). Research suggests that approximately 135 people will know a person who dies by suicide (Cerel et al., 2019), evidencing its extensive reach. Even those who do not directly know the person can still be affected. Whether or not suicide ideation leads to suicide attempts or completion, suicide ideation often represents unbearable pain, anguish, and feelings of being trapped.

Most suicide attempts are preceded by suicide ideation, however suicide ideation often does not lead to a suicide attempt (Klonsky & May, 2014). Suicide ideation is highly prevalent worldwide (Borges et al., 2008; Nock et al., 2008). In the UK, for example, 20.6% of people experience suicidal thoughts in their lifetime (McManus et al., 2016). Some theorists suggest that thoughts of suicide may not represent a wish to die, but rather a feeling that ending one's life may be the only possible solution to end pain and suffering (Shneidman, 1993; Williams, 2001). Suicide ideation often impedes upon one's quality of life and the lives of those around them. Those who experience suicide ideation, for instance, may have distressing thoughts that they are worthless, alone, and are a burden to others. This can be extremely difficult for family and friends, too, who may live in fear of a loved one taking their life.

Young adults are particularly vulnerable to experiencing common mental health problems, such as depressive symptoms. For example, approximately three quarters of adults



who experience mental health problems do so before the age of 24 (Kessler et al., 2005). Evidence also suggests that young adults are now more likely than their previous generations to suffer from mental health problems (Stansfeld et al., 2016). In line with this trend, Twenge et al. (2019) found that rates of major depressive episodes increased from 2009 to 2017 in young adults in the US aged 18-25 years. Similarly, in the UK prevalence rates of common mental disorders such as depressive symptoms in 16-24-year-olds are at their highest (McManus et al., 2016).

Latest evidence has found that depressive symptoms are rife in university students (e.g., Pereira et al., 2019). This is in line with data which indicates that university students are disclosing mental health problems to their higher education institution more than ever before (Thorley, 2017). Over the past 10 years, there has been a fivefold increase in the number of students who have disclosed a mental health problem to their higher education institution. Consequently, universities are experiencing dramatic increases in students seeking support, predominantly through access to university counselling services (Thorley, 2017). Despite this, significant numbers of students who do have a mental health problem do not report it to their institution (Unite students, 2016). The prevalence rates of mental health problems, then, are likely to be even higher than is currently known.

Suicide ideation is highly prevalent among young people and university students worldwide, too (e.g., McManus & Gunnell, 2020; Sivertsen et al., 2019; Twenge et al., 2019). Suicide is the fourth leading cause of death for 15- to 29-year-olds worldwide, indicating a particularly 'at-risk' group (World Health Organization, 2021). These trends are also seen in the UK student-aged population. McManus et al. (2016), for instance, found that 13% of males and 22% of females aged 16-24 years reported experiencing suicidal thoughts, and a third of which reported making a suicide attempt within their lifetime. Moreover, a record number of students in the UK died by suicide in 2017 (Office for National Statistics, 2018).

These trends form the backdrop for the current thesis – prevalent and rising mental health problems, particularly among young people. A state of affairs that has led many researchers and commentators to raise the alarm of an impending epidemic of mental ill-health (e.g., Office for National Statistics, 2022; World Health Organization, 2021). With little sign that these trends are abating, there is currently an urgent need to better understand risk and preventative factors for depressive symptoms and suicide ideation. This thesis, then, aims to elucidate mechanisms which contribute to the prevalence rates of depressive symptoms and suicide ideation currently seen. In doing so, it is hoped that greater understanding of the risk factors can better inform preventative efforts and help to curb the rise in mental health problems.

### **1.3 Depressive disorders and depressive symptoms**

*“Intoxicated by madness, I’m in love with my sadness”* – Sylvia Plath (Plath, 1963).

Depressive disorders are serious and common mental disorders (American Psychiatric Association, 2020). Two of the most common include major depressive disorder and persistent depressive disorder (viz. dysthymia), however other types exist such as bipolar disorder and seasonal affective disorder. Major depressive disorder is a pathological syndrome that affects the way people think, feel, and act (American Psychiatric Association, 2020). This disorder is severe and causes clinically significant distress and impairment in functioning. Major depressive disorder captures much more than feelings of sadness and instead involves a range of symptoms (American Psychiatric Association, 2020). According to the Diagnostic and Statistical Manual for mental disorders, 5<sup>th</sup> edition (DSM-5; American Psychiatric Association, 2013), for a diagnosis of major depressive disorder, an individual must experience five or more symptoms for a minimum of two weeks.

Depressive symptoms are more common than depressive disorders. Many people experience symptoms of depression, for instance, but do not meet diagnostic criteria for a depressive disorder (Judd et al., 2002). While depressive symptoms do not impact daily functioning to the same extent as a depressive disorder, depressive symptoms can still cause considerable distress and impairment (Judd et al., 2002). Depressive symptoms include feelings of sadness, irritability, a loss of interest or pleasure in activities, changes in appetite, insomnia or excessive sleeping, an inability to concentrate and make decisions, somatic disturbances, fatigue or loss of energy, feelings of guilt, self-blame, and thoughts of death or suicide (American Psychiatric Association, 2020). Depressive symptoms can persist over time and have the potential to predict the onset of a depressive disorder (e.g., Lee et al., 2019; Tram & Cole, 2006).

It is important for research and clinical practice to distinguish between depressive symptoms and depressive disorders. One key difference between depressive symptoms and depressive disorders is that depressive symptoms are viewed as dimensional, whereas depressive disorders are viewed as categorical (e.g., a person either meets criteria for a depressive disorder or they do not; Klein, 2008). In this regard, depressive symptoms range on a continuum from mild to severe and are better suited when examining non-clinical populations. In addition, given that depressive symptoms are a predictor of more severe depressive disorders, it is vital to better understand factors contributing to depressive symptoms (Lee et al., 2019). From a clinical perspective, treating depressive symptoms early has the potential to prevent the onset of a depressive disorder (Cuijpers et al., 2014). In the next section of the thesis, several theoretical models of depression are discussed to aid in understanding of its onset.

#### **1.4 Models of depression**

Several theoretical models exist that offer differential perspectives in understanding depression. These theoretical models capture biological, social, and psychological factors associated in the development of depression. Existing models can be categorised as behavioural, cognitive, psychosocial, genetic, and integrative models. In this section, the major models in this area are described, starting with earlier models of depression, and ending with more recent, expansive, and integrative models of depression. In doing so it is made clear how depression has been previously understood and is now currently understood. While each theory is important in regard to our understanding of depression, it is apparent that researchers increasingly recognise the importance of an integrative approach. With this in mind, this section ends with an extended summary of Beck and Bredemeier's (2016) unified model, which is the most integrative model of depression to date.

An early behavioural model by Lewinsohn (1974) suggests that depressive symptoms result from a low rate of response-contingent positive reinforcement. When a behavioural response (e.g., initiating a conversation) fails to garner positive reinforcement, individuals are less likely to engage in the response again, preventing positive reinforcement from future behavioural responses. This low rate of positive reinforcement leads to a lack of reward, feelings of dysphoria and creates vulnerability for depressive symptoms. Lewinsohn (1974) proposed that depressed people typically have heightened self-awareness and self-criticism which often leads them to withdraw from others. Depressive symptoms are then thought to be reinforced by the social environment that responds with sympathy, care and concern and ultimately rewards the depressed person's low rate of response. In addition to withdrawal from others, Lewinsohn (1974) posits that individuals experiencing depressive symptoms may not possess sufficient social skills, which also prevents positive reinforcement from being elicited. While research largely support tenets of Lewinsohn's model, it is no

longer the central focus of depression research. Nevertheless, research suggests this model captures important characteristics of depression (Ingram et al., 2009).

In later years, Lewinsohn recognised the need for a more multifaceted approach and since refined their model (Lewinsohn et al., 1985). Lewinsohn et al. (1985) subsequently integrated knowledge concerning life events, cognitive processes and interpersonal functioning and their role in the onset of depression. In their revised theory, Lewinsohn et al. (1985) proposed that depression is caused by the interaction of risk factors and/or inadequate coping skills in combination with stressful life events. Consequently, life events and dysphoric mood lead to a decrease in response-contingent reinforcement. As a result, individuals become self-focused, self-critical, and highly attuned to discrepancies between personal standards and actual standards, leading to social difficulties, withdrawal from others, and a spiral into a deeper state of depression (Ingram et al., 2009). Individual thought processes become extremely negative and ultimately lead to social incompetency and rejection. Lewinsohn et al.'s (1985) theory captures how depressive symptoms lead to a vicious cycle which perpetuates the process.

From a cognitive perspective, Beck (1967, 1976) proposed the cognitive theory of depression. Beck suggested that depressed individuals engage in cognitive bias, by which they often focus on negative aspects of a situation, distorting and misinterpreting information, including catastrophising and overgeneralising events. Beck also suggested that depressed individuals hold a negative self-schema developed during childhood, which may stem from negative experiences. Together, cognitive biases and negative self-schema maintain a cognitive triad, in which negative and irrational views are developed of the self (e.g., "I'm worthless"), the world (e.g., "No-one values me"), and the future (e.g., "I'm hopeless because things will never change"; Beck, 1967). However, a central notion to Beck's model is that depressive schemata may only be triggered in the presence of stressful life events (e.g., Scher

et al., 2005). For instance, a dysfunctional attitude such as “I’m worthless”, may only be triggered following a stressful life event, such as social rejection (Hankin et al., 2008). Overall, research has provided support for Beck’s (1967, 1976) cognitive theory of depression (e.g. Abela & D’Alessandro, 2002).

Coyne (1976) proposed an interpersonal theory of depression. This theory posits that individuals exhibiting depressive symptoms attempt to counteract feelings of guilt or low self-worth by excessively seeking reassurance from others. While others may first provide support, over time, they are likely to grow annoyed and frustrated and subsequently rebuff them, withdrawing their support. Consequently, depressed individuals will perceive rejection from others, which further exacerbates their depressive symptoms. In support of this model, there is evidence that depressed individuals are sometimes rejected by others in their social environment (e.g., Joiner & Metalsky, 1995). In addition, research suggests excessive reassurance seeking interacts with perceived social support to predict development of depressive symptoms (Haefel et al., 2007).

More recently, psychosocial models were thought to play a role in the onset of depression. Psychosocial factors, such as stressful life events, are deemed to be important in explaining the etiology of depression. The stress exposure model, for instance, is a prominent theory which postulates that exposure of negative life events increase vulnerability to depression (see Monroe & Simons, 1991). Research suggests that acute negative life events are often tied to the first onset of depression, whereas chronic life events are often tied to the recurrence of depression (e.g., Liu & Alloy, 2010; Monroe & Harkness, 2005; Stroud et al., 2011). In particular, negative life events pertaining to interpersonal conflicts and stressors appear to be particularly predictive of depression (e.g., Sheets & Armev, 2020; Sheets & Craighead, 2014; Stroud et al., 2011). However, given that many people who experience stressful life events do not develop depression, it is thought to be the interpretation of and

response to negative and stressful life events which determines subsequent vulnerability to depression (Ingram et al., 2009).

A further expansion to this model is that depression can also precede stress generation. In this regard, the relationship between stress and depression is considered to be reciprocal (Hammen, 1991, 2006). Negative life events, for instance, often precede depression, and in turn, because depression compromises a person's ability to function efficiently, the occurrence of stressful life events may be magnified (Paykel, 2003). Research also suggests that personality traits may predispose an individual to generate stress reactivity to negative life events, and vulnerability to depression (Ingram et al., 2009). For instance, personality traits, interpersonal factors, and behavioural tendencies, such as neuroticism (Kendler et al., 2003), perfectionism, (Flett et al., 1995), self-criticism (Shahar et al., 2004), and poor interpersonal problem solving (Davila et al., 1995) are believed to influence reactivity to negative life events. Diathesis-stress and vulnerability models of depression have received substantial support (e.g., Cole et al., 2006). In particular, consistent support has been found for the emergence of negative self-schemata following stressful life events in the development of depression (e.g., Scher et al., 2005).

Another theoretical model of depressive symptoms is the genetic vulnerability-stress hypothesis. This model posits that specific candidate genes may predispose individuals to depression following a stressful event (e.g., Caspi et al., 2003). For instance, it is suggested that individuals who possess one or two short alleles on a gene involved in serotonin reuptake (5-HTTLPR) are more susceptible to depressive symptoms, but only in the face of a stressful life event (Caspi et al., 2003). This model highlights that genetic vulnerability or negative life events alone are not enough to instigate depression. Rather it is the co-occurrence of both genetic vulnerability and negative life events that are necessary to trigger its onset (Ingram et al., 2009). Genetic vulnerability in regards to the 5-HTTLPR transporter gene, then, is

considered to play a moderating role in the relationship between stressful life events and depression (Caspi et al., 2003).

Research examining the role of genetic vulnerability in the onset of depressive symptoms is mixed, however (e.g., Conway et al., 2012; Kendler et al., 2005; Vrshek-Schallhorn et al., 2014; Munafò et al., 2009; Risch et al., 2009). On one hand, meta-analytic reviews which adopted stringent criteria in regard to studies concluded, found no evidence to support that the serotonin transporter genotype interacts with stressful life events to predict depression (Munafò et al., 2009; Risch et al., 2009). On the other hand, Karg et al.'s (2011) meta-analytic review including less stringent criteria and a larger number of studies supported the moderating effect of the 5-HTTLPR polymorphism on the relationship between stress and depression. While this debate remains, Taylor & Munafò, (2016) advanced this line of research by conducting a study which triangulated meta-analyses and highlighted that findings of these meta-analytical reviews largely depend on methodological and analytical choices made.

In summary, a number of theoretical models have been produced to explain the etiology of depression. These include behavioural, cognitive, psychosocial, interpersonal, and genetic models. Each model is important in understanding the development of depression, and suggest that various risk factors are involved in the onset of depression, including low rate of response-contingent reinforcement, cognitive biases, negative self-schemas, stressful life events, and excessive reassurance seeking. However, while some of these models do acknowledge that vulnerability factors (e.g., cognitive biases) may only lead to depression under certain conditions (e.g., stressful life events), early theoretical models still overlook the interaction of other important risk factors involved in the onset of depression. As such, there is a clear need for more integrative models of depression which combine its many risk factors. In an attempt to bridge factors involved in the development of depression, Beck and



Bredemeier (2016) produced an integrated model of depression. Due to its importance, in the subsequent section, Beck and Bredemeier's (2016) integrated model is described in detail, followed by an account of existing research.

### **1.5 An integrated model of depression**

Early models of depression were built in relative isolation, and thus, models remain largely underdeveloped (Dobson & Dozois, 2011). However, in recent years, models of depression are becoming increasingly consolidative (e.g., Beck & Bredemeier, 2016). For instance, Beck and Bredemeier (2016) put forth an integrated model incorporating clinical, cognitive, neurobiological, and evolutionary perspectives to explain the onset of depression. According to their integrated model, early experiences/trauma and genetic risk contribute to the development of information processing biases and biological reactivity to stress, which, over time, can lead to the development of the cognitive triad (depressogenic beliefs regarding the self, the world, and the future; Beck & Bredemeier, 2016). Such beliefs are thought to instigate emotions, including sadness, anhedonia, and guilt. In turn, these depressogenic beliefs exacerbate information processing bias and biological reactivity to stress.

Depressogenic beliefs bestow vulnerability to depression. However, only when negative life events or stressors lead to the loss of a perceived vital resource, is a depression program activated. The evolutionary-based depression program gives rise to depressogenic behaviours, emotions, and cognitive appraisals as a response to conserve energy following the perceived loss of a vital resource. The depression program reinforces and strengthens depressogenic beliefs (Beck & Bredemeier, 2016). Once the depression program is activated, several factors can determine if or when the depression program is stopped, including social support, engagement in cognitive restructuring and problem-solving. Conversely, cognitive processes, such as ruminative thinking and social conflict may serve to generate stress and exacerbate the depression program (Beck & Bredemeier, 2016). Beck and Bredemeier's

unified model has been well-received and is likely to pave the way for future more integrative models of depression.

While produced relatively recently, researchers have supported the proposed relationships within Beck and Bredemeier's (2016) unified model. Early research on Beck's cognitive theory provides support for the notion that cognitive biases and negative self-schema following a stressful life event can lead to depression (e.g., Hankin et al., 2008). In addition, LeMoult (2020) conducted a review providing support for the interplay of cognitive and biological responses to stress, as proposed in Beck and Bredemeier's (2016) model. In particular, LeMoult summarized the substantial empirical support attesting that biological and cognitive theories do not work in isolation. Instead, LeMoult highlights the need to consider the reciprocal influence of biological and cognitive responses to stress in predicting depression. In summary, while there are not many direct tests of Beck and Bredemeier's (2016) model, the theoretical background of the model is favourable among researchers and provides an important framework for integrating and studying depression from multiple perspectives.

### **1.6 Risk factors of depression**

Outside of the formalised models of depression, there are many correlates and risk factors. However, notably the terms correlates and risk factors are often used inconsistently and imprecisely (Kraemer et al., 1997). According to Kraemer et al. (1997), a *correlate* refers to a variable that is simply associated with an outcome variable. Conversely, a *risk factor* is a variable that precedes an outcome variable and establishes temporal precedence. A risk factor, thus, indicates an increased likelihood of developing a condition, such as depression (Kraemer et al., 1997). Correlates and risk factors of depressive symptoms have been examined extensively in the literature, and it is important to distinguish correlates from risk factors (predictor variables). This is because identifying risk factors of depression can

improve understanding of underlying mechanisms and guide evidence-based prevention for depression. A focus solely on correlates, however, are not as informative and may instead misguide prevention and intervention efforts.

There are numerous risk factors of depressive symptoms. These include individual demographics (Hamilton et al., 2015) and personality vulnerabilities such as neuroticism (Lahey, 2009) and perfectionism (Smith et al., 2016). Stressful life events and nonsevere life events, particularly those of an interpersonal nature (Orth et al., 2009; Stroud et al., 2011; Sheets & Craighead, 2011), also generate risk for depressive symptoms. For instance, evidence suggests that loneliness (Cacioppo et al., 2006; Cacioppo et al., 2010), poor family and peer relationship quality (Eberhart & Hammen, 2006), history of bullying victimization in childhood (Ttofi et al., 2011) and difficulties in forming close relationships and depending on others (Eberhart & Hammen, 2006) predict depressive symptoms over time. Research has found that an absence of positive wellbeing and emotionality (Wood & Joseph, 2010; Khazanov & Ruscio, 2016) and mental health problems such as low self-esteem (Orth et al., 2009; Sowislo & Orth, 2013), anxiety (Jacobson & Newman, 2017), and eating pathology (Puccio et al., 2016) contribute to risk of depressive symptoms too. Finally, additional risk factors for depressive symptoms include sleep disturbances (Lee et al., 2013), lack of positive expectations hopelessness (Horwitz et al., 2017), anxious attachment cognitions (Eberhart & Hammen, 2006), information processing biases (Wells & Beevers, 2010), overgeneralized autobiographical memory recall (Brittlebank et al., 1993; Gibbs & Rude, 2004), and prior history of depressive symptoms (Judd et al., 2002).

Some of these risk factors have been summarized in meta-analytic reviews. Ttofi et al. (2011) conducted one of the first meta-analytical reviews examining bullying victimization as a risk factor for depression in later life, controlling for other risk factors in childhood. A total of 29 longitudinal studies were included in the review. Studies included varied in regard to

the number of covariates controlled for at baseline, the age of participants when bullying victimization was measured, and the age of participants when depressive symptoms were measured. The length of follow-up ranged from 1 to 36 years. Findings revealed that bullying victimization was a significant predictor of later depression, even when controlling for many other childhood risk factors. Effect sizes were smaller the longer the length of follow-up and larger the younger age of the child when exposed to bullying victimization. Effect sizes were not significantly related to the number of covariates controlled for.

In the following years, Sowislo and Orth (2013) conducted a meta-analytic review to determine whether low self-esteem contributes to depressive symptoms over time or whether depressive symptoms erode self-esteem over time. The authors meta-analyzed the available longitudinal data, which included 77 longitudinal studies on self-esteem and depression in various samples, such as children, adolescents, college students, older adults and clinical samples. Studies differed substantially in regard to both the sample characteristics and methodological characteristic including the time lag between assessments and measures used to assess self-esteem and depression. Prospective effects of the relationship between self-esteem and depression were examined controlling for prior levels of the predictor variables. Findings revealed that low self-esteem predicted depressive symptoms over time. The relationship was significantly stronger than the effect of depression on low self-esteem.

A later meta-analytical review by Khazanov and Ruscio (2016) examined the relationship between low positive emotionality and depression over time. This meta-analysis included 59 studies in various samples, including child, adolescent, and adult samples. Time lags varied across studies and ranged from one month to 228 months. Findings revealed that low positive emotionality predicted depression over time. While this relationship remained statistically significant, it was markedly attenuated when baseline levels of depression were controlled for. Findings were consistent across varying time lags. In addition, the authors

found that the relationship between low positive emotionality and depression was stronger in adult samples than child and adolescent samples.

There are also two meta-analytical reviews which have examined whether certain mental health problems (i.e., eating pathology and anxiety) are risk factors for depression (Jacobson & Newman, 2017; Puccio et al., 2016). In the first review, Puccio et al. (2016) examined whether eating pathology was a risk factor for depression. This meta-analysis included 30 longitudinal studies consisting of various samples, time lags and measures. The time lag of studies ranged from 0.25 to 84 months. Findings revealed that eating pathology significantly predicted depression over time. No variables were found to moderate this relationship including age, length of follow-up, and number of waves. Effect sizes were significantly stronger in the studies which assessed eating pathology as an eating disorder diagnosis relative to eating disorder symptoms and studies which measured depressive disorders as an outcome, relative to depressive symptoms. In addition, findings were also stronger between specific eating pathology types (i.e., eating disorder diagnosis and bulimic symptoms) on depression in younger participants.

In the second meta-analytic review, Jacobson and Newman (2017) examined whether anxiety and depression are bi-directional risk factors for one another, at both the symptom and disorder level. For anxiety symptoms predicting depressive symptoms, 29 prospective studies were included in the review. Time lags ranged from two weeks to 15 years. For anxiety disorders predicting depressive disorders, 38 prospective studies were included. Time lags ranged from 1.5 months to 25 years. Anxiety symptoms were found to predict depressive symptoms over time. In addition, anxiety disorders were found to predict depressive disorders over time. The length of time between measurements was found to moderate the strength of the relationship, where stronger relationships emerged over shorter periods of time. There was no evidence of publication bias in the review. In summary, these meta-analytic reviews

provide substantial support for several risk factors of depression, which include bullying victimization, low self-esteem, lack of positive emotionality, eating pathology and anxiety. Given the individual and societal costs of depression, it is vital that future research continues to identify its many risk factors.

In this section a detailed account of the various theoretical models of depression was provided, followed by an account of the many risk factors for depression, and a summary of meta-analytic work of risk factors for depression. In doing so, this section provides understanding of how the onset of depressive symptoms is complex and results from an interplay of factors. In addition, both early and current perspectives of the theoretical models of depression were described. In this regard, it is clearer how theoretical models of depression have evolved over time to become increasingly integrative. The most integrated model of depression – Beck and Bredemeier’s (2016) model – will therefore be used as a broad basis for current understanding in the field and will provide an important touchstone when examining depressive symptoms in alternative models of the thesis.

## **1.7 Suicide and suicide ideation**

*“See, the darkness is leaking from the cracks. I cannot contain it. I cannot contain my life” –*

Sylvia Plath (Plath, 1981).

While diverse nomenclature exists in defining suicide ideation and attempts, the current thesis provides definitions which are commonly accepted (see Turecki et al., 2019). Broadly, suicide ideation involves thoughts of ending one’s life (Turecki et al., 2019). Thoughts of suicide can be passive or active, whereby the risk of suicide progresses from relatively passive thoughts to more active thoughts or plans (Turecki et al, 2019). However, there is debate on whether planning, motivation, and suicidal intent are key defining features of suicide ideation (Silverman, 2016). Suicide attempts, in contrast, involve self-injurious

behaviours with actual intent to die (Turecki et al., 2019). Suicide ideation is found to predict both suicide attempts and suicide completion (Brown et al., 2000; Joiner, 2005), however, suicide ideation often does not lead to a suicide attempt (Nock et al., 2008). In this regard, suicide attempts and completion are behaviours with a low base rate, whereas the prevalence of suicide ideation is much greater (Nock et al., 2008). The continuum linking suicide ideation to completed suicide is referred to as suicidality.

### **1.8 Models of suicidality**

The onset of suicide ideation is complex and is thought to manifest from an interplay of biological, psychological, clinical, social, existential, and cultural risk factors (O'Connor & Nock, 2014). Many of the risk factors of suicidality are included within the theoretical models. Theoretical models of suicidality offer diverse perspectives to understand suicide ideation and behaviour. In this section, the major theories of suicidality are described beginning with the early theoretical models of suicidality and ending with more recent, comprehensive integrative models. In doing so, it will be clearer how models of suicidality have progressed over time to inform current advances in suicidality research.

In an early model of suicidality, Baumeister (1990) put forth the escape theory of suicide and proposed that falling short of standards due to unrealistically high expectations or the experience of negative life experiences or setbacks would lead to internalization of self-blame and self-aversion, generating a negative and harsh view of the self. Baumeister (1990) further theorized that individuals would likely engage in unintentional avoidance of meaningful thought termed cognitive constriction, involving narrowed thinking and 'tunnel vision'. Absence of emotion, irrational thoughts, and reckless behaviours, such as self-harm and social withdrawal are likely to surface, in which the notion of suicide becomes less threatening. Attempts to escape from life problems and a painful self-awareness may escalate to suicidality.

Research provides some support for the escape theory of suicide (e.g., Dean et al., 1996; Dean & Range, 1996). Dean and colleagues, for instance, conducted two studies examining Baumeister's escape theory of suicide. These studies examined perfectionism, life stress, anxiety, depression, reasons for living, hopelessness, and suicide ideation in university students. Findings revealed that socially prescribed perfectionism (i.e., perfectionistic beliefs believed to be imposed by others) was associated with hopelessness and suicide ideation and provided unique variance in suicide ideation (Dean et al., 1996). Moreover, causal ordering revealed an indirect relationship between socially prescribed perfectionism to suicide behaviours. In Dean and Range's (1996) study, significant paths emerged from socially prescribed perfectionism to low reasons for living to suicide ideation. Whereas, in Dean and colleagues' study (Dean et al., 1996), significant paths emerged from socially prescribed perfectionism to depression to hopelessness to low reasons for living to suicide ideation.

In another early model of suicidality, Shneidman (1993, 1999) proposed that psychache (i.e., unbearable psychological pain, including shame, hurt, anguish, and despair) is directly associated with suicidality, above other psychological factors such as depression and hopelessness. Psychache was thought to lead to suicide if the psychological pain exceeds an individual tolerance to the pain, to the extent which suicide is thought of as the only means of escape. Shneidman (1993) delineates six steps in the progression to suicide, including (1) life stressors, (2) genetic and social vulnerabilities, (3) perception of life stress as painful, (4) perception of pain as unbearable, (5) thought of suicide as a solution to end pain, and (6) level of pain which exceeds tolerance. It is important to note that Shneidman did not regard suicide as a psychiatric disorder, but rather a product of unbearable psychological pain resulting from thwarted psychological needs (Shneidman, 1993, 1999).

Cross-sectional research supports the role of psychache in suicidality, wherein psychache emerges as the psychological variable most strongly associated with suicidality,



suggesting that psychache is a pre-eminent motive for suicide (e.g., DeLisle & Holden, 2009; Flamenbaum & Holden, 2007; Troister & Holden, 2010; Troister & Holden, 2013). Building on this research, in a two-year longitudinal study in high-risk undergraduate students, Troister and Holden (2012) found psychache to predict change in suicide preparation independent of depression and hopelessness. Troister and colleagues (2013) subsequently conducted a five-month longitudinal study in general and high-risk undergraduate students and found psychache to be significantly associated with suicide ideation, controlling for depression and hopelessness. Similarly, in a four-year longitudinal study in high-risk undergraduate students, psychache (not depression or hopelessness) was found to predict significant changes in suicide ideation over four years (Montemarano et al., 2018). In summary, research demonstrates support for Shneidman's assertion of the importance of psychache in suicidality.

In a later model, Abramson and colleagues (1989, 2000) put forth the hopelessness theory of suicide. This theory suggests that "hopelessness depression" (viz. depression) is an important cognitive vulnerability factor for risk of suicide. Specifically, this negative cognitive style involves expectations that desired outcomes will not occur, expectations that aversive outcomes will occur and a sense that there is nothing one can do to change the situation (Abramson et al., 2000). Individuals who exhibit this cognitive vulnerability tend to adopt a bleak outlook of the future and a sense of helplessness to improve future prospects. This view of the future involves the tendency to attribute negative life events to stable and global factors (Abramson et al., 2000).

In support of Abramson and colleagues' perspective, research has found hopelessness to be a robust predictor of suicidality (e.g., Beck et al., 1989; Brown et al., 2000; Kuo et al., 2004). Early research, for instance, found hopelessness to emerge as a reliable predictor of suicide in a 10- and 20-year prospective study of psychiatric patients (Beck et al., 1989;

Brown et al., 2000). Research has also supported the hopelessness theory in non-clinical samples. Kuo et al. (2004), for instance, examined the role of hopelessness in predicting suicide ideation, attempts, and completion in a community sample of over 3000 participants over 13 years, controlling for depression and substance use disorders. The authors found hopelessness to predict suicide ideation, attempts and completion. In addition, the association between hopelessness and suicidality was stronger than the association between depression, substance use disorders, and suicidality.

Williams (2001) Cry of Pain model built upon existing theories of escape (Baumeister, 1990) and arrested flight (Gilbert & Allan, 1998). Arrested flight is drawn from the animal behaviour literature and describes a situation when an animal is defeated but is unable to escape (Gilbert & Allan, 1998). It is this state of entrapment which is thought to be particularly dangerous. This notion has been utilised to explain human behaviour in regard to suicidality. The Cry of Pain model, then, is an entrapment model of suicidality, which postulates that the perception of being entrapped in a stressful situation with no escape or rescue may lead to suicidality. Williams and colleagues (Williams, 2001; Williams & Pollock, 2001) propose that suicidal behaviour should be viewed as a 'cry of pain', rather than a 'cry for help'. Williams (2001) posits that suicidal behaviour does not necessarily reflect a wish to die, and instead reflects a wish to escape from unbearable pain.

There are few studies which have directly tested Williams' (2001) Cry of Pain model (e.g., O'Connor, 2003; Rasmussen et al., 2010; Taylor et al., 2011). In the first empirical study of this model, O'Connor (2003) found Cry of Pain model variables (i.e., defeat, entrapment/escape, no rescue) to be elevated in a suicidal patient group, relative to matched hospital controls. Cry of pain variables also enhanced statistical discrimination between suicidal patients and matched controls, providing support for this model. Building upon O'Connor's (2003) study, Rasmussen et al. (2010) found notable differences in Cry of Pain

variables (i.e., defeat, entrapment, no rescue) between repeat self-harmers, first-time self-harmers and matched controls. Internal entrapment and total entrapment was found to mediate the relationship between defeat and suicidal ideation, providing further support for this model. In summary, while the Cry of Pain model has not received widespread attention, this model made notable advancements in the field, with research recognising the importance of defeat and entrapment in suicide research (see O'Connor, 2011a). The Cry of Pain model, however, is no longer examined in isolation and has instead been built upon in more recent integrative models of suicidality (see 1.7 An integrated model of suicidality).

More recently, Wenzel and colleagues (Wenzel, & Beck, 2008; Wenzel et al., 2009) established the cognitive model of suicidal behaviour. This model posits that dispositional vulnerability factors (e.g., perfectionism) confer risk for psychiatric disturbances and suicidal behaviour following life stress. Under life stress, dispositional vulnerability factors lead to cognitive processes associated with psychiatric disturbances (e.g., depressive symptoms) and cognitive processes associated with suicidal acts. A suicidal crisis is more likely to occur with increasing intensity, frequency, and duration of cognitive processes. In a suicidal crisis, a person would experience thoughts and cognitions about ending one's life (Wenzel et al., 2009). Whether the cognitions develop into a suicidal act may depend upon the severity of the cognitions and the person's ability to tolerate the associated distress (Wenzel & Beck, 2008).

Some empirical work has examined the utility of the cognitive model of suicidal behaviour (e.g., Burke et al., 2016; Jager-Hyman et al., 2014; Moscardini et al., 2020). Jager-Hyman et al. (2014), for instance, found support for the cognitive model of suicidal behaviour and found that people who had recently attempted suicide were more likely than psychiatric controls to experience cognitive distortions, after controlling for depression and hopelessness. Providing further support for the model, Moscardini et al. (2020) found

suicide-specific cognitions to predict both current and worst-point suicide ideation in students with a history of suicide ideation. Attentional fixation mediated this relationship in relation to worst-point suicide ideation only. Additionally, over a two-year period, Burke et al. (2016) found cognitive content and processes (i.e., preferential endorsement of negative adjectives as self-referent and a negative inferential style) to present significant risk for suicide ideation in adolescents. In summary, evidence largely supports the cognitive model of suicidal behaviour in various samples.

Historically, theories of suicidality did not differentiate between suicidal ideation and suicidal attempts as distinct separate processes (Klonsky & May, 2014). In this regard, Joiner (2005) made a critical advance in suicide theories introducing the Interpersonal-Psychological Theory of suicidal behaviour – a framework which examines suicide ideation and the progression from suicide ideation to suicide attempts as separate processes with distinct risk factors. The Interpersonal-Psychological Theory of suicidal behaviour (Joiner, 2005; Van Orden et al., 2010) proposes that an individual must possess the desire and capability to die from suicide. This theory suggests that desire for suicide stems from unmet interpersonal needs: an unmet need to belong (Baumeister & Leary, 1995; Cacioppo & Patrick, 2008) resulting in thwarted belongingness, and an unmet need for social competence (Ryan & Deci, 2000) resulting in perceived burdensomeness. According to this theory, when thwarted belongingness and perceived burdensomeness results, desire for suicide develops (Van Orden et al., 2010). However, because suicidal desire is not sufficient to result in death by suicide, the Interpersonal-Psychological Theory suggests that individuals must also acquire the capability to die from suicide (e.g., capability to engage in lethal self-injury; Van Orden et al., 2010).

The Interpersonal-Psychological Theory of Suicidal Behaviour has been highly influential and has a substantial empirical foundation (e.g., Chu et al., 2017; Forkmann &

Teissman, 2017; Kleiman et al., 2014a; Kleiman et al., 2014b; Lamis & Lester, 2013).

Notably, however, across studies perceived burdensomeness emerges as more relevant to the Interpersonal-Psychological Theory in contrast to thwarted belongingness (e.g., Forkman & Teissman, 2017; Lamis & Lester, 2013; Ma et al., 2016). Ma et al. (2016) conducted a systematic review summarizing the findings from 58 empirical studies on the Interpersonal-Psychological Theory. Overall, perceived burdensomeness exhibited a robust association with suicidal desire, whereas thwarted belongingness exhibited a modest association with suicidal desire. In addition, acquired capability had a modest relationship with suicide attempts.

Chu et al. (2017) subsequently conducted a systematic and meta-analytic review summarizing research on the Interpersonal-Psychological theory. Meta-analyses using random effects were conducted in 122 published and unpublished samples. Chu et al.'s, (2017) findings supported the Interpersonal-Psychological Theory. For example, the interaction between thwarted belongingness and perceived burdensomeness were significantly associated with suicide ideation. In addition, the interaction between thwarted belongingness, perceived burdensomeness and capability for suicide was significantly associated with prior suicide attempts, however effect sizes were modest. Notably, though findings suggest that thwarted belongingness, perceived burdensomeness, and capability of suicide may predict suicide ideation and suicidal behaviour, given the small effect sizes, these constructs do not emerge as the sole predictor of suicidality. Rather, it is also important to integrate alternative risk factors and models alongside the Interpersonal-Psychological Theory to enhance the ability of predicting suicidality.

This section of the thesis described various models of suicidality. Early models of suicidality have been crucial in advancing understanding of the field and have helped to pave the way for current advances in suicide research. However, early models addressed

suicidality as a single phenomenon (e.g., psychache, escape from aversive self-cognitions, hopelessness; e.g., Abramson et al., 2000; Baumeister, 1990; Shneidman, 1993) and provided a rudimentary explanation of its etiology (Klonsky et al., 2016). In addition, early models of suicidality do not acknowledge that the risk factors for suicide ideation differ from the risk factors for suicide attempts (Klonsky et al., 2016). Current approaches are based on Joiner and colleagues (Joiner, 2005; Van Orden et al., 2010) work in this regard and utilise “ideation-to-action” frameworks (i.e., acknowledges suicide ideation and suicide attempts as separate processes with distinct risk factors; Klonsky & May, 2014). As such, in the next section, a comprehensive overview of the most integrative model of suicidality to date – the Integrated Motivational-Volitional model of suicidal behaviour – is provided, alongside a detailed summary of the research on this model.

### **1.9 An integrated model of suicidality**

Like Joiner’s Interpersonal-Psychological Theory, the Integrated Motivational-Volitional model of suicidal behaviour (O’Connor, 2011a) also utilises a “ideation-to-action framework”. The Integrated Motivational-Volitional model of suicidal behaviour (O’Connor, 2011a; O’Connor & Kirtley, 2018) offers a broad framework to understanding suicidality and draws upon existing models of suicide ideation, including the Cry of Pain model (Williams, 2001) and the Interpersonal-Psychological Theory of Suicidal Behaviour (Joiner, 2005). This model emphasises that psychological factors involved in suicidality should not be examined in isolation and instead depict a complex interplay of psychological factors (O’Connor, 2011a). The Integrated Motivational-Volitional model of suicidal behaviour is a tripartite model which maps out relationships among background factors and trigger events (pre-motivational phase), ideation and intention formation (the motivational phase), and behavioural enactment (volitional phase; O’Connor, 2011a).

A diathesis-stress framework provides the backdrop to the pre-motivational phase, which identifies that individual vulnerabilities (e.g., socially prescribed perfectionism and socioeconomic deprivation) confer risk for the onset of suicide ideation in the presence of stressful life events (e.g., relationship difficulties). Drawing upon Williams (2001) Cry of Pain model, the motivational phase highlights the importance of defeat, humiliation, and entrapment leading to suicide ideation. This phase draws upon 'arrested flight' which originates from evolutionary psychology and depicts feeling brought down (i.e., defeated) with no escape or rescue (i.e., entrapped). This concept also illustrates the tunnel vision often detected in individuals experiencing suicide ideation, where ultimately suicide may be perceived as the only source of escape (O'Connor & Kirtley, 2018). Fundamentally, this model posits defeat and/ or humiliation and entrapment to be the key predictors of suicide ideation. However, defeat and humiliation may also be characterized as social rejection and loss, which are often associated with suicidality (O'Connor & Kirtley, 2018).

Given that entrapment does not always result from feelings of defeat or humiliation, the transition from defeat to entrapment would depend on the presence or absence of threat-to-self moderators (e.g., social problem-solving, autobiographical memory biases, and rumination). These threat-to-self moderators are believed to have the strongest effect upon the defeat-to-entrapment relationship because these moderators are implicated in problem resolution (O'Connor & Kirtley, 2018). The final part of the motivational phase captures the transition from entrapment to suicide ideation. The Integrated Motivational-Volitional model of suicidal behaviour suggests that several motivational moderators will determine whether entrapment translates into suicide ideation. There are several motivational moderators that are thought to buffer against the emergence of suicide ideation, including reasons for living, belongingness, and connectedness. Conversely, the presence of motivational moderators,

such as feeling a burden, or having none or little social support will increase the likelihood that entrapment is translated into suicide ideation (O'Connor & Kirtley, 2018).

The volitional phase captures the transition from suicidal ideation to enactment. Whether those experiencing suicidal ideation will enact will depend upon volitional moderators, such as access to means, capability for suicide, impulsivity, exposure to suicide ideation from loved ones and fearlessness about death. The greater number of volitional moderators' present is thought to increase the likelihood that suicide ideation will translate into suicide attempts. A key aim of the model is to distinguish between factors which confer risk for suicide ideation and factors which may translate suicide ideation into suicidal behaviours (O'Connor, 2011a; O'Connor & Kirtley, 2018). Notably, though the model does not integrate an exhaustive number of variables to understand suicidality, it is suggested to be modelled as a framework to integrate other psychological factors specific to suicide ideation or behavioural enactment (O'Connor, 2011b).

The Integrated Motivational-Volitional model of suicidal behaviour has begun to accrue considerable empirical attention (e.g., Branley-Bell et al., 2019; Dhingra et al., 2015; O'Connor et al., 2013; Tucker et al., 2016; Wetherall et al., 2018; Wetherall et al., 2019; Wetherall et al., 2021). Research has supported the basic tenets of the model, including support for the motivational phase of the Integrated Motivational-Volitional model. Branley-Bell et al. (2019), for instance, examined the central tenets of the Integrated Motivational Volitional Model in three groups allocated based on their suicidal history: a suicide attempt group, a suicide ideator group, and a control group in a longitudinal study. Results revealed that both the suicide ideator and suicide attempt group differed significantly from the control group on pre-motivational and motivational variables (i.e., socially prescribed perfectionism, entrapment, defeat, burdensomeness, thwarted belongingness, hopelessness, resilience, and social support). Defeat and entrapment were found to be significant predictors of suicide



ideation, and mediation analyses revealed an indirect effect of defeat on suicide ideation via entrapment at baseline and one month later.

Emerging evidence also indicates that internal entrapment (i.e., feeling trapped within oneself and within one's own agonising thoughts and feelings; Gilbert & Allan, 1998) may be especially important to suicide ideation over time (Owen et al., 2018; Wetherall et al., 2021). Owen et al. (2018), for instance, found overall entrapment and internal entrapment (but not external entrapment i.e., trapped by external events and situational factors; Gilbert & Allan, 1998) to mediate the relationship between defeat and suicide ideation in a sample of bipolar disorder patients in a four-month follow-up. Likewise, Wetherall et al. (2021) conducted a longitudinal study examining the defeat-entrapment pathway within the Integrated Motivational Volitional model in a sample of young people over a 12-month period. Wetherall et al. (2021) replicated the findings of Owen and colleagues' (2018) study and found internal entrapment to predict suicide ideation 12 months later. Additionally, internal entrapment (but not external entrapment) was found to mediate the relationship between defeat and suicide ideation 12 months later.

There have been, nevertheless, some inconsistencies in findings between studies. For instance, in a prospective study, Taylor et al. (2011) found baseline defeat (but not entrapment) to predict suicide ideation 12 months later. Additionally, inconsistent with the Integrated Motivational-Volitional model, Tucker et al. (2016) found defeat to be directly associated with suicide ideation but not indirectly through entrapment in a sample of students experiencing recent suicide ideation. Likewise, Forkmann and Teissman (2017) found entrapment and perceived burdensomeness to predict suicide ideation in a community sample cross-sectionally. However, this study did not find support for the moderating role of perceived burdensomeness and thwarted belongingness in the relationship between entrapment and suicide ideation. Accordingly, more research is needed to elucidate some tenets of the

Integrated Motivational-Volitional model, such as the role of motivational moderators in the relationship between entrapment and suicide ideation.

Research has also found support for the volitional phase of the Integrated Motivational-Volitional model (e.g., de Beurs et al., 2017; Branley-Bell et al., 2019; Dhingra et al., 2015; Wetherall et al., 2018; Wetherall et al., 2021). Dhingra et al. (2015), for instance, found suicide attempters to differ significantly from suicide ideators on volitional factors, including fearlessness about death, impulsivity, and exposure to suicidal behaviour. Wetherall et al. (2021) also found volitional variables (e.g., fearlessness about death, impulsivity) to distinguish suicide attempters from ideators. Likewise, de Beurs et al. (2017) conducted a network analysis in a sample of individuals who had made a suicide attempt and found suicidal behaviour to be more directly associated with volitional phase variables, in contrast to motivational variables. In summary, evidence supports the notion that volitional phase variables distinguish suicide attempters from ideators consistent with the Integrated Motivational-Volitional model. Together, empirical evidence for the Integrated Motivational-Volitional model is promising.

### **1.10 Risk factors of suicide ideation**

Each theory of suicidality captures specific correlates, risk factors or a unique relation of risk factors (Franklin et al., 2017). However, like depressive symptoms, correlates and risk factors are often used interchangeably within suicide research (Franklin et al., 2017). As such, it is important to distinguish risk factors from correlates in predicting suicide ideation (Kraemer et al., 1997). This is particularly important given that confusion between correlates and risk factors in the literature may misguide research and prevention efforts of suicidality (Franklin et al., 2017). Moreover, it is also worth reiterating that risk factors for suicide ideation typically differentiate from the risk factors which translate suicide ideation into suicide attempts (Klonsky & May, 2014). In addition, though some theoretical models are

well supported, they often exclude common risk factors of suicide ideation (e.g., the Interpersonal-Psychological Theory; Van Orden et al., 2010).

Numerous risk factors for suicide ideation have been proposed in the literature. Some of these include demographics, such as lower socioeconomic status (Cohen et al., 2010; Franklin et al., 2017), personality vulnerability factors, including both neuroticism (Rappaport et al., 2017) and perfectionism (Smith et al., 2018a), and stressful life events (e.g., Howarth et al., 2020) including early life trauma (e.g., physical and sexual abuse; Goldston et al., 2016; Jorge et al., 2020). Further research has also identified sleep problems and poor subjective sleep quality (Bernert et al., 2014; Ribeiro et al., 2012) as important risk factors. Substantial evidence has found that various mental health problems, including trait anxiety (Goldston et al., 2016), generalized anxiety disorder (Bentley et al., 2016; Goldston et al., 2016), posttraumatic stress disorder, specific phobia, social anxiety disorder (Bentley et al., 2016), and depression (Ribeiro et al., 2018) contribute to suicide ideation. In addition, negative thinking styles and emotions including inattention (Sarkisian et al., 2019), negative cognitive bias (Beavers & Miller, 2004), emotion dysregulation (see Law et al., 2015; Miranda et al., 2013), negative interpretation inflexibility (Everaert et al., 2021), cognitive inflexibility (Miranda et al., 2012), and rumination (Miranda & Nolen-Hoeksema, 2007) have been identified as further risk factors for suicide ideation.

A number of social and interpersonal factors are risk factors for suicide ideation too. These include thwarted belongingness (Roeder & Cole, 2019), perceived burdensomeness (Chu et al., 2016; Roeder & Cole, 2019), low social support (e.g., Handley et al., 2012), loneliness (McClelland et al., 2020) and other social factors (e.g., family and peer problems and social isolation; Franklin et al., 2017). As identified in theoretical models of suicide, some of the key risk factors for suicide ideation include defeat (e.g., Taylor et al., 2011), internal entrapment (Owen et al., 2018), psychache (Montemarano et al., 2018; Troister et al.,

2013) and hopelessness (Kuo et al., 2004; Ribeiro et al., 2018; Roeder & Cole, 2019). Finally, impulsivity (Goldston et al., 2016), externalizing psychopathology (Franklin et al., 2017), non-suicidal self-injury (Guan et al., 2012), history of self-injurious behaviour (Chu et al., 2016; Ribeiro et al., 2016), family history of self-injurious thoughts and behaviours (Ribeiro et al., 2016), previous history of suicide ideation (Franklin et al., 2017; Ramchand et al., 2008; Ribeiro et al., 2016), and previous history of suicide attempts (Miranda et al., 2012; Ribeiro et al., 2016) are also important risk factors for suicide ideation.

Many known risk factors for suicidality have been examined in meta-analytic reviews. Bentley et al. (2016), for instance, conducted a meta-analytic review to determine the magnitude and clinical utility of anxiety and anxiety disorders as risk factors for suicide ideation, suicide attempts, and deaths by suicide. The review consisted of 65 longitudinal studies consisting of clinical samples, community-based samples, and samples with a history of prior suicidal thoughts or behaviours. The length of the follow-up period of studies included in the review ranged from 1 to 708 months. Findings revealed that anxiety was a statistically significant, albeit weak predictor, of suicide ideation and attempts, but not deaths by suicide. Estimates were reduced when accounting for publication bias. In summary, findings suggest that anxiety, when examined independently, is a relatively weak predictor of suicide ideation and attempts.

In another meta-analytic review, Ribeiro et al. (2016) examined self-injurious thoughts and behaviours as risk factors for suicidality. This review consisted of 172 longitudinal studies, formed primarily of self-injurious and clinical samples, with a smaller percentage of samples representing the general population. The length of the follow-up period of studies included in the review ranged from 1 week to 648 months. Findings indicated that prior self-injurious thoughts and behaviours were significant risk factors for suicide ideation, attempts, and deaths by suicide. Prior suicide ideation was found to increase

the likelihood of all outcomes, with the strongest effect being subsequent suicide ideation. A history of suicide plans was found to increase suicide deaths. In addition, a history of suicide attempts was found to increase the likelihood of all outcomes, with strongest support found for suicide attempts and weakest support found for suicide ideation. However, the effects of prior self-injurious thoughts and behaviours as risk factors for suicide-related outcomes were weaker than expected and adjusting for publication bias reduced estimates further. Effects remained consistent across sample severity, age, and study follow-up lengths.

Building on their earlier work, Ribeiro and colleagues (2018) later conducted a meta-analytical review examining the magnitude and clinical utility of depression and hopelessness as risk factors for suicide ideation, suicide attempts, and deaths by suicide. Studies in the review consisted of clinical samples, general population samples and self-injurious samples. There were 166 studies retained for analyses with the length of follow-up ranging from 1 to 708 months. Findings revealed that depression and hopelessness conferred risk for suicide ideation, suicide attempts, and death by suicide, however effects emerged as weaker than expected, particularly when accounting for publication bias. Effects also remained weak across age, severity, and follow-up length. Ribeiro and colleagues (2018) found greatest support for hopelessness, depression (measured by the Beck Depression Inventory) and major depression diagnoses as predictors of suicide ideation.

Franklin et al. (2017) conducted a comprehensive meta-analytic review of 365 longitudinal studies spanning over 50 years (pre-1984 to 2014) summarizing risk factors for suicide ideation, attempts, and deaths. Studies included in the review were examined in various samples, grouped into three categories: clinical samples, general population samples, and samples with prior history of self-injurious thoughts or behaviours. The length of follow-up ranged from 0.50 to 912 months. Given the extensive number of risk factors, Franklin et al. (2017) grouped risk factors for suicidality into 16 broad categories. Five broad risk factor

categories including demographics, internalizing psychopathology, externalizing psychopathology, prior suicidal thoughts and behaviours, and social factors consistently emerged as the strongest risk factors for suicidality. When examining within subcategories (specific risk factors) for suicide ideation, prior suicide ideation was by far the strongest predictor of present suicide ideation, followed by hopelessness, depression, history of abuse, and an anxiety diagnosis. Predictive ability tended to be stronger in general population samples, relative to clinical and prior history of self-injurious thoughts and behaviour samples. Longer studies did not provide better predictive ability.

In a recent systematic review and meta-analysis, Howarth et al. (2020) examined whether stressful life events are prospectively associated with suicide ideation and suicidal behaviour. Seven studies were retained for analyses and included samples of psychiatric inpatients, medical students, suicidal young adults from military medical settings, high-school students, and general population samples. Howarth et al. (2020) found the experience of stressful life events to be significantly associated with increased risk of suicide ideation. This relationship was more robust in younger adults and studies with a shorter-term follow-up. In addition, the relationship between the experience of stressful life events and suicide ideation was greater when the stressful event was experienced in the last year, than when the length of experiencing the stressful event was greater than one year. The evidence base was too limited to test the relationship between stressful life events and suicidal behaviours. In summary, given the far-reaching individual and societal costs of suicidality, it is crucial to identify risk factors, and mechanisms underpinning suicidality.

In this section, a detailed account of the various theoretical models of suicidality is provided, followed by an account of the many risk factors for suicide ideation, and a summary of meta-analytic work of risk factors for suicide ideation. In doing so, this section provides understanding of how the onset of suicide ideation is complex and results from a

complex interplay of factors. It is also worth reiterating that the risk factors of suicide ideation and suicide attempts vastly differ (Klonsky & May, 2014), hence the present section focuses on risk factors for suicide ideation, given that this outcome is a focus of the thesis. In summarizing the theoretical models of suicidality, it is apparent that the most comprehensive model is the Integrated Motivational-Volitional Model of suicidal behaviour (O'Connor, 2011a; O'Connor & Kirtley, 2018). As such, this model will be used as a broad basis for current understanding in the field and will provide an important touchstone when examining suicide ideation in alternative models of the thesis.

### **1.11 Chapter Summary**

In this chapter the global and UK prevalence of depression and suicide is first discussed, in addition to the individual and societal costs associated with these mental health problems. This chapter also included a detailed account of the theoretical models of depression and suicidality, and provided a summary of the early and current theoretical perspectives of depression and suicide. Early theoretical models of depression proposed that various risk factors played a role in its onset. These included low rate of response contingent-reinforcement, cognitive biases, negative self-schemas, stressful life events, and excessive reassurance seeking. While some of these models have begun to integrate various risk factors, most models have provided a rather simple explanation of its etiology. As such, there was a need for a more integrative model of depression.

Like with depression, early theoretical models of suicide provided an elementary explanation of its etiology and addressed suicidality as a single phenomenon (e.g., psychache, escape from aversive self-cognitions, hopelessness). The Interpersonal-Psychological Theory, however, did make a critical advance in the literature by acknowledging that suicide ideation and suicide attempts are separate processes with distinct risk factors (Joiner, 2005; Van Orden et al., 2010). Since this development in the literature, all current models of suicide

have addressed this and adopt an “ideation-to-action” framework. Although the Interpersonal-Psychological Theory greatly advanced literature, it still overlooks important risk factors. In this regard a more integrative model of suicidality was warranted.

While early models of depression and suicide have played a vital role in paving the way for more current advances, these models do overlook important risk factors. Early models have since been built upon in more integrated models. The most integrative models of depression and suicide are Beck and Bredemeier’s (2016) unified model and O’Connor’s (2011a) Integrated Motivational-Volitional Model of suicidal behaviour. Both models offer a broad basis for current understanding in the field and provide the most advanced understanding to date. These two models, then, will be used as an important base when examining depressive symptoms and suicide ideation in alternative models in the thesis.

This chapter also provided a detailed account of the various risk factors of depressive symptoms and suicide ideation. Some of these risk factors include personality vulnerabilities, stressful life events, interpersonal stressors, negative thinking styles, existing mental health problems and previous history of depressive symptoms or suicidality. One important personality vulnerability factor that has been found to predict both depressive symptoms and suicide ideation is perfectionism. This thesis focuses upon examining perfectionism as a vulnerability factor for depressive symptoms and suicide ideation. The next chapter, then, delves into perfectionism, and summarizes historical perspectives, modern conceptualisation and measurement, the various dimensions of perfectionism and provides an account of existing research examining the relationship between perfectionism and depressive symptoms and perfectionism and suicide ideation.



## Chapter 2: Multidimensional perfectionism

*“I have this demon who wants me to run away screaming if I am going to be flawed, fallible. It wants me to think I am so good I must be perfect. Or nothing”.*

– From “Letter to a demon” by Sylvia Plath (Hughes & McCullough, 1982, p. 176-177).

### 2.1 Historical perspectives of perfectionism

Perfectionism is defined as a personality trait which captures the setting of unrealistically high personal standards and harsh self-criticism (Frost et al., 1990). However, the definition of perfectionism is not one that has been universally agreed upon (see Frost et al., 1990). Early writings of perfectionism originated from clinical research. Based on these observations, perfectionism was understood to be unidimensional, and was conceptualized as a pathological construct (e.g., Burns, 1980; Horney, 1951; Missildine, 1963; Pacht, 1984). For instance, adopting a psychoanalytic perspective, Karen Horney (1950) proposed perfectionism to be a form of neurosis, by which individuals endeavoured to live up to one’s idealized self: “For nothing short of godlike perfection can fulfil his idealized image of himself” (p.13). Horney (1951) describes perfectionists as plagued by inner dictates, named ‘tyranny of the shoulds’: “You should be able to endure everything, to understand everything, to like everybody, to be always productive” (p.64). Here, Horney suggests that the inner dictates pressure individuals to think, feel and behave in a certain way.

Adler (1938, 1998) posited that perpetually comparing oneself to an unattainable ideal is underscored by a need to compensate for an underlying sense of inferiority. Albert Ellis (1958), from a rational-emotive perspective, conceptualizes perfectionism as irrational, self-defeating beliefs that capture the absolute *need* to be perfect. Ellis (1957) noted the costs of excessive striving for perfection: “Excessive striving to be perfect will invariably lead to

disillusionment, heartache, and self-hatred” (p. 89). In contrast to Horney’s (1950) observations, Hollender (1965) proposed that perfectionism captures the manner to which an individual aspires to perform perfectly, rather than striving to create an image of the self as perfect. Aaron Beck (1976) defined perfectionism as a cognitive dysfunction, which includes all-or-nothing thinking and overgeneralization. Burns (1980) identified the self-defeating nature of perfectionism. He described perfectionists as “those whose standards are high beyond reach or reason, people who strain compulsively and unremittingly toward impossible goals and who measure their own worth entirely in terms of productivity and accomplishment” (Burns, 1980, p.34).

Hamachek (1978) first proposed that perfectionism has two forms: normal and neurotic perfectionism. Normal perfectionism was defined as the setting of realistic standards, deriving pleasure from painstaking efforts, and the ability to be less precise in certain situations. Alternatively, neurotic perfectionism was defined as the setting of an unattainable level of performance, the perception that efforts are unsatisfactory, and an inability to relax standards (Hamachek, 1978). Normal and neurotic perfectionism are differentiated based on how satisfied a person is in regard to their achievements. Normal perfectionism involves the ability to be satisfied with achievements, whereas neurotic perfectionism involves being constantly dissatisfied with achievements. This fixation on deficits and failures with neurotic perfectionism is particularly detrimental and is driven out of a fear of failure.

## **2.2 Modern multidimensional conceptualisation and measurement**

Though research was long dominated by the view that perfectionism was unidimensional (e.g., Burns, 1980; Horney, 1950; Pacht, 1984), theorists began to suggest that the construct was multidimensional. A fundamental shift in perfectionism research occurred at the beginning of the 1990s when two research groups independently produced

multidimensional models and measures of perfectionism (Frost et al., 1990; Hewitt & Flett, 1991b). The conceptualization of perfectionism as multidimensional has been extremely influential in our understanding and advancement in the field. Modern approaches to perfectionism are much more advanced and researchers now almost unanimously conceptualize perfectionism as multidimensional. Since the creation of the multidimensional models, Hewitt and Flett's (1991) conceptualization of perfectionism has been and continues to be widely researched in the literature.

The most advanced conceptualization of perfectionism is Hewitt et al.'s (2017) Comprehensive Model of Perfectionistic Behaviour. This model is broad and captures both the motivational and relational components of perfectionism. In addition to the trait dimensions of perfectionism, the Comprehensive Model of Perfectionistic Behaviour also extends to self-presentational facets, and perfectionistic cognitions. In their conceptualization of perfectionism, Hewitt et al. (2017) emphasize how perfectionism can manifest at several behavioural levels. Specifically, they state that perfectionism can function as a trait that energizes and focuses behaviour on perfecting the self, as an external expression of perfection to others, and at an intrapersonal level as automatic thoughts, self-statements, and self-recriminations (Hewitt et al., 2017). Each component of the Comprehensive Model of Perfectionistic Behaviour is thought to overlap and interact with one another.

### **2.3 Trait Perfectionism**

Hewitt and Flett's (1991b) conceptualization of trait perfectionism differs based upon the direction of perfectionistic beliefs and behaviours and comprise of three distinct dimensions: Self-oriented perfectionism, socially prescribed perfectionism, and other-oriented perfectionism. Self-oriented perfectionism reflects a perfectionistic belief derived from and directed towards the self (Hewitt & Flett, 1991b). This dimension captures the setting of irrational standards, in combination with harsh self-criticism. Inherent to self-

oriented perfectionism is a salient motivational component which underpins a drive to attain perfection (Hewitt et al., 1991b). It is noteworthy to emphasise that this motivational component may merely be focused on the preoccupation with attaining perfection, rather than actual driving behaviour to achieve perfection (Hewitt et al., 2017). Self-oriented perfectionism can be distinguished from simply wanting to do well, by the irrational importance individuals place on attaining perfection in domains which are significant to them (Hewitt et al., 2017). Notably, self-oriented perfectionism does not depict a *want* to be perfect, but rather a *need* to be perfect (Ellis, 2002).

Implicit to self-oriented perfectionism is a contingent self-worth dependent upon the attainment of perfection (Flett & Hewitt, 2002; Sturman et al., 2009). Contingent self-worth including self-worth based on success and self-worth based on activity (i.e., the need to always be productive) are both highly central to self-oriented perfectionism (Sturman et al., 2009). In this regard, self-oriented perfectionism not only involves basing self-worth on meeting irrational performance standards, but also on productivity and a relentless work ethic (Sturman et al., 2009). This notion was earlier proposed by Burns (1980), who noted that perfectionists are “those whose standards are high beyond reach or reason, people who strain compulsively and unremittingly toward impossible goals and who measure their own worth entirely in terms of productivity and accomplishment” (p. 34). If standards are not met, self-oriented perfectionism exhibits vulnerability for distress when activated by situations which signify failure or the sense that one is not working at an acceptable rate (Sturman et al., 2009). Research, for instance, has found contingent self-worth to mediate the relationship between self-oriented perfectionism and depression (Sturman et al., 2009).

Self-oriented perfectionism also involves adopting an extremely negative view of the self. Following the setting of irrational standards, self-oriented perfectionism involves harsh self-criticism and stringent self-appraisals. Because self-oriented perfectionism will

inevitably involve falling short of the standards, this dimension involves perceiving the self as an absolute failure. Self-oriented perfectionism involves finding fault with performances and a tendency to engage in self-blame, self-criticism, and self-recriminations (Hewitt et al., 2017). These behaviours do not merely create a significant amount of distress but may also create failures where none exist. Self-oriented perfectionism, then, involves the tendency to engage in relentless striving in redemption of imperfect performances (Hewitt et al., 2017).

Socially prescribed perfectionism involves perfectionistic beliefs believed to be imposed by others (Hewitt & Flett, 1991b). This dimension captures the perception that others (e.g., family, friends, society) impose unrealistically high standards and evaluate others harshly when standards are not met (Flett et al., 2022a; Hewitt & Flett, 1991b). These perceptions may or may not be veridical (Smith et al., 2017c). That is, the degree to which an individual perceives others to impose unrealistically high expectations and exhibit harsh criticism may or may not reflect reality. It is important to note that socially prescribed perfectionism is thought to reflect more of a generalized view, rather than pressure to be perfect emanating from a particular individual (Flett et al., 2022a). In this regard, while socially prescribed perfectionism may stem from significant others, this dimension can also be broad and may capture a wider societal need to be perfect (Curran & Hill, 2019; Flett et al., 2022a; Hewitt et al., 2017). Regardless, it is important to note that the distinguishing feature of socially prescribed perfectionism is that the underlying drive for perfection stems from overtly interpersonal sources, rather than the self (Hewitt et al., 2017).

Socially prescribed perfectionism involves striving to meet the elusive expectations of others (Hewitt & Flett, 1991b). The underlying motivation of striving for perfection is to receive love, approval, and acceptance, and to avoid feelings of abandonment or rejection (Flett et al., 2002a; Hewitt et al., 2006; Hewitt, 2020). Because socially prescribed perfectionism involves striving to please others rather than the self, attainment is considered

out of control (Flett et al., 2022a; Hewitt et al., 1991b; Hewitt et al., 2017). Because the expectations of others are viewed as intangible, socially prescribed perfectionism involves the perception that others are impossible to please (Hewitt et al., 2017). Consequently, the primary motives of connection, love, and security often go unmet, where others are viewed as judgemental and critical, rather than a source of comfort and support (Hewitt, 2020).

A key feature of socially prescribed perfectionism is a negative expectancy of the future (Flett et al., 2022a). Socially prescribed perfectionism involves anticipating future mistreatment of being negatively evaluated and criticized. In line with this, it has been suggested that socially prescribed perfectionism captures a pessimistic cognitive orientation, particularly within the interpersonal domain (Flett et al., 2022a). Often seen within interpersonal relationships, a sense of helplessness and hopelessness is inherent to socially prescribed perfectionism (Flett et al., 2022a; e.g., Harper et al., 2020). This is because even when expectations are met, they merely bring more expectations and more demands (Hewitt et al., 2017). As such, socially prescribed perfectionism often results in a sense of despair and despondency (Flett et al., 2022a; Hewitt et al., 2017).

In contrast to socially prescribed perfectionism, other-oriented perfectionism involves imposing perfectionistic standards onto others (Hewitt & Flett, 1991b). Rather than requiring the self to be perfect, other-oriented perfectionism involves requiring others to be perfect (Hewitt & Flett, 1991b). This demand for perfection is often directed at significant others or groups within an individual's social network (Hewitt, 2020). Hewitt and Flett's (1991b) depiction of other-oriented perfectionism is aligned with other early descriptions of perfectionism (e.g., Hollender, 1965; Horney, 1950). For example, Horney (1950) posited that "A person may primarily impose his standards upon others and make relentless demands as to *their* perfection" (p.78). Similarly, Hollender (1965) suggested that "some persons who do not demand perfection of the self, demand it of others" (p.100). While self-oriented

perfectionism and other-oriented perfectionism are independent, the behaviour of other-oriented perfectionism is akin to self-oriented perfectionism, with the exception that the behaviour is directed outwards (Hewitt & Flett, 1991b). Accordingly, other-oriented perfectionism involves vicariously experiencing perfectionistic striving through others (Hewitt, 2020).

Research suggests that other-oriented perfectionism largely stems from an excessive and overt need for control (Hewitt et al., 2017; Mor et al., 1995). For this reason, other-oriented perfectionism involves adopting a dominant, controlling, and tyrannical manner, placing great importance on other's attainment of perfection, and evaluating others critically and stringently when they fail to meet such elusive expectations (Hewitt & Flett, 1991b). When expectations go unmet, other-oriented perfectionism involves a tendency to respond with anger, hostility, and contempt (Hewitt et al., 2018). Consequently, targets of people high in other-oriented perfectionism receive little praise or reward and will feel incapable of pleasing them (Hewitt et al., 2017). In this regard, targets of people high in other-oriented perfectionism often feel inadequate, unworthy, and pushed away (Hewitt, 2020).

A key motive of other-oriented perfectionism in demanding perfection from others may be because others are, in part, a reflection on the self (Hewitt et al., 2017). Early observations by Missildine (1963) suggest some people require perfection of others to ensure that they themselves are not judged negatively. This notion is in keeping with Hewitt and Flett's conceptualization of other-oriented perfectionism in that demanding perfection of others can provide a source of esteem (Hewitt et al., 2017). As part of a narcissistic need for perfection, any apparent defects or flaws from others may reflect badly on the self too (Nealis et al., 2015). Other-oriented perfectionism involves a tendency to be hypercompetitive, a 'win at all costs' approach to life and a propensity to be highly threatened when outperformed by others (Hewitt et al., 2017). Stemming from hypercompetitiveness and aggressive behaviour,

other-oriented perfectionism often results in conflict (Sherry et al., 2016; Stoeber, 2014a; Stoeber, 2014b).

## 2.4 Perfectionistic self-presentation

In addition to trait dimensions of perfectionism, another component of Hewitt et al.'s (2017) Comprehensive Model of Perfectionism Behaviour captures how perfectionism is externally expressed, through self-presentational styles, termed perfectionistic self-presentation. Perfectionistic self-presentation is a dynamic interpersonal style, which does not represent the need to *be* perfect, but rather captures the need to *appear* perfect (Hewitt et al., 2003). Perfectionistic self-presentation centers on the outward expression of perfection to others and/ or concealing one's imperfections (Hewitt et al., 2003). This dimension was born out of observations from the behaviours of perfectionistic individuals in clinical settings (Hewitt, 2020). However, this dimension also builds upon early theoretical accounts.

Theorists put forth the notion that perfectionism involves the need to appear perfect to others (Horney, 1939; Bruch, 1973). Horney (1939), for instance, proposed “the type in question (i.e., a perfectionistic person) is driven not by a need for an ever-increasing perfection, ... but by a need to maintain the *appearance* of perfection” (p.215). Here, Horney argued that neurotic behaviour is not a means to attain perfection, but rather to give the impression to others that one is perfect. Horney (1939) indicated that the portrayal of perfection is exhibited to garner both self-approval and approval from others (Hewitt et al., 2017). Similarly, Bruch (1973) added that this striving to appear perfect is often part of a strong need to gain approval from others.

Perfectionistic self-presentation is conceptualized to consist of three dimensions: perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection. The first dimension, perfectionistic self-promotion, involves assertively proclaiming one's perfection to others and presenting the self as perfect (Hewitt et al., 2003).



This self-presentational style includes presenting the self as being extremely capable, successful, socially competent, attractive, and admirable to others (Hewitt, 2020).

Perfectionistic self-promotion involves seeking out opportunities to impress others. And portraying the self in a perfect manner is in an attempt to influence others' appraisals (Hewitt et al., 2017). This dimension involves being highly self-referent, self-focused and in competition with others – behaviours which are reminiscent of narcissism (Hewitt, 2020). In line with this, research has demonstrated that this dimension of perfectionistic self-presentation is indeed related to narcissistic behaviours (see Casale et al., 2016; Hewitt, 2020).

Unlike perfectionistic self-promotion, the second dimension nondisplay of imperfection, involves a passive and concealing interpersonal style (Hewitt et al., 2003). Nondisplay of imperfection involves concealment of any visible signs of imperfection and reflects the need to avoid situations where one is likely to be scrutinized due to a mistake or flaw (Hewitt et al., 2003). These behaviours are in an attempt to protect an image of perfection by preventing any imperfections being apparent or visible to others (Hewitt et al., 2017). If placed in situations where performance is evaluated, individuals are likely to respond with extreme anxiety and feelings of humiliation and shame (Hewitt et al., 2017). As a defence mechanism, nondisplay of imperfection involves selective sharing of the self and results in the individual behaving in different ways depending on what is perceived to gain acceptance and admiration (Hewitt, 2020).

The third dimension, nondisclosure of imperfection, also captures a passive and concealing interpersonal style (Hewitt et al., 2003). Nondisclosure of imperfection involves the avoidance of verbal expressions of mistakes, imperfections, or any information which could be viewed negatively by others due to a fear of negative evaluation (Hewitt et al., 2003). In this regard, interactions or conversations which may be personally revealing are

particularly anxiety-provoking (Hewitt et al., 2017). When placed in such situations, individuals are unlikely to engage in self-disclosure and are likely to be viewed as cold and distant (Hewitt et al., 2017). Here, the primary defence mechanism involves deflection, whereby the conversation is often deflected onto others rather than the self. Consequently, others may feel that they cannot get to know an individual well or may find it difficult to relate to them (Hewitt, 2020).

People may exhibit self-presentational styles due to a fragile or low sense of self-esteem and an underlying need for love, approval, and acceptance, and avoidance of rejection (Hewitt et al., 2017). However, those who exhibit self-presentational behaviours tend to feel like an imposter and are extremely sensitive to others' perceptions, fearing any signs of disapproval (Hewitt, 2020). Paradoxically, their behaviours are often perceived as inauthentic, ingenuine, and unrelatable and therefore foster greater disconnection, rejection, and alienation from others (Hewitt et al., 2017). This concern with the need to appear perfect has distinct forms and manifestations that distinguish it from trait perfectionism. It is important to note that while trait dimensions of perfectionism are thought to energize self-presentational behaviours, it is also possible that people can exhibit high levels of perfectionistic self-presentation, but not high levels of trait perfectionism (Hewitt et al., 2017).

Despite overlap with trait perfectionism, perfectionistic self-presentation is empirically and conceptually distinct. In this regard, perfectionistic self-presentation has been found to predict unique variance in social disconnection, help seeking, and mental health problems beyond trait dimensions of perfectionism (e.g., Casale et al., 2020b; Hewitt et al., 2003; Hewitt et al., 2008; Mackinnon et al., 2014a; Newby et al., 2017; Roxborough et al., 2012). Hewitt et al. (2003), for instance, found perfectionistic self-promotion to uniquely predict increased general, appearance, and social self-esteem and decreased depression.

Nondisplay of imperfection was found to uniquely predict lower general, academic, appearance, and social self-esteem, anxiety and depression, whereas nondisclosure of imperfection was found to uniquely predict lower social self-esteem. Dimensions of perfectionistic self-presentation have also been found to predict unique variance in measures of anxiety beyond trait dimensions of perfectionism (Hewitt et al., 2003). Hewitt and colleagues (2003), for example, found nondisplay of imperfection to predict unique variance in social phobia, social interaction, and social performance anxiety and nondisclosure of imperfection predicted unique variance in state anxiety and social phobia.

More recent studies have also evidenced the distinctiveness of perfectionistic self-presentation beyond trait dimensions of perfectionism (e.g., Casale et al., 2020b; Roxborough et al., 2012; Newby et al., 2017). Newby et al. (2017) found nondisplay of imperfection and nondisclosure of imperfection to predict unique variance in social interaction anxiety, beyond trait dimensions of perfectionism. Casale et al. (2020b) replicated this finding and found nondisplay and nondisclosure of imperfection to predict unique variance in both social phobia and social interaction anxiety. In addition, an earlier study by Roxborough et al. (2012) found nondisclosure of imperfection to predict additional variance in suicide risk beyond trait perfectionism. Collectively, previous research highlights the importance of considering each dimension of perfectionistic self-presentation alongside trait dimensions of perfectionism when examining the role of perfectionism on mental health problems.

## **2.5 Perfectionistic cognitions**

Another dimension of perfectionism within the Comprehensive Model of Perfectionistic Behaviour is perfectionistic cognitions (Flett et al., 1998). In contrast to self-presentational styles, perfectionistic cognitions capture the inner expression of perfectionism (Flett et al., 1998). That is, one's internal preoccupation with the need to be perfect (Hewitt et al., 2017). Perfectionistic cognitions are state-like automatic thoughts and images that reflect

the need to be perfect (Flett et al., 1998). Perfectionistic cognitions also capture the frequency in which individuals engage in perfectionistic automatic thoughts (Flett et al., 1998).

Theorists have long described such cognitive elements of perfectionism as tyrannical “should” statements (Horney, 1950), irrational beliefs (Ellis, 2002), and dysfunctional attitudes (Burns & Beck, 1979). Cognitive and information processing elements, then, are considered a key component of perfectionism (Hewitt et al., 2017).

Perfectionistic cognitions are believed to stem from the ‘ideal self’ (i.e., an idealized version of the self, emanating from the self), influencing information processing (Besser et al., 2008; Flett et al., 1998; Hewitt & Genest, 1990). This processing of information, alongside processing of the ought self (i.e., an idealized version of the self, emanating from others; Higgins, 1987) result in social evaluation and disapproval. Both ‘ideal self’ and ‘ought self’ schemas are frequently accessed in information processing (Flett et al., 1998). Flett et al. (1998) suggest that perfectionistic cognitions, then, arise when a person perceives a discrepancy between the actual self and the ideal self. In this regard, relative to other components of the Comprehensive Model of Perfectionistic Behaviour, perfectionistic cognitions are more state-like and can be triggered by the environment. Nevertheless, it is also suggested that perfectionistic cognitions can be more trait-like when chronically activated, reflecting more automatic, unconscious processing (Hewitt et al., 2017).

Perfectionistic cognitions have been found to explain unique variance over trait dimensions of perfectionism in various outcomes including rumination, burnout, and depressive symptoms (e.g., Casale et al., 2020b; Downey et al., 2014; Flett et al., 1998; Flett et al., 2002b; Flett et al., 2007b; Flett et al., 2011; Hill & Appleton, 2011). Flett et al. (1998), for instance, found perfectionistic cognitions to predict unique variance in depressive symptoms beyond trait dimensions of perfectionism. Likewise, Flett et al. (2007b) found perfectionistic cognitions to predict unique variance in anxiety and depressive symptoms

beyond variance attributed to trait perfectionism. Flett and colleagues (2011) provided further evidence of the distinctiveness of perfectionistic cognitions beyond trait perfectionism and found perfectionistic cognitions to uniquely predict bulimic thoughts. Collectively, research demonstrates the need to consider the distinct influence of perfectionistic cognitions on mental health problems.

In summary, the Comprehensive Model of Perfectionistic Behaviour consists of three broad components: trait dimensions of perfectionism, self-presentational styles, and automatic cognitions (Hewitt et al., 2017). According to the Comprehensive Model of Perfectionistic Behaviour, trait dimensions of perfectionism energize behaviour focused on perfecting the self at both a relational level (i.e., perfectionistic self-presentation) and an intrapersonal level (i.e., perfectionistic cognitions; Hewitt et al., 2017). These three broad components of perfectionism are thought to overlap and interact with each other, reflecting various levels of behaviour that may alter and change depending on the context of the individual (Hewitt et al., 2017). This Comprehensive Model of Perfectionistic Behaviour highlights the diverse idiosyncratic manifestations of perfectionism and heterogeneity among those with perfectionistic tendencies (Hewitt et al., 2017). As such, it is important to consider the varying degrees of all components when conceptualizing perfectionism.

## **2.6 Approach to perfectionism in the thesis**

Despite alternate conceptualisations and measures of perfectionism, for reasons outlined below, this thesis adopts Hewitt and Flett's (1991b) conceptualization of perfectionism. First, in contrast to existing measures of perfectionism, Hewitt and Flett provide important advancement in that both intrapersonal and interpersonal expressions of perfectionism can be studied (Hewitt & Flett, 1991b). As noted earlier, Hewitt and Flett's multidimensional model captures three trait dimensions: self-oriented perfectionism, socially prescribed perfectionism and other-oriented perfectionism. Unlike other multidimensional

models of perfectionism, Hewitt and Flett (1991b) recognise that perfectionistic standards can be imposed onto others and that distress often results from perfectionistic demands being placed onto others. These relational dimensions are important given that unmet interpersonal needs are conceptualized to be at the root of perfectionism (Hewitt et al., 2017). In addition, research on socially prescribed perfectionism has typically found this dimension to be one of the harmful dimensions of perfectionism in relation to distress, suggesting that it is an important dimension to be studied.

Second, Hewitt and Flett's conceptualization of perfectionism recognises the complex and multifaceted nature of perfectionism (Hewitt et al., 2017). In addition to the trait dimensions of perfectionism, Hewitt and Flett suggest that perfectionistic behaviour can extend to self-presentational facets and perfectionistic cognitions. Hewitt and Flett also suggest that perfectionism can manifest at several behavioural levels and trait dimensions of perfectionism have the potential to energize external expressions of perfection onto others and internal expressions via automatic thoughts and cognitions. Alternative models of perfectionism, however, overlook the influence of trait dimensions on cognitions and behaviours. As such, Hewitt and Flett provide the most comprehensive model of perfectionism to date.

Third, unlike competing models of perfectionism, Hewitt and Flett provide a complete and extensive theoretical framework which encompasses the development of perfectionism, mechanisms associated with perfectionism, and its associations with maladjustment (see Hewitt et al., 2017). Hewitt and Flett, for instance, have proposed pathways involved in the development of perfectionism (Flett et al., 2002a), have produced several theoretical models associated with the development of mental health problems (e.g., social disconnection models; Hewitt et al., 2006), and have extensively documented the relationship between dimensions of perfectionism and mental health problems (see Hewitt et al., 2017 for an

overview). Informed by both research and clinical work, Hewitt and Flett continue to develop and refine their theory. Their work has since received extensive empirical research dating back over thirty years and can be regarded as the most prominent in perfectionism literature (see Smith et al., 2022).

Hewitt and Flett view perfectionism as a vulnerability factor which predisposes individuals to maladjustment (e.g., Hewitt et al., 2017). This is in contrast to alternate conceptualizations of perfectionism, suggesting that perfectionism may sometimes emerge as adaptive (e.g., Stoeber et al., 2020). Hewitt and Flett adopt the perspective that whilst perfectionism may sometimes lead to positive outcomes (e.g., achievement), perfectionism can be highly dysfunctional and confers vulnerability to psychological disorders and distress (Hewitt et al., 2017). In support of their perspective, perfectionism and its association with maladjustment has been extensively documented by meta-analytical research (see Limburg et al., 2017; Smith et al., 2016b; Smith et al., 2018a). Furthermore, Hewitt and Flett's clinical background in treating individuals with perfectionism has guided their theoretical conceptualization and perspectives (Hewitt et al., 2017). Aligned with Hewitt and Flett's view, the present thesis also adopts the view that perfectionism is an underlying vulnerability factor to maladjustment.

The focus in this thesis is also on trait dimensions of perfectionism. This is because trait dimensions of perfectionism are the most stable feature of the Comprehensive Model of Perfectionistic Behaviour and often energize external manifestations of perfectionism, including cognitions and self-presentational behaviours (see Hewitt et al., 2017). In this regard, research has found trait dimensions to predict external expressions of perfectionism through sequential indirect effects (e.g., Rnic et al., 2021). In addition, trait dimensions of perfectionism have been found to be highly correlated with other less stable components of perfectionism (i.e., perfectionistic cognitions and self-presentational components; Flett et al.,

1998; Hewitt et al., 2003). The trait dimensions of perfectionism, then, are considered the most important dimension of perfectionism to be studied.

Much of the perfectionism literature has focused on trait dimensions alone (e.g., Graham et al., 2010; Hewitt et al., 2020; O'Connor et al., 2007). Accordingly, more extensive evidence has been found for trait dimensions of perfectionism, in contrast to behaviours and cognitions. Some theoretical models of perfectionism predicting psychopathology, for instance, have only examined trait dimensions of perfectionism as predictors (see Graham et al., 2010; Hewitt & Flett, 1993). In other theoretical models which have examined behaviours and cognitions, trait dimensions are still almost always included. Consequently, a focus on trait dimensions of perfectionism provides an important touchstone to contrast findings of the thesis with existing research.

## **2.7 Trait perfectionism and associated outcomes.**

In earlier sections of the thesis, distinctions between Hewitt and Flett's trait dimensions of perfectionism were described. This is important because each trait dimension of perfectionism is uniquely associated with varying degrees of maladjustment. In this section, then, each trait dimension of perfectionism and its unique associations with various outcomes are discussed. As a result, the destructiveness of each trait dimension and the specific correlates and outcomes related to each dimension will be clearer. It will also be apparent under *why* and under *what conditions* is maladjustment more likely to emerge for each trait dimension of perfectionism

Self-oriented perfectionism is double-edged (Stoeber, 2014c). This is because self-oriented perfectionism has a striking motivational component, which energizes engagement towards meeting achievement outcomes (Hewitt & Flett, 2002). For instance, self-oriented perfectionism has been found to relate to positive outcomes, such as resourcefulness (Flett et al., 1991), agreeableness (Hill et al., 1997a), intrinsic motivation, achievement striving (Mills



& Blankstein, 2000), conscientiousness (Smith et al., 2019b), and academic achievement (Madigan, 2019). However, self-oriented perfectionism also involves equating achievement with self-worth and has been found to relate to a contingent sense of self-worth (Sturman et al., 2009). Because of its conditional sense of self-worth, self-oriented perfectionism often become vulnerable to psychological difficulties when standards go unmet (Hewitt & Flett, 2002). Accordingly, self-oriented perfectionism is positively related to high self-standards, self-blame, and self-criticism (Hewitt & Flett, 1991b) and this self-critical appraisal is likely to manifest following failure.

Self-oriented perfectionism emerges as a vulnerability factor to psychological difficulties in times of perceived threat and failure (e.g., Besser et al., 2004; Besser et al., 2008; Curran & Hill, 2018). Self-oriented perfectionism, for instance, is associated with greater physiological reactivity and negative affect following life stress and failure (e.g., Besser et al., 2004; Besser et al., 2008). Likewise, self-oriented perfectionism positively predicts fear of failure and negative reactions to imperfection (Hill et al., 2010), and stress reactivity to failure (Flett et al., 2016c). More recently, self-oriented perfectionism was found to negatively predict within-person trajectories of pride and positively predict within-person trajectories of guilt following interpersonal failure (Curran & Hill, 2018). In summary, self-oriented perfectionism may only present vulnerability to negative outcomes in the presence of adversity, failure, or setbacks.

Self-oriented perfectionism exhibits vulnerability to body image issues and eating problems. For example, self-oriented perfectionism positively predicts bulimic symptoms, anorexic symptoms, eating disorder pathology, and shape and weight over-evaluation (e.g., Bardone-Cone, 2007; Chang et al., 2008a; Joyce et al., 2012). Moreover, self-oriented perfectionism positively predicts evaluative anxiety, and negative evaluations of social comparison (Newby et al., 2017; Wyatt & Gilbert, 1988). Additionally, self-oriented

perfectionism positively predicts psychopathology, which includes anorexia nervosa (e.g., Castro-Fornieles et al., 2007; Cockell et al., 2002), depression (Enns & Cox, 2005), and early mortality (Fry & Debats, 2009). The destructiveness of self-oriented perfectionism is further evidenced in recent meta-analytical reviews, by which self-oriented perfectionism positively predicts suicide ideation and depression over time (Smith et al., 2016b; Smith et al., 2018a).

Socially prescribed perfectionism is a uniformly debilitating dimension. This dimension involves the perception that others impose unrealistic expectations (Hewitt & Flett, 1991b). Stemming from these expectations, is the sense of being overly concerned by the perceived demands and expectations of others. Striving to meet such demands are as a means to earn approval and acceptance (Hewitt & Flett, 2002). Accordingly, those higher in socially prescribed perfectionism are extremely sensitive within their interpersonal relationships and typically view others as demanding and displeased with them (Hewitt & Flett, 1991b; Hewitt et al., 2006). Socially prescribed perfectionism is positively related to several markers of interpersonal sensitivity and social disconnection, including rejection-sensitivity, validation seeking, interpersonal rumination, negative social feedback, and negative social interactions (e.g., Flett et al., 2014a; Flett et al., 1997; Nepon et al., 2011).

A perceived inability to please others also makes negative emotional states common. Research suggests that people higher in socially prescribed perfectionism are more likely to experience poorer wellbeing, distress, and negative emotional states (Hewitt & Flett, 1991b). Socially prescribed perfectionism, for instance, is positively related to lower self-esteem, self-blame, self-criticism, fear, sadness, defeat, shame, guilt, anxiety, and hostility (Curran & Hill, 2018; Hewitt & Flett, 1991b; Stornelli et al., 2009; Wyatt & Gilbert, 1998). These negative emotional states are particularly likely to emerge in response to perceived failure (e.g., Curran & Hill, 2018). In addition, socially prescribed perfectionism is consistently related to a range of negative outcomes including obsessive compulsive symptoms (Hewitt & Flett,

1991b), evaluative anxiety (Newby et al., 2017), test anxiety (Stoeber et al., 2009), burnout (Hill & Curran, 2016), poor health behaviours (Chang et al., 2008a), and poorer physical health (Molnar et al., 2012; Molnar et al., 2020).

Like self-oriented perfectionism, socially prescribed perfectionism also exhibits vulnerability to poor body image and eating pathology. Socially prescribed perfectionism, for instance, positively predicts body dissatisfaction, body image avoidance, bulimic symptoms, and anorexic symptoms (Chang et al., 2008a; Hewitt et al., 1995a). Chang et al. (2008a) found socially prescribed perfectionism to account for unique variance in anorexic symptoms, bulimic symptoms, and body dissatisfaction. Moreover, socially prescribed perfectionism is consistently associated with severe psychopathology, including anorexia nervosa (e.g., Cockell et al., 2002), depression (e.g., Békés et al., 2005; Enns & Cox, 2005; Hewitt et al., 1996), self-harm (O'Connor et al., 2010) and suicide ideation (e.g., Blankstein et al., 2007; Flamenbaum & Holden, 2007; Hewitt et al., 1994). Recent meta-analytical reviews have found socially prescribed perfectionism to predict depressive symptoms and suicide ideation over time (Smith et al., 2016b, Smith et al., 2018a). Socially prescribed perfectionism is a particularly harmful dimension of perfectionism and emerges as a more robust predictor of depressive symptoms and suicide ideation, relative to self-oriented perfectionism.

Other-oriented perfectionism has received less attention. Much of the research which has examined other-oriented perfectionism has highlighted its dark features (e.g., Stoeber, 2014a). Other-oriented perfectionism is expressed outwardly and involves the setting of irrational standards for others (Hewitt & Flett, 1991b). When others fall short of their elusive expectations, they are typically treated with hostility, anger, and disdain (Hewitt & Flett, 1991b; Hewitt et al., 2017; Hewitt et al., 2018). Accordingly, early research shows that other-oriented perfectionism positively predicts hostility, vindictiveness, blaming others, exploitativeness, authority, narcissism, entitlement, and dominant behaviours and negatively

predicts agreeableness, altruism, compliance, and trust, (Hewit & Flett, 1991b; Hill et al., 1997a; Hill et al., 1997b). From these findings, it is evident how the behaviours associated with other-oriented perfectionism considerably impairs relationships with others.

Stoeber (2014a) examined how other-oriented perfectionism differs from self-oriented and socially prescribed perfectionism. As expected, other-oriented perfectionism emerged as a darker form of perfectionism exhibiting unique positive relationships with all three personality traits of the dark triad – narcissism, machiavellianism, and psychopathy (Stoeber, 2014a). This dimension also revealed unique positive relationships with social dominance goals, and unique negative relationships with nurturance, intimacy, and social goals; Stoeber, 2014a). In addition to these findings, Stoeber (2014b) found other-oriented perfectionism to explain unique variance in all DSM-5 traits indicative of antisocial personality disorder. Alongside socially prescribed perfectionism, other-oriented perfectionism predicted hostility, callousness, deceitfulness, irresponsibility, and impulsivity. In addition, beyond socially prescribed perfectionism, other-oriented perfectionism predicted unique variance in manipulateness and risk-tasking.

Stoeber (2015) expanded upon his previous research on other-oriented perfectionism and found this dimension to exhibit unique positive relationships with aggressive humour, uncaring traits, an individualistic orientation, and positive self-regard, and unique negative relationships with prosocial orientation and other-interest. Further research by Stoeber et al. (2017) found other-oriented perfectionism to be positively related to distrust, physical and verbal aggression, anger, and hostility, and negatively related to cognitive and affective empathy. Together, evidence suggests that other-oriented perfectionism elicits dominating behaviours and uncaring personality characteristics, including a lack of interest in helping or supporting others. Additionally, research suggests that other-oriented perfectionism is positively associated with a narcissistic need for others' admiration (Nealis et al., 2016;

Nealis et al., 2015; Sherry et al., 2014b). Building on this line of research, Smith et al. (2016a) conducted a meta-analytic review examining the perfectionism-narcissism relationship. The authors found other-oriented perfectionism to be positively related to narcissistic grandiosity, suggesting that other-oriented perfectionism involves overt expressions of superiority and entitlement.

Unlike self-oriented perfectionism and socially prescribed perfectionism, other-oriented perfectionism is inconsistently related or unrelated to internalized forms of psychological distress (e.g., depression; e.g., Chen et al., 2017). Instead, people higher in other-oriented perfectionism externalize blame and responsibility and subsequently inflict distress onto others, rather than the self (Chen et al., 2017). Accordingly, the recipients of people higher in other-oriented perfectionism suffer much greater distress, relative to themselves (Sherry et al., 2016). Hewitt et al. (1995b), for instance, found the spouses of people higher in other-oriented perfectionism to report greater marital distress, although those higher in other-oriented perfectionism did not report to be maritally distressed.

Other research on familial relationships is indicative of similar effects. Smith et al. (2017b), for instance, examined daughters' self-oriented and socially prescribed perfectionism, social self-esteem and depressive symptoms and mothers' other-oriented perfectionism in mother-daughter dyads. Findings revealed that mothers' other-oriented perfectionism indirectly predicted longitudinal increases in daughter's depressive symptoms via social self-esteem. Subsequent work by Smith et al. (2019a) studied targets and influencers (members of their social network; e.g., mothers, fathers, siblings, peers, and romantic partners). Influencers completed measures of other-oriented perfectionism and narcissism, whereas targets completed measures of socially prescribed perfectionism and depressive symptoms. Findings revealed that other-oriented perfectionism in mothers and siblings (not fathers, peers, or romantic partners) indirectly predicted targets' depressive

symptoms through targets' socially prescribed perfectionism. In summary, evidence suggests that other-oriented perfectionism is implicated in inflicting distress onto others, rather than the self.

## **2.8 Trait perfectionism and depressive symptoms**

The previous section of the thesis described the associations between trait dimensions of perfectionism and various outcomes. While it is important to understand how trait dimensions differ in terms of their associations with various outcomes, this thesis focuses on the relationship between trait perfectionism and depressive symptoms as an outcome (in addition to suicide ideation). As such, the following section delineates the associations between trait dimensions of perfectionism and depressive symptoms, with a particular focus on research examining university and community samples. Meta-analytical reviews of the perfectionism-depressive symptoms relationship are first summarized, followed by a summary of existing cross-sectional and longitudinal research of this relationship. As a result of this section, the distinct associations of trait dimensions of perfectionism and depressive symptoms will be clearer.

Recent research examining the relationship between perfectionism and depressive symptoms has been summarized in meta-analytical reviews (Limburg et al., 2017; Smith et al., 2016b). Within a broader meta-analytical review summarizing the relationship between perfectionism and psychological disorders, Limburg et al. (2017) examined the perfectionism-depression relationship in both clinical and non-clinical samples. Limburg and colleagues (2017) found perfectionistic strivings (a composite composed of self-oriented perfectionism and personal standards) and perfectionistic concerns (a composite composed of socially prescribed perfectionism, concern over mistakes, doubts about actions, and self-criticism) to positively predict both depressive symptoms and depressive disorders. However, the unique effects of perfectionistic concerns and depressive symptoms were much stronger

than perfectionistic strivings. When examining individual dimensions of perfectionism, findings revealed that socially prescribed perfectionism, concern over mistakes, doubts about actions, and self-oriented perfectionism positively predicted depression, however parental expectations and criticism, personal standards, and organization did not.

Smith et al. (2016b) examined whether various perfectionism dimensions including socially prescribed perfectionism and self-oriented perfectionism are vulnerability factors for depressive symptoms after controlling for neuroticism. Ten longitudinal studies were included in the review, consisting of a total of 1758 participants. Samples consisted of undergraduate students, community members, psychiatric patients, outpatients, and medical students. Findings revealed that neuroticism was the strongest predictor of depressive symptoms. Both self-oriented perfectionism and socially prescribed perfectionism were found to exhibit small positive relationships with follow-up depressive symptoms beyond baseline depression and neuroticism. However, self-oriented perfectionism was no longer a significant predictor of follow-up depressive symptoms when controlling for baseline depressive symptoms, neuroticism, and various dimensions of perfectionism including socially prescribed perfectionism. Collectively, findings show that socially prescribed perfectionism emerges as a stronger and more consistent predictor of depressive symptoms relative to self-oriented perfectionism.

### *2.8.1 Cross-sectional research of the trait perfectionism-depressive symptoms relationship*

This section of the thesis provides a summary of studies which have examined the perfectionism-depressive symptoms relationship. To begin with, a summary of cross-sectional research is provided, followed by longitudinal research examining this relationship. To date, extant research of the perfectionism-depressive symptoms relationship has been tested in various samples including clinical, university and community samples. Research examining the perfectionism-depressive symptoms relationship in clinical samples is first

discussed. This is then followed by a summary of research in university and community samples, as these samples are a focus of the thesis.

#### *2.8.1.1 Research in clinical samples*

A number of cross-sectional studies have examined the perfectionism-depressive symptoms relationship in clinical samples (e.g., Enns & Cox, 1999; Hewitt et al., 1991a; Hewitt et al., 1993; Sassaroli et al., 2008; Smith et al., 2020b). Of these, studies employing Frost's Multidimensional Perfectionism Scale (1991) found concern over mistakes to positively correlate with depressive symptoms (e.g., Enns & Cox, 1999). Studies employing Hewitt and Flett's Multidimensional Perfectionism Scale (1991b) found both self-oriented and socially prescribed perfectionism to positively correlate with depressive symptoms. In addition, all studies found socially prescribed perfectionism to positively predict depressive symptoms (e.g., Enns & Cox, 1999; Hewitt et al., 1991a; Smith et al., 2020b). However, self-oriented perfectionism did not consistently predict depressive symptoms across studies. Together, research provides support for the perfectionism-depressive symptoms relationship in clinical samples.

#### *2.8.1.2 Research in university samples*

A wealth of research has examined the perfectionism-depressive symptoms relationship cross-sectionally in university samples (e.g., Enns et al., 2002; Flett et al., 2003; Flett et al., 2007a; Flett et al., 2012; Nepon et al., 2011; Sherry et al., 2008; Sherry et al., 2015). Concern over mistakes and socially prescribed perfectionism were consistently positively correlated with depressive symptoms across studies (e.g., Enns et al., 2002; Flett et al., 2003; Nepon et al., 2011). In almost all studies, self-oriented perfectionism and other-oriented perfectionism were uncorrelated with depressive symptoms (Flett et al., 2003; Flett et al., 2007a; Sherry et al., 2015). This was with the exception of one study which found self-oriented perfectionism to be positively related to depressive symptoms when measured using



the Beck Depression Inventory, but not the Depression Proneness Rating Scale (Enns et al., 2002). As such, the relationship between self-oriented perfectionism and depressive symptoms may depend upon the specific measure of depression employed.

Across studies, socially prescribed perfectionism was found to positively predict depressive symptoms (Flett et al., 2007a; Flett et al., 2012; Sherry et al., 2008). Most cross-sectional studies in university samples examined various mediating mechanisms in the perfectionism-depressive symptoms relationship. Both intrapersonal (e.g., unconditional self-acceptance, difficulty accepting the past; Flett et al., 2003; Sherry et al., 2015) and interpersonal mediators (e.g., perceived social support, interpersonal rumination, negative social feedback, and mattering; e.g., Flett et al., 2007a; Nepon et al., 2011; Sherry et al., 2008) have been examined. All variables were found to mediate the relationship between socially prescribed perfectionism and depressive symptoms. However, one study examining difficulty accepting the past found this mediational effect to be conditional on greater levels of socially prescribed perfectionism. Collectively, research provides support for the perfectionism-depressive symptoms relationship in university student samples and have found various mediators to account for this relationship.

### *2.8.1.3 Research in community samples*

The perfectionism-depressive symptoms relationship has also been examined cross-sectionally in community samples (Cha, 2016; Flett et al., 2005; Flett et al., 2014a). Socially prescribed perfectionism consistently positively correlated with depressive symptoms across studies, whereas no significant correlations emerged between self-oriented perfectionism and depressive symptoms. When other-oriented perfectionism was measured, correlations were inconsistent across studies. Socially prescribed perfectionism positively predicted depressive symptoms across studies. As with studies in university samples, several studies have examined various mediators of the perfectionism-depressive symptoms relationship in

community samples (e.g., maladaptive defence styles, validation-seeking, rejection sensitivity, and mattering). All variables mediated the relationship between socially prescribed perfectionism and depressive symptoms. In sum, cross-sectional research in community samples provides support for the socially prescribed perfectionism-depressive symptoms relationship, with various mediators accounting for this relationship.

### *2.8.2 Longitudinal research of the trait perfectionism-depressive symptoms relationship*

The trait perfectionism-depressive symptoms relationship has also been examined longitudinally (e.g., Enns et al., 2001; McGrath et al., 2012; Sherry et al., 2014a). Research has examined this relationship in various samples including clinical, university, and community samples. In this section, longitudinal research on the perfectionism-depressive symptoms relationship is summarized. This section begins by summarizing the available longitudinal research in clinical samples. This is then followed by longitudinal research in university samples and ends with longitudinal research in community samples, as these samples are more pertinent to the thesis.

#### *2.8.2.1 Research in clinical samples*

Research has examined the relationship between trait-perfectionism and depressive symptoms longitudinally in clinical samples (Békés et al., 2015; Cox & Enns, 2003; Enns & Cox, 2005; Hewitt et al., 2020; Hewitt, Flett, & Ediger, 1996). Socially prescribed perfectionism consistently positively correlated with depressive symptoms, whereas self-oriented perfectionism was either positively correlated or unrelated to depressive symptoms. In addition, socially prescribed perfectionism positively predicted depressive symptoms across studies as a main effect. Three studies examined the interaction of perfectionism and achievement and interpersonal stress and found that socially prescribed perfectionism did not interact with achievement or interpersonal stress, whereas self-oriented perfectionism (in addition to personal standards and self-criticism) did interact with achievement-related stress

(Békés et al., 2015; Enns & Cox, 2005; Hewitt, Flett, & Ediger, 1996). Self-criticism was also found to interact with interpersonal stress (Békés et al., 2015). Studies spanned between ten weeks and one year and provide further empirical support for the perfectionism-depressive symptoms relationship in clinical samples.

#### *2.8.2.2 Research in university samples*

Several longitudinal studies have also examined the perfectionism-depressive symptoms relationship in university samples (e.g., Enns et al., 2001; Graham et al., 2010; McGrath et al., 2012; Sherry et al., 2013b; Smith et al., 2017b; Smith et al., 2018b). Socially prescribed perfectionism, perfectionistic concerns (formed of socially prescribed perfectionism, concern over mistakes, and doubts about actions) and self-critical perfectionism were consistently positively correlated with depressive symptoms over time (e.g., Enns et al., 2001; McGrath et al., 2012; Smith et al., 2018b). Correlations between perfectionistic strivings and depressive symptoms were inconsistent and lower in magnitude (Graham et al., 2010; McGrath et al., 2012). In addition, no significant correlations emerged between self-oriented perfectionism and depressive symptoms (Smith et al., 2017b; Smith et al., 2018b).

Socially prescribed perfectionism, perfectionistic concerns, and self-critical perfectionism positively predicted depressive symptoms in some studies (Enns et al., 2001; McGrath et al., 2012; Sherry et al., 2013b). In other studies, the direct effect of socially prescribed perfectionism and perfectionistic concerns on depressive symptoms was not significant. However, indirect effects found that socially prescribed perfectionism or perfectionistic concerns predicted depressive symptoms via various mediators, including difficulty accepting the past, interpersonal discrepancies, social hopelessness, and social self-esteem (Graham et al., 2010; Smith et al., 2017b; Smith et al., 2018b). These longitudinal studies (spanning between a few weeks to six months) provide more robust support for the

relationship between perfectionism and depressive symptoms over time in university samples. Research also highlights the need to examine various intra- and interpersonal mediators in this relationship.

### *2.8.2.3 Research in community samples*

Extant research has examined the perfectionism-depressive symptoms relationship over time in dyadic and community samples too (e.g., Mackinnon et al., 2012; Rnic et al., 2021; Sherry et al., 2014a; Smith et al., 2020a). In these studies, socially prescribed perfectionism, self-oriented perfectionism, other-oriented perfectionism, perfectionistic concerns and self-critical perfectionism were found to positively correlate with depressive symptoms. One study examined the direct effect between self-critical perfectionism and depressive symptoms only and found self-critical perfectionism to predict depressive symptoms over time, controlling for baseline depressive symptoms and neuroticism (Sherry et al., 2014a). The remaining studies examined the indirect effect of perfectionism on depressive symptoms via various mediators. These included difficulty accepting the past (Smith et al., 2020a) and several interpersonal mediators, such as dyadic conflict (Mackinnon et al., 2012), social hopelessness, loneliness, need for social assurance and reassurance of worth (Rnic et al., 2021).

Socially prescribed perfectionism and perfectionistic concerns (consisting of socially prescribed perfectionism, concern over mistakes, and self-criticism) positively predicted depressive symptoms via difficulty accepting the past and all interpersonal mediators, with exception of the need for social assurance (e.g., Mackinnon et al., 2012; Rnic et al., 2021; Smith et al., 2020a). In addition, Rnic et al. (2021) examined indirect effects between self-oriented perfectionism, other-oriented perfectionism, and depressive symptoms via interpersonal mediators. Notably, self-oriented perfectionism and other-oriented perfectionism exhibited greater specificity to particular markers of social disconnection,

suggesting that the pathways between these perfectionism dimensions and depressive symptoms are much more complex. Study lengths of the longitudinal studies ranged from 21 days to six months. These studies provide greater empirical support for the perfectionism-depressive symptoms relationship and greater insight of the underlying mechanisms at play.

Overall, numerous studies have examined the perfectionism-depressive symptoms relationship in cross-sectional and longitudinal designs. These studies have been examined in various samples including clinical, university, and community samples. Findings suggest that the trait perfectionism-depressive symptoms relationship is important across a range of samples. While the perfectionism-depressive symptoms relationship has received substantial support, there remains a lot to learn about the mechanisms underpinning this relationship. In the next section, cross-sectional and longitudinal research examining the perfectionism-suicide ideation relationship is summarized.

## **2.9 Trait perfectionism and suicide ideation**

The previous section described research examining the relationship between trait dimensions of perfectionism and depressive symptoms. In addition to depressive symptoms, the thesis also focuses on examining the relationship between trait dimensions of perfectionism and suicide ideation. The following section, then, delineates the associations between perfectionism and suicide ideation. Thereafter, a summary of systematic reviews and meta-analytical reviews in this area is provided. This is followed by a summary of research examining the trait perfectionism-suicide ideation relationship, again with a particular focus on university and community samples. As a result of this section, the distinct associations of each trait dimension of perfectionism and suicide ideation will be clearer.

Like depressive symptoms, suicide ideation is one potential outcome for individuals who are highly perfectionistic (Blatt, 1995; Burns, 1980; Hollender, 1965). Hollender (1965) noted that when a perfectionist fails to measure up to their standards, they will feel depressed,

and when this feeling becomes profound and persistent, it may result in suicide. In later years, Baumeister (1990) proposed that self-imposed and socially prescribed standards could play a role in suicidality. Baumeister (1990) suggested falling short of such standards and expectations involves self-focusing, self-blame and, ultimately attempts to escape a painful self-awareness. Blatt (1995) subsequently acknowledged the perfectionism-suicidality link in the article “The Destructiveness of Perfectionism”. In this article, Blatt (1995) details how perfectionism contributed to three extremely talented individuals taking their own lives. Following the notion that perfectionism could play a role in suicidality, there has been a wealth of research examining the perfectionism-suicidality relationship.

There have been several reviews which have summarized much of the research examining the trait perfectionism-suicidality relationship. An early systematic review summarized research on the relationship between perfectionism and suicidality (O’Connor, 2007). The review consisted of 29 articles, which included cross-sectional studies ( $N = 17$ ), case-control studies ( $N = 9$ ), and longitudinal/ prospective studies ( $N = 4$ ). The review also included a diverse range of samples including university, community and clinical samples, with the majority of studies being in university students. Findings revealed that socially prescribed perfectionism and self-criticism was consistently significantly correlated with suicidality in cross-sectional designs. In addition, socially prescribed perfectionism was found to consistently distinguish between suicide ideators/ suicide attempters and controls in clinical and population based studies. However, only one prospective study had examined the relationship between socially prescribed perfectionism and suicidality, drawing no firm conclusions of this relationship. Findings with self-oriented perfectionism were equivocal. O’Connor (2007) also reported that there were insufficient studies to draw conclusions regarding the role of other-oriented perfectionism.

Since O'Connor's (2007) review, more recent meta-analytical reviews have summarized the trait perfectionism-suicidality relationship (Limburg et al., 2017; Smith et al., 2017d; Smith et al., 2018a). Limburg et al. (2017), for example, conducted a meta-analysis summarizing the perfectionism-psychopathology relationship in clinical and non-clinical samples. Perfectionistic strivings and perfectionistic concerns were found to positively predict suicide ideation. However, perfectionistic concerns exhibited significantly larger unique effects with suicide ideation than perfectionistic strivings. Likewise, Smith et al. (2017d) conducted a meta-analytical review examining the extent to which self-oriented perfectionism, socially prescribed perfectionism and other-oriented perfectionism predict suicide ideation beyond hopelessness. Findings from 15 studies and 20 samples revealed that self-oriented perfectionism and socially prescribed perfectionism add incrementally to suicide ideation, beyond hopelessness, however other-oriented perfectionism does not.

Smith et al. (2018a) since substantiated findings in a meta-analytical review of 45 studies with 54 samples (48 cross-sectional and 6 longitudinal samples), including undergraduate students, medical students, community adults and psychiatric patients. Perfectionistic concerns (formed of socially prescribed perfectionism, concern over mistakes, doubts about actions, and perfectionistic attitudes) and perfectionistic strivings (formed of self-oriented perfectionism and personal standards) displayed small-to-moderate positive associations with suicide ideation. In addition, perfectionistic concerns displayed small, positive associations with suicide attempts. Socially prescribed perfectionism also predicted longitudinal increases in suicide ideation. From this meta-analytical review, it is clear that socially prescribed perfectionism is a more consistent and stronger predictor of suicide ideation than self-oriented perfectionism and other dimensions of perfectionistic strivings (Smith et al., 2018a).

### *2.9.1 Cross-sectional research of the trait perfectionism-suicide ideation relationship*

Following a summary of systematic and meta-analytical reviews, the present section summarizes empirical studies examining the relationship between perfectionism and suicide ideation. This section begins with a summary of cross-sectional studies of the perfectionism-suicidality relationship. This is followed by a summary of the few longitudinal studies examining this relationship. Extant research of the perfectionism-suicidality relationship has been tested in various samples including clinical, university and community samples. Research examining these relationships in clinical samples is first provided, before focusing more specifically on research in university and community samples.

#### *2.9.1.1 Research in clinical samples*

The present section summarizes studies which have examined the perfectionism-suicidality relationship cross-sectionally in clinical samples. Empirical research examining this relationship in clinical populations begun in the 1990's. Considerable research examining the perfectionism-suicidality relationship has since been conducted in clinical samples (e.g., Hewitt et al., 1992; Hewitt et al., 1994; Hewitt et al., 1997; Rasmussen et al., 2008; Hewitt et al., 2014). Across most studies, socially prescribed perfectionism positively correlated with measures of suicidality, however this correlation was inconsistent. By contrast, self-oriented perfectionism was largely unrelated to suicide measures (e.g., Hewitt et al., 1992; Hewitt et al., 1994; Hewitt et al., 2014). Studies found that socially prescribed perfectionism predicted unique variance in suicide potential, even after controlling for variables such as depression, hopelessness, and prior suicide attempts (Hewitt et al., 1992; Hewitt et al., 2014).

Two studies examined whether levels of socially prescribed perfectionism distinguished between different groups of suicidality (Hewitt et al., 1994; Shahnaz et al., 2018). Hewitt et al. (1994), for instance, found that moderate and high ideation groups exhibited significantly higher levels of self-oriented and socially prescribed perfectionism, when compared to a low ideation group. Shahnaz et al. (2018) found that a suicide ideation



group exhibited significantly higher levels of socially prescribed perfectionism, compared to a group with no previous history of suicidality. One study examined the moderating role of overgeneral recall of positive and negative memories (i.e., a generalized summary of past experiences, rather than a focus on specific instances) in the relationship between socially prescribed perfectionism and suicide ideation and found that overgeneral recall of positive and negative memories mediated this relationship (Rasmussen et al., 2008). Finally, two studies examined various mediators in the relationship between trait perfectionism and suicide ideation and behaviour (Robinson et al., 2022; Roxborough et al., 2012). Only interpersonal mediators (i.e., social hopelessness, being bullied, and interpersonal hopelessness) were found to mediate the relationship between socially prescribed perfectionism and suicide ideation and behaviour. Together, studies provide empirical support for the relationship between socially prescribed perfectionism and suicidality and suggest that interpersonal mediators are particularly important in this relationship.

#### *2.9.1.2 Research in university samples*

In addition to research examining the perfectionism-suicidality relationship in clinical samples, studies have also examined this relationship cross-sectionally in university students (e.g., Blankstein et al., 2007; Dean & Range, 1996; Dean et al., 1996; Hewitt et al., 1994; Flamenbaum & Holden, 2007; Rasmussen et al., 2012; Zeifman et al., 2020). Across studies, socially prescribed perfectionism was positively correlated with suicide ideation. Correlations between self-oriented perfectionism and suicide ideation, however, were inconsistent (e.g., Dean & Range, 1996; Flamenbaum & Holden, 2007; Zeifman et al., 2020). As expected, socially prescribed perfectionism consistently predicted unique variance in suicide ideation (e.g., Blankstein et al., 2007; Dean & Range, 1996; Hewitt et al., 1994). Studies also found various constructs to play a role in the perfectionism-suicidality relationship (e.g., life stress, depression, hopelessness, low reasons for living, and academic and social hassles).

One study examined potential moderating factors (daily hassles, self-esteem, dispositional optimism, coping, and perceived social support) in relationships between trait dimensions of perfectionism and suicide ideation (Blankstein et al., 2007). Blankstein et al. (2007) provided support for the role of academic and social hassles, social support, and optimism as moderating factors in this relationship. In addition, several cross-sectional studies examined various mediators in this relationship (e.g., psychache, unfulfilled needs, perceived burdensomeness and emotion dysregulation; Flamenbaum & Holden, 2007; Rasmussen et al., 2012; Zeifman et al., 2020). Findings revealed that dimensions of perfectionism (socially prescribed perfectionism, maladaptive perfectionism, and perfectionistic strivings and concerns) indirectly predicted suicide ideation through psychache, unfulfilled needs, perceived burdensomeness, and emotional dysregulation. Together, studies highlight the importance of intra- and interpersonal mechanisms underpinning the perfectionism-suicide ideation relationship.

#### *2.9.1.3 Research in community samples.*

Only one study has examined the relationship between trait perfectionism and suicide ideation in a community sample (Chen et al., 2017). This study examined ethnic variations in other-oriented perfectionism's association with suicide ideation in European and Asian Canadians. Socially prescribed perfectionism was positively correlated with suicide ideation, but not suicide risk across samples, whereas other-oriented perfectionism was negatively correlated with suicide risk in European Canadians and positively correlated with suicide ideation in Asian Canadians. Other-oriented perfectionism was found to demonstrate unique and negative associations with suicide ideation and suicide risk in the European Canadian sample, but not in the Asian Canadian sample. In addition, an interaction between other-oriented perfectionism and ethnicity predicted concurrent suicide ideation beyond variance attributable to other-oriented perfectionism and ethnicity alone. However, this finding only

emerged when suicide ideation was measured by the Adult Suicide Ideation Questionnaire, not the Scale for Suicide Ideation. Findings of this study highlight the need to consider the impact of utilising different measures of suicide ideation and the need for more research examining the perfectionism-suicide ideation relationship in community samples.

### *2.9.2 Longitudinal research on the trait perfectionism-suicide ideation relationship*

Only four studies, to date, have examined the relationship between trait perfectionism and suicide ideation longitudinally (Beevers & Miller, 2004; Chang, 1998; Enns et al., 2001; O'Connor et al., 2007). These studies have been conducted in clinical and university samples. However, no research has examined this relationship in community samples. In this section, longitudinal research on the perfectionism-suicide ideation relationship is summarized, beginning with research in clinical samples. This section ends with extant research examining this relationship in university samples. From this section, gaps in the literature will be clearer in relation to longitudinal research examining the perfectionism-suicide ideation relationship.

#### *2.9.2.1 Research in clinical samples*

To date, only two studies have examined the relationship between perfectionism and suicide ideation longitudinally in clinical samples (Beevers & Miller, 2004; O'Connor et al., 2007). Beevers and Miller (2004) found that perfectionism (measured via the Dysfunctional Attitudes Scale; Weissman & Beck, 1978) uniquely predicted prospective suicidal ideation six months later. In contrast, O'Connor et al. (2007) did not find socially prescribed perfectionism to independently predict suicide ideation two months later, however the interaction between higher socially prescribed perfectionism and lower future positive thinking did prospectively predict suicide ideation. Studies highlight the need to consider the impact of using different measures and varying timespans in longitudinal research examining the perfectionism-suicidality relationship. Research should also examine the impact of other

variables (e.g., mediators and moderators) in the relationship between perfectionism and suicide ideation.

### *2.9.2.2 Research in university samples*

Similarly to clinical samples, only two studies exist examining the perfectionism-suicidality relationship longitudinally in university student samples (Chang, 1998; Enns et al., 2001). Perfectionism (measured using Frost's Multidimensional Perfectionism Scale, 1990) significantly predicted suicide risk one month later (Chang et al., 1998), whereas maladaptive perfectionism (formed of socially prescribed perfectionism, concern over mistakes, and doubts about actions) did not predict suicide ideation six months later. Both studies, however, had notable limitations. Chang et al. (1998), for example, did not control for baseline levels of suicide risk. In addition, both Chang et al. (1998) and Enns et al. (2001) had small sample sizes and only examined a composite score of perfectionism dimensions. The discrepancy in findings between studies could be attributed to several reasons, including not controlling for baseline levels of suicide risk in Chang et al.'s (1998) study, the varying timespan of studies (one month vs. six months), different suicide outcomes measures (suicide risk vs. suicide ideation), and differences in samples (psychology vs. medical students). These factors should be considered in future studies examining the perfectionism-suicidality relationship longitudinally. In addition, the notable limitations of the study highlight the need for further research examining the perfectionism and suicide ideation relationship over time.

In summary, there are several studies examining the trait perfectionism-suicidality relationship cross-sectionally in various samples, including university, community, and clinical samples. The research suggests that the perfectionism-suicidality relationship is important across a range of samples. While the perfectionism-suicidality relationship is well-established, the mechanisms underpinning this relationship remain unclear. In addition, there is a lack of longitudinal research examining the trait perfectionism-suicidality relationship.

To date, few studies have examined this relationship longitudinally in a university sample and no research has examined this relationship longitudinally in a community sample. This review of studies, particularly the longitudinal studies, is informative for addressing current gaps in the literature.

## **Chapter 3: The Perfectionism Social Disconnection Model and the Existential Model of Perfectionism and Depressive Symptoms**

### **3.1 The Perfectionism Social Disconnection Model**

*“Alone, going alone among strangers. Month by month, colder shoulders. No eyes met mine.*

*[...] Alone. Loneliness burned”* – Sylvia Plath (Kukil, 2000; January 22, 1958).

The previous section denotes research on perfectionism, depressive symptoms, and, suicide ideation. However, much of the early research examining these relationships have not been examined through an explanatory theoretical model. It is therefore important to test explanatory theoretical models to build upon our understanding of the mechanisms underpinning this relationship. This thesis, then, focuses on extending, integrating, and rigorously testing two key theoretical models: The Perfectionism Social Disconnection Model (PSDM; Hewitt et al., 2006) and the Existential Model of Perfectionism and Depressive Symptoms (EMPDS; Graham et al., 2010). In this section, the original PSDM is outlined, followed by recent expanded models of the PSDM. In the following sections, research on perfectionism and social disconnection more generally is provided, followed by a detailed account of existing research on the PSDM.

### **3.2 Theoretical underpinnings of the Perfectionism Social Disconnection Model**

The PSDM is a theoretical framework formulated to explain the relationship between perfectionism and psychopathology (Hewitt et al., 2006). This model broadly suggests that disrupted interpersonal relationships with others underpin this relationship. More specifically, the PSDM posits that interpersonal components of perfectionism (i.e., socially prescribed perfectionism) lead to objective (i.e., actual impaired relationships) and subjective social disconnection (i.e., a sense of isolation or disconnection) via interpersonal hostility and

interpersonal sensitivity (e.g., Flett et al., 1997; Habke & Flynn, 2002). As a result, these mechanisms generate a marked sense of social disconnection, alienation, and a lack of belonging. Perceived or actual impaired relationships and associated hopelessness regarding future interpersonal relationships, in turn, are considered to lead to psychopathology, such as depressive symptoms and suicide ideation (Hewitt et al., 2006).

The PSDM was further expanded to explain how perfectionism is associated with psychopathology through an intrapersonal relationship with the self and interpersonal relationships with others. Perfectionism is driven by extreme, thwarted relational needs to gain approval and to matter, as well as to avoid feelings of abandonment (Hewitt et al., 2016). Perfectionism, thus, involves a tireless and unrelenting need to be accepted and to belong in the world (Hewitt et al., 2017). As a result, perfectionistic behaviours are exhibited. Individuals, thus, become preoccupied with perfecting the self to attain connection to others (Hewitt et al., 2006; Hewitt et al., 2017). However, a preoccupation with perfecting the self can produce deleterious consequences because individuals higher in interpersonal perfectionism experience heightened interpersonal sensitivity (Hewitt et al., 2006). This interpersonal sensitivity reinforces the sense that they are not important to others.

Interpersonal sensitivity stems from early relational experiences with caregivers, by which the needs of the child are not attuned with the responses of caregivers – termed asynchrony (Hewitt et al., 2017). Asynchrony is thought to develop not solely from parental behaviours, but rather a complex interaction between the child's genetically based temperament and the parents' psychological characteristics and behavioural responses (Hewitt et al., 2017). Nevertheless, the child takes on the responsibility for a lack of connection with caregivers. As such, perfectionism evolves as a coping mechanism to counteract feelings of rejection, shame, and unworthiness (Burns, 1980; Flett et al., 2002a; Sorotzkin, 1985). However, these perfectionistic behaviours become self-defeating - termed a

neurotic paradox - which creates a sense of disconnection from others (Hewitt et al., 2017). This is the very outcome perfectionistic individuals try to avoid. Ultimately, this paradox leads to outcomes, such as social withdrawal, alienation, and social disconnection.

Because socially prescribed perfectionism has a greater interpersonal element than self-oriented perfectionism, the original PSDM only included socially prescribed perfectionism (Hewitt et al., 2006). Socially prescribed perfectionism is associated with various markers of social disconnection, such as loneliness, neediness, and social hopelessness (Flett et al., 1997). This dimension is thought to generate subjective social disconnection because of dysfunctional and irrational beliefs towards interpersonal relations (Sherry et al., 2008). For instance, socially prescribed perfectionism is characterized by perceiving an inability to meet others' unrealistic expectations (Hewitt & Flett, 1991b). When intertwined with a hypersensitivity to interpersonal encounters, a perceived inability to please others leads individuals higher on socially prescribed perfectionism chronically prescribed to social disconnection (Sherry et al., 2008).

### **3.3 The expanded Perfectionism Social Disconnection Model**

A newly expanded model of the PSDM suggests there is a role for all perfectionism traits, self-presentational facets of perfectionism and perfectionistic cognitions (automatic and self-recriminatory thoughts; Hewitt et al., 2017). Self-oriented perfectionism, for instance, is included in the expanded model because this dimension includes compulsive and incessant striving, involving an imbalanced individualistic focus on attaining achievements, where self-definition (agency) is favoured over relatedness (communion; Blatt, 1995; Sherry et al., 2016). Behaviours prototypical of self-oriented perfectionism may result in narrowed life experiences, whereby opportunities for social relations may be missed or overlooked. This hyper-focus on achievement comes at a cost as these individuals neglect forming meaningful relationships with others (Sherry et al., 2016). People higher in self-oriented perfectionism



are also hypercompetitive, where winning and being the best is paramount. They prize competition over collaboration (Sherry et al., 2016).

People higher in self-oriented perfectionism do not typically engage in social interest. This is important because theories of positive development, such as Adler proposed that well-adjusted people do engage in social interest (i.e., co-operation with others and contribution to society; see Ansbacher & Ansbacher, 1956). Instead, people higher in self-oriented perfectionism typically veer towards a self-preservation orientation and focus upon the self (Sherry et al., 2016). Though they appear to move away from others, recent insights into self-oriented perfectionism suggest this dimension is indeed rooted in interpersonal needs for admiration and approval (Hewitt et al., 2017). Yet, paradoxically their perfectionistic behaviours exhibited make it difficult to have their needs met (Hewitt et al., 2017).

Other-oriented perfectionism is also included within the expanded PSDM model because this dimension involves the tendency to continually demand perfection from others (Hewitt & Flett, 1991b). People high in other-oriented perfectionism adopt a hypercritical, derogating, and conflictual stance towards others when others do not meet their expectations (Hewitt & Flett, 1991b). Stemming from their hostile and dominant behaviours, people high in other-oriented perfectionism strain and impair their relationships with others (Hewitt & Flett, 1991b; Sherry et al., 2016). People higher in other-oriented perfectionism struggle in their interpersonal relationships and often distress others. Therefore, recipients of people high in other-oriented perfectionism are much more likely to suffer than people high in other-oriented perfectionism themselves (Sherry et al., 2016).

### **3.4 Research on trait perfectionism and social disconnection**

The previous section of the thesis described the PSDM and its theoretical advances. Prior to the creation of this model, a number of early studies had been conducted examining perfectionism and markers of social disconnection. While these studies were not designed

through the lens of the PSDM, they likely aided in understanding of these relationships, leading to the development of the model. In addition, since the formation of the PSDM, a number of studies have examined the perfectionism-social disconnection relationship more generally and have not been conceptualized through the lens of the PSDM. These studies are still informative and provide support for the PSDM. The current section of the thesis details these studies below.

All studies in this section of the thesis have examined the relationship between trait perfectionism and social disconnection in university samples (e.g., Chang et al., 2008; Chang et al., 2011; Chen et al., 2015; Flett et al., 1996; Flett et al., 1997; Sherry et al., 2003). Research has examined a range of markers of social disconnection, including attachment styles, perceived social skills, sociotropy, frequency of negative social interactions, loneliness, and a need for belongingness. Across studies, socially prescribed perfectionism is consistently positively correlated with various markers of social disconnection (e.g., loneliness, shyness, fear of negative evaluation, social self-esteem, sociotropy, and negative social interactions). Self-oriented perfectionism positively correlated with emotional sensitivity, social expressiveness, and sociotropy, however correlations with markers of social disconnection were inconsistent across studies. Other-oriented perfectionism, however, was largely unrelated to markers of social disconnection and appears to be related to specific markers of social disconnection that better depict this dimension (e.g., assertiveness).

One study examined the mediating role of the need to belong and shame in relationships between insecure attachment and trait perfectionism and found that insecure attachment predicted socially prescribed perfectionism through a need for belongingness and shame (Chen et al., 2015). More in keeping with the PSDM, several studies examined the interaction between socially prescribed perfectionism and social disconnection in predicting mental health problems, with most studies examining depressive symptoms as an outcome

(e.g., Chang et al., 2008b; Flett et al., 1996; Flett et al., 1997; Sherry et al., 2003). Findings were inconsistent across studies. Some studies, for instance, found that the interaction between socially prescribed perfectionism and social disconnection in predicting mental health problems was significant (e.g., Chang et al., 2008b; Sherry et al., 2003), whereas other studies did not find a significant interaction (e.g., Flett et al., 1996; Flett et al., 1997). While studies in this section do not directly test the PSDM, they do provide indirect evidence (albeit inconsistent) in support of the model.

Research has also examined the perfectionism-social disconnection relationship longitudinally in university and community samples (e.g., Cox et al., 2009; Harper et al., 2020; Mushquash & Sherry, 2012). Socially prescribed perfectionism was found to positively correlate with markers of social disconnection across studies. However, correlations between self-oriented perfectionism and social disconnection were inconsistent. Of the three studies, two studies employed a 7-day daily diary study (Harper et al., 2020; Mushquash & Sherry, 2012), whereas the third study employed a two-wave 12 month design (Cox et al., 2009). Mushquash and Sherry (2012) found socially prescribed perfectionism to predict perfectionistic discrepancies and perfectionistic self-presentation, which in turn generated depressive affect and interpersonal conflict.

Cox et al. (2009) and Harper et al. (2020) examined mediation models. In the first study, Cox et al. (2009) found socially prescribed perfectionism did predict depressive symptoms 12 months later via personality-dependent stressful life events in females. In the second study, Harper et al. (2020) found that negative expectations of future social interactions and social hopelessness mediated the relationship between socially prescribed perfectionism and loneliness when measured both concurrently and later in the day. Together, these studies provide greater indirect support for the PSDM. Given that study designs ranged

from 7-days to 12 months, future research is needed to determine the most appropriate timeframe to capture changes in perfectionism and social disconnection.

Research in the previous section examined the perfectionism-social disconnection relationship cross-sectionally. All studies were conducted in university student samples (e.g., Chang et al., 2008b). In contrast to the cross-sectional studies, less research has examined the perfectionism-social disconnection relationship longitudinally. Studies which have examined this relationship longitudinally have been conducted in university and community samples (e.g., Cox et al., 2009; Harper et al., 2020; Mushquash & Sherry, 2012). Findings largely support the relationship between socially prescribed perfectionism (and related dimensions) and social disconnection. In contrast, the relationship between self-oriented perfectionism and social disconnection is unclear, with most studies suggesting these dimensions are unrelated. In summary, despite adopting different methodological designs and not directly testing the PSDM, these studies still provide additional support for the model.

### **3.5 Research on the Perfectionism Social Disconnection Model**

In addition to work which has examined the relationship between perfectionism and social disconnection, a number of studies have examined the PSDM directly. This work examines various outcomes, such as anxiety (i.e., generalized anxiety, separation anxiety, and social anxiety), binge eating, disordered eating, health behaviors, physical health, and subjective well-being (Mackinnon et al., 2011; Mackinnon et al., 2017; Magson et al., 2019; Molnar et al., 2012; Nepon et al., 2011). However, research on the PSDM has predominantly examined depressive symptoms as an outcome (e.g., Cha, 2016; Flett et al., 2012; Mackinnon et al., 2012; Nepon et al., 2011; Sherry et al., 2008; Sherry et al., 2013a; Smith et al., 2017b; Smith et al., 2018b). Research examining depressive symptoms as an outcome have examined various markers of social disconnection (e.g., mattering, personality-dependent interpersonal stressors, dyadic conflict, perceived social support, interpersonal discrepancies,

negative social feedback, interpersonal rumination, social hopelessness, and interpersonal hassles) within the PSDM. The next section outlines these studies in detail.

Cross-sectional studies examining depressive symptoms as an outcome in the PSDM have been conducted in various samples including preteens, university students, and community adults (e.g., Flett et al., 2012; Flett et al., 2014a; Magson et al., 2019). However, most studies have been examined in university students (e.g., Flett et al., 2012; Nepon et al., 2011; Sherry et al., 2008). These studies are discussed below, followed by studies examining depressive symptoms in the PSDM in community samples. Research examining depressive symptoms as an outcome in the PSDM has employed a range of markers of social disconnection, including social support (Sherry et al., 2008), mattering (Flett et al., 2012), interpersonal rumination, and negative social feedback (Nepon et al., 2011). Across studies, markers of social disconnection were found to mediate the relationship between socially prescribed perfectionism and depressive symptoms (Flett et al., 2012; Nepon et al., 2011; Sherry et al., 2008). Collectively, research provided support for the inclusion of depressive symptoms in the PSDM in university samples. Future research, however, is needed to examine these relationships over time using more robust methodological designs.

Two cross-sectional studies have examined the PSDM with depressive symptoms as an outcome in community samples (Cha, 2016; Flett et al., 2014a). These studies examined the mediating role of mattering (Cha, 2016), and validation-seeking (Flett et al., 2014a) in this relationship. Studies found that mattering and validation-seeking mediated the relationship between socially prescribed perfectionism and depressive symptoms. As with university student samples, research provides support for the inclusion of depressive symptoms in the PSDM in community samples. Again, these studies are limited by their cross-sectional design, and future research is needed to examine these relationship in more robust longitudinal designs.

There are several longitudinal studies examining the PSDM directly with depressive symptoms as an outcome. Research has examined these relationships in various samples, including clinical, dyadic, university and community samples (e.g., Hewitt et al., 2020; Sherry et al., 2013a; Smith et al., 2017b). Only one longitudinal study has examined the PSDM with depressive symptoms as an outcome in a clinical sample (Hewitt et al., 2020). Hewitt et al. (2020) tested the PSDM in psychiatric outpatients following short-term post discharge group Cognitive Behavioral Therapy and found that self-oriented perfectionism, socially prescribed perfectionism, and other-oriented perfectionism indirectly predicted lower symptom reductions in depression post-treatment via perceived lack of quality friendships (but not via romantic or familial love). This study provides support for the PSDM in a clinical sample, but suggests that only specific markers of social disconnection are important in this relationship.

Two longitudinal studies have tested the PSDM in dyadic samples examining depressive symptoms as an outcome (Mackinnon et al., 2012; Smith et al., 2017b). These studies examined the PSDM in romantic dyads (Mackinnon et al., 2012) and mother-daughter dyads (Smith et al., 2017b). Both studies had similar methodological three-wave longitudinal designs, with one study conducted over 21 days (Smith et al., 2017b), and the other study conducted over 28 days (Mackinnon et al., 2012). In the first study, Mackinnon et al. (2012) found that dyadic conflict mediated the relationship between perfectionistic concerns and depressive symptoms, after controlling for depressive symptoms. In the second study, Smith et al. (2017b) found that daughters' self-oriented perfectionism and socially prescribed perfectionism, and mothers' other-oriented perfectionism conferred vulnerability to daughters' depressive symptoms by lowering daughters' social self-esteem (Smith et al., 2017b). Together, these studies provide strong empirical support for the inclusion of depressive symptoms in the PSDM.

Two longitudinal studies have examined the PSDM with depressive symptoms as an outcome in university students (Sherry et al., 2013a; Smith et al., 2018b). Both studies examined interpersonal discrepancies (i.e., feeling that one has fallen short of others' standards and perceiving others to be dissatisfied with them) as a mediator. Smith et al. (2018b) also examined social hopelessness as a mediator in this relationship. Sherry et al. (2013a) found that perfectionistic concerns indirectly predicted depressive symptoms via interpersonal discrepancies in a four-week four-wave design. Likewise, Smith et al. (2018b) found interpersonal discrepancies and social hopelessness to mediate the relationship between socially prescribed perfectionism and depressive symptoms five months later. Findings provide greater empirical support for the inclusion of depressive symptoms as an outcome in the PSDM over time.

Only one longitudinal study of the PSDM has been examined in a community sample (Rnic et al., 2021). Rnic et al. (2021) recently tested the PSDM with depressive symptoms as an outcome examining a range of social disconnection markers (i.e., social hopelessness, loneliness, need for social assurance, and low reassurance of worth) as mediators over six months. In line with the PSDM, all trait dimensions of perfectionism and perfectionistic self-presentation dimensions led to greater depression severity via one or more markers of social disconnection. In single-predictor models, self-oriented perfectionism and other-oriented perfectionism were found to exhibit greater specificity to social disconnection markers. Other-oriented perfectionism, for instance, only emerged as important in the PSDM with loneliness as a mediator, leading to greater depressive symptoms, whereas self-oriented perfectionism only emerged as important to the PSDM via greater reassurance of worth (and loneliness in the full model), leading to lower depressive symptoms. Conversely, socially prescribed perfectionism led to depressive symptoms via a range of social disconnection markers (i.e., social hopelessness, loneliness, and reassurance of worth). Furthermore,

perfectionistic self-presentation and social disconnection exhibited sequential indirect effects in relationships between trait perfectionism and depressive symptoms at follow-up. Overall, findings provide strong support for the PSDM examining depressive symptoms as an outcome.

To summarize these relationships, Smith et al. (2020c) conducted a meta-analytic review of 18 longitudinal studies examining the mediating role of stress and social disconnection in the perfectionism-depressive symptoms relationship in samples of community adults, undergraduate students, medical students, and psychiatric patients. Of the 18 longitudinal studies, 12 studies measured social disconnection. Results revealed that perfectionistic concerns (a composite composed of socially prescribed perfectionism, doubts about actions, concern over mistakes, discrepancy, perfectionistic attitudes, and self-criticism) predicted depressive symptoms through stress and social disconnection. However, perfectionistic strivings (a composite composed of self-oriented perfectionism, personal standards, and high standards) predicted depressive symptoms through social disconnection, but not stress. In addition, findings revealed that age moderated the relationship between perfectionistic strivings and social disconnection, suggesting that people higher in perfectionistic strivings become increasingly socially disconnected over time.

In the previous section, existing research of the PSDM examining depressive symptoms as an outcome was summarized. Several cross-sectional studies have examined depressive symptoms as an outcome in the PSDM. These studies have been conducted in various samples, including preteens, university and community samples and have utilized various mediators including feelings of mattering, social support, negative social feedback, interpersonal rumination, and validation seeking. There were also a number of longitudinal studies which have tested the PSDM in relation to depressive symptoms. Again, these studies had been conducted in various samples, including clinical, dyadic, university, and community



samples. These longitudinal studies examined various mediators as markers of social disconnection including, daily conflict, interpersonal discrepancies, social hopelessness, loneliness and need for social reassurance. Collectively, both cross-sectional and longitudinal studies provide substantial support for the inclusion of depressive symptoms in the PSDM.

Though the PSDM was initially intended to explain the relationship between perfectionism and suicidality (Hewitt et al., 2006), there are a lack of studies examining suicide ideation within the PSDM. One study exists which provides support for the inclusion of suicide ideation in the PSDM, but does not examine the PSDM directly (Rasmussen et al., 2012). Grounded in Joiner's Interpersonal Theory of Suicide (Joiner, 2005; Van Orden et al., 2010), this study examined the mediating role of perceived burdensomeness in the relationship between maladaptive perfectionism and suicide ideation cross-sectionally in university students. Rasmussen et al. (2012) found perceived burdensomeness to mediate the relationship between maladaptive perfectionism (formed of the discrepancy subscale from the Almost Perfect Scale-Revised; Slaney et al., 2001) and suicide ideation. While findings do provide support for suicide ideation within the PSDM, more research examining suicidality within the PSDM is warranted.

Only two studies have investigated the relationship between perfectionism and suicide ideation/ behaviour through the lens of the PSDM (e.g., Robinson et al., 2022; Roxborough et al., 2012). Studies examined social hopelessness, being bullied (Roxborough et al., 2012) and interpersonal hopelessness (Robinson et al., 2022) as mediators in this relationship. Roxborough et al. (2012) found that socially prescribed perfectionism did not indirectly predict suicidal behaviour via being bullied, however facets of perfectionistic self-presentation did. In addition, socially prescribed perfectionism (and perfectionistic self-presentation) indirectly predicted suicidal behaviour through social hopelessness. Robinson et al. (2022) found socially prescribed perfectionism (and perfectionistic self-presentation) to

predict suicide ideation via interpersonal hopelessness. Research examining suicide ideation/behaviour in the PSDM remains limited by its reliance on cross-sectional designs. Thus, future robust longitudinal studies are required to determine the extent to which findings replicate.

This section summarized existing research on the PSDM. To date, research has provided support for the PSDM. Most research on the PSDM has examined depressive symptoms as an outcome, with much less research focusing on other outcomes, such as suicide ideation. Studies examining depressive symptoms as an outcome in the PSDM have largely been tested in university samples (e.g., Nepon et al., 2011; Sherry et al., 2013a; Smith et al., 2018b), followed by community samples (e.g., Cha, 2016; Flett et al., 2014; Rnic et al., 2021). In contrast, no studies on the PSDM with suicide ideation as an outcome have been examined in university students or community samples (without prior known history of suicide ideation). Furthermore, most research on the PSDM has been tested cross-sectionally or using two-wave longitudinal designs, which do not provide a proper test of mediation (Cole & Maxwell, 2003). Future research examining the relationship between perfectionism and suicide ideation/behaviour in the PSDM in university and community samples is sorely needed, in addition to research using more robust three-wave methodological designs to test mediation. These issues are discussed later in subsequent chapters as part of justifying the empirical studies in the thesis.

### **3.6 The Existential Model of Perfectionism and Depressive Symptoms**

The EMPDS is another explanatory model which explains why perfectionism may lead to depressive symptoms (Graham et al., 2010). This model suggests socially prescribed perfectionism leads to depressive symptoms through difficulty accepting the past (i.e., viewing life experiences as incoherent, dissatisfying, and meaningless; Graham et al., 2010). Existential theorists propose the importance of finding one's meaning and purpose in life

(Frankl, 1984; May, 1969; Yalom, 1980). However, several features of socially prescribed perfectionism (e.g., harsh self-criticism and the need to please others) can impede meaning-making and positive perceptions of the past (Graham et al., 2010). This is important because existential theorists (e.g., Frankl, 1984) suggest that people who view their past experience as dissatisfying and meaningless are prone to depressive symptoms.

Three reasons exist as to why people higher in socially prescribed perfectionism have difficulty accepting their past. First, people higher in socially prescribed perfectionism perceive others to impose excessive expectations and standards on them (Hewitt & Flett, 1991b). They are also highly reactive and sensitive to external influences. It may not be surprising, then, that compliance and conformity are prominent in the lives of people higher in socially prescribed perfectionism (Bruch, 1979). People higher in socially prescribed perfectionism, therefore, try to meet the expectations of others, instead of following their own desires and wishes. In this regard, perceiving and behaving in congruence with others' expectations and demands may lead people higher in socially prescribed perfectionism to view their life experiences as inauthentic, controlled, and difficult to accept, which ultimately undermines meaning and satisfaction (Graham et al., 2010).

Second, behaviours of people higher in socially prescribed perfectionism may lead to a narrow and constrained set of life experiences. Because people higher in socially prescribed perfectionism often perceive others to be demanding, they are likely to strive compulsively to meet others' expectations. In this regard, they are often unable to form meaningful connections which are not contingent upon meeting others' expectations. In addition, opportunities for growth and meaningful experiences are missed or otherwise avoided (Graham et al., 2010; Sherry et al., 2016). The lack of opportunity to create meaning in their lives, then, may impede upon the ability to form positive representations of the past.

Third, because perfection is impossible to obtain, the continual pursuit of perfectionism will typically result in frequent disappointments (Sherry et al., 2015). In this regard, people higher in socially prescribed perfectionism often engage in harsh self-criticism and adopt a hypercritical stance of the self (Graham et al., 2010). People higher in socially prescribed perfectionism also fear evaluative situations. Any perceived failures or setbacks are viewed as unacceptable. Viewing experiences through this critical lens is likely to lead to negative representations of the past, wherein life experiences are viewed as unsatisfying (Sherry et al., 2015).

While self-oriented perfectionism was not included in the EMPDS (Graham et al., 2010), theory suggests that self-oriented perfectionism may also be important in the model. Self-oriented perfectionism, for instance, involves a narrow focus on agentic goals at the expense of communal goals. This narrow focus on agentic accomplishments is likely to lead to a restricted range of experiences, where opportunities for growth and meaning making are often missed or overlooked (Sherry et al., 2016; Smith et al., 2020b). In addition, people higher in self-oriented perfectionism also miss opportunities to form meaningful connections and relationships with others which can impede positive experiences of the past (Sherry et al., 2016). In this regard, it is thought that people higher in self-oriented perfectionism struggle to accept their past due to a lack of meaningful experiences.

Similarly to socially prescribed perfectionism, self-oriented perfectionism involves compulsive striving for perfection. Self-oriented perfectionism leads to frequent setbacks and disappointments, because perfection can never be met (Hewitt & Flett, 1991b). People higher in self-oriented perfectionism are extremely self-critical, viewing their failures and setbacks through a critical lens (Hewitt & Flett, 1991b). This dimension, then, may involve forming negative representations of the past and viewing past experiences as unacceptable,

meaningless, and unsatisfying. For these reasons, people higher in self-oriented perfectionism may be unable to accept their past.

Despite this, there are reasons to suggest that self-oriented perfectionism may not be relevant to the EMPDS. This is because self-oriented perfectionism involves striving to meet their expectations and standards of the self, rather than the expectations of others (Hewitt & Flett, 1991b). In this regard, conformity and compliance are less relevant to people higher in self-oriented perfectionism. People higher in self-oriented perfectionism are likely to feel less controlled by others and are more in keeping with their authentic self. As such, people higher in self-oriented perfectionism may not have difficulties accepting the past as they are more likely to have lived life in keeping with their own desires and wishes.

It is also possible that self-oriented perfectionism contributes to depressive symptoms via other mediators. People higher in self-oriented perfectionism have a contingent sense of self-worth based on meeting achievement standards (Sturman et al., 2009). However, because self-oriented perfectionism inevitably involves falling short of the standards set for themselves, this dimension involves a tendency to engage in self-blame, self-criticism and self-recriminations (Hewitt & Flett, 1991b; Hewitt et al., 2017). The inability to attain such standards may lead people higher in self-oriented perfectionism to ruminate about their perceived failures (Flett et al., 2016b). In line with this, to date, no research has provided support for the inclusion of self-oriented perfectionism in the EMPDS when examining difficulty accepting the past as a mediator, however research has found rumination to be an important mediator in this relationship (e.g., Smith et al., 2020b). Given the limited research of self-oriented perfectionism in the EMPDS (e.g., Smith et al., 2020b), it is important for future research to clarify the role of this dimension.

### **3.7 Research on trait perfectionism and existentialism**

The previous section of the thesis described theoretical conceptualizations of the EMPDS. While studies have provided direct support for the EMPDS, there are some studies which have provided indirect support for this model. These studies have examined perfectionism and existentialism more broadly, yet are still informative and provide additional evidence in support of the EMPDS. The current section, then, summarizes research examining perfectionism and existential markers. Thereafter, a detailed account of research examining the EMPDS directly is provided.

In this section of the thesis, all studies have examined the relationship between perfectionism and existentialism in university samples (O'Connor et al., 2004; Park & Jeong, 2015; Suh et al., 2017; Stoeber & Corr, 2017), with the exception of one study (Hunter and O'Connor, 2003), which examined this relationship in a clinical sample. Research has examined several markers of existentialism, including future thinking, purpose in life, presence of meaning in life, life satisfaction, and future expectations. Collectively, studies revealed that more maladaptive components of perfectionism (i.e., maladaptive perfectionism, perfectionistic concerns, and socially prescribed perfectionism) were associated with negative markers of existentialism, including more negative future thinking, hopelessness, lower meaning and purpose in life, and lower life satisfaction (e.g., O'Connor et al., 2004). Dimensions such as adaptive perfectionism and self-oriented perfectionism, revealed more positive relationships with markers of existentialism including positive future thinking, purpose in life, presence of meaning in life, and future expectations (e.g., O'Connor et al., 2004).

Two studies examined the relationship between self-oriented perfectionism, socially prescribed perfectionism and other-oriented perfectionism and future thinking (Hunter & O'Connor, 2003; O'Connor et al., 2004). The first of which found that a parasuicide group (compared to hospital controls and community controls) reported greater socially prescribed

perfectionism and fewer positive future thoughts (Hunter & O'Connor, 2003). Whereas, the second study found socially prescribed perfectionism to interact with impaired future positive thinking to predict hopelessness (O'Connor et al., 2004). Two studies were conceptualized through a positive psychology framework (Park & Jeong, 2015; Suh et al., 2017). Findings revealed that adaptive perfectionists exhibited higher levels of environmental mastery, purpose in life, presence of meaning in life, subjective happiness, and life satisfaction, whereas, maladaptive perfectionists exhibited the highest levels of search for meaning in life. Collectively, all studies in this section provide support for the relationship between perfectionism and existential markers.

In summary, the previous section of the thesis summarized studies which have examined the relationship between perfectionism and existential markers, without directly examining the EMPDS. Almost all studies examined these relationship in samples of university students, with the exception of one study employing a clinical sample (Hunter & O'Connor, 2003). Research examining these relationships in alternative samples, such as community samples are warranted. In addition, all studies were limited by their reliance on cross-sectional designs, indicating a lack of longitudinal research in this area. Future longitudinal research is required to examine these relationships in more robust methodological designs. In summary, while studies did not set out to test the EMPDS, they do provide support for the model.

### **3.8 Research on the Existential Model of Perfectionism and Depressive Symptoms**

In addition to studies examining the relationship between perfectionism and existentialism, to date, five studies have examined the EMPDS directly. Of these, three studies have been conducted cross-sectionally. Two of the three cross-sectional studies have tested the EMPDS in undergraduate students (Park & Jeong, 2016; Sherry et al., 2015), whereas one study has tested the EMPDS in a sample of depressed individuals (Smith et al.,

2020b). All studies have examined the mediating role of difficulty accepting the past, with the exception of one study which examined the role of meaning in life as a moderator (Park & Jeong, 2016). Sherry et al. (2015) and Smith et al. (2020b) found that socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past. In addition, Park and Jeong (2016) found the search for meaning in life (but not presence of meaning in life) to moderate the relationship between maladaptive perfectionism and depressive symptoms. Findings provide support for the EMPDS, however research examining these relationships longitudinally are warranted.

Two studies on the EMPDS have been conducted longitudinally, examining difficulty accepting the past as a mediator (Graham et al., 2010; Smith et al., 2020a). One study tested the EMPDS in undergraduate students (Graham et al., 2010) and the other in community adults (Smith et al., 2020a). Graham et al. (2010) employed a four-week, four-wave design, whereas Smith et al. (2020a) conducted a one-month, two-wave design. Studies found perfectionistic concerns (a composite of socially prescribed perfectionism, concern over mistakes, and doubts about actions) and socially prescribed perfectionism to predict depressive symptoms via difficulty accepting the past. These longitudinal studies provide the strongest support for the EMPDS, to date.

This section summarized existing research on the EMPDS. To date, studies have provided support for the EMPDS. Most of the studies have been examined in undergraduate samples (e.g., Graham et al., 2010), whereas only one study has tested the EMPDS in a community sample (Smith et al., 2020a). Moreover, all studies to date have examined depressive symptoms as the only outcome variable (e.g., Graham et al., 2010; Smith et al., 2020a; Smith et al., 2020b). In addition, the EMPDS has mostly been examined using cross-sectional or two-wave longitudinal designs, which do not provide a robust test of mediation. Future research is needed examining the EMPDS in alternative samples (e.g., community



samples), in relation to other mental health outcomes (e.g., suicidality), and using more robust methodological designs. Again, these issues are revisited in subsequent chapters and provide some of the rationale for the empirical work undertaken.

### **3.9 Aims of the thesis:**

Research examining perfectionism, depressive symptoms, and suicide ideation form the backdrop for the current thesis, with a focus on work testing the PSDM and EMPDS, in particular. These two models represent current thinking on why perfectionism is related to depressive symptoms and suicide ideation. The overarching aim of this thesis is to advance understanding of the relationships between perfectionism and depressive symptoms, and perfectionism and suicide ideation, by extending, integrating, and testing the PSDM and EMPDS. This was achieved across four empirical studies that include eight undergraduate and community samples, and statistical modelling of the PSDM and EMPDS using cross-sectional and longitudinal data.

#### **Study one:**

In line with the broad aim of the thesis, the purpose of study one was to extend and test the PSDM in a cross-sectional study of undergraduate and community samples. To date, research on the PSDM has produced supportive findings. However, suicide ideation has typically been excluded in tests of the PSDM. In addition, research on the PSDM has examined various markers of social disconnection as mediators (e.g., mattering), but no studies have examined anti-mattering as a mediator in the PSDM. Study one addresses these limitations by including suicide ideation as an outcome variable alongside depressive symptoms, and anti-mattering as a mediator alongside mattering in a test of the PSDM.

#### **Study two:**

The purpose of study two is to build on study one by conducting the most rigorous test of the PSDM to date. At present, almost all research on the PSDM has employed cross-sectional designs or longitudinal designs consisting of only two-waves of data. In addition, no research on the PSDM has examined suicide ideation longitudinally or mattering and anti-mattering longitudinally. Study two addresses these limitations by conducting a three-wave longitudinal test of the PSDM examining predictor (perfectionism), mediator (mattering and anti-mattering), and outcome variables (depressive symptoms and suicide ideation) at separate timepoints in undergraduate and community samples.

**Study three:**

The purpose of study three is to provide both the first test of the EMPDS extended to include suicide ideation and to test a new integrated model that combines the PSDM and the EMPDS in undergraduate and community samples. No studies, to date, have included suicide ideation as an outcome within the EMPDS. In addition, research has examined the PSDM and EMPDS independently. Study three, then, extends research by including suicide ideation as an outcome variable within a test of the EMPDS and integrates the PSDM and EMPDS in a separate test so to include markers of both social disconnection (mattering and anti-mattering) and existentialism (difficulty accepting the past) as mediators.

**Study four:**

The purpose of study four is similar to study two in that it provides a rigorous test of the EMPDS and the integrated model in undergraduate and community samples. In addition, to date, no studies have examined suicide ideation longitudinally within the EMPDS. To address these limitations, study four comprises of a three-wave longitudinal design in undergraduate and community samples of the EMPDS and integrated model. This robust longitudinal design examines predictor (perfectionism), mediator (mattering, anti-mattering,

and difficulty accepting the past) and outcome variables (depressive symptoms and suicide ideation) at separate timepoints.

## Chapter 4

Study one: A cross-sectional test of the Perfectionism Social Disconnection Model.

*“So many people are shut up tight inside themselves like boxes, yet they would open up quite wonderfully, if only you were interested in them” – Sylvia Plath (Plath, 2013).*

### 4.1 Introduction

The previous chapter summarized existing research on perfectionism, depressive symptoms, suicidality, the PSDM, and the EMPDS. While the PSDM has received burgeoning support thus far, there are still notable gaps in the literature. For instance, while the PSDM was originally intended to explain the perfectionism-suicidality relationship, research on suicidality in the PSDM is in its infancy. In addition, there are alternative markers of social disconnection (i.e., anti-mattering) which are yet to be examined particularly with suicide ideation as an outcome. No research, to date, has contrasted feelings of mattering with feelings of not mattering (i.e., anti-mattering) in the PSDM and in relation to suicidality. Building on this, research examining the mattering and suicidality relationship is not extensive, with no research examining this relationship in university students. Furthermore, while self-oriented perfectionism has previously been examined in the PSDM, its role remains inconclusive. Thus, the purpose of study one was to address all these limitations by including suicide ideation in the PSDM alongside depressive symptoms and examine anti-mattering alongside mattering as a mediator in the PSDM in a sample of university students and community adults. This chapter is largely dedicated to the theory and research of mattering and anti-mattering. Thereafter, the rationale for the study, methods, results, and findings of a cross-sectional empirical test of the PSDM is provided.

#### 4.1.1 Mattering

A purpose of study one was to examine additional markers of social disconnection in the PSDM. One marker of social disconnection is mattering. Rosenberg and McCullough (1981) first introduced the concept of mattering as an extension to Rosenberg's (1965) seminal work on self-esteem. However, until recent years, mattering has largely been ignored in positive psychology research (Flett, 2018b). Rosenberg and McCullough (1981) defined mattering as "the feeling that others depend on us, are interested in us, are concerned with our fate, or experience us as an ego-extension" (p. 165). Rosenberg and McCullough (1981) conceptualize mattering to have three facets: (1) attention – the feeling that one is noticed by others and that others are actively paying attention to us, (2) importance – the feeling of being significant to others who care about you and (3) dependence – the feeling of being important because others rely on you. Attention is conceptualized to be at the root of mattering and denotes the feeling that one is seen and heard by others and is an object of interest to another individual (Rosenberg & McCullough, 1981).

Though originally included within the importance facet, ego extension was later added as a fourth facet of mattering (Rosenberg, 1985). Ego extension captures the notion that individuals recognise someone is emotionally invested in them and if something happens to you, it also affects them (Rosenberg, 1985). For instance, an individuals' success or failures would bring joy or disappointment to others. Rosenberg added a fifth facet of mattering – noted absence – which denotes the sense that other people would miss us if we were no longer around. Schlossberg (1989) later added a sixth facet of mattering – appreciation – which captures the feeling that you and your actions are valued and appreciated by others. Finally, the concept of individuation was proposed as a final facet of mattering (Flett, 2018b). Individuation captures a sense of feeling that we are uniquely special and distinctive, and that people see our unique self and understand who we are. Indeed, people are thought to derive a sense of mattering from others who treat us as though

we are distinct from others (Flett, 2018b). This is particularly the case when people pick up on our attributes, quirks, or tendencies that others do not notice or overlook. Accordingly, an emphasis on the individual feels highly personal and captures a warm and caring sense that someone recognises the idiosyncrasies of another (Flett, 2018b).

Mattering can be considered as a core and distinct component of the relational self and social self (Flett, 2018b). Though not focused specifically on mattering, early theorizing by James (1890/1950) are highly relevant to self-esteem, the self-concept, and perceptions of mattering. James (1890/1950) acknowledged the intense feelings that may arise from feeling as though we do not exist or matter to others, and how feeling unworthy of attention can manifest into intense despair and desolation. In addition, James (1890/1950) also observed that people have a highly important social self which signifies our need for recognition and approval from others. Accordingly, James' (1890/1950) put forth the idea that we have as many social selves as we do people in our lives and suggested that our perceptions of mattering may change substantially within our relationships. James (1890/1950) also suggested that an idealized version of the social self exists, and that people tend to assess how close to the ideal social self they are. This notion maintains that people's satisfaction or dissatisfaction hinges on the cognitive importance of their social self, the degree of preoccupation of the social self, and perceptions of their discrepancy from their ideal social self and level of mattering.

Mattering is conceptualized as an interactional variable (Fazio, 2009). Specifically, the extent to which people feel like they matter will depend upon their relationships with others, how they interact with others and how others interact with them (Flett, 2018b). Mattering is viewed as bidirectional, reflecting dynamic changes between people (Flett, 2018b). In line with these ideas, the complementarity principle (Carson, 1969) suggests that interpersonal behaviour expressed by one person, will prompt a corresponding behaviour by

another. Based on the complementarity principle, it is suggested that people are at least partly able to influence their perceptions of mattering by showing others that they matter (Flett, 2018b; Flett, 2022). Equally, people who become avoidant due to the perception of not mattering, will be less likely to convey to others that they matter (Flett, 2018b).

Several authors have noted that mattering is closely related to other interpersonal constructs, such as belongingness, and social support (see Drabenstott, 2019; Elliott, 2009; Flett, 2018b). Rosenberg and McCullough (1981) initially evidenced the distinctiveness of mattering. Empirical research has shown mattering to be related to several interpersonal constructs which capture a sense of relatedness and connection, however mattering also has unique elements which are not captured by other constructs (Taylor & Turner, 2001). Mattering is distinct based on its emphasis of perceived importance to others and its focus on being valued by others and giving value to others (Casale & Flett, 2020; Flett, 2018b; Prilleltensky, 2020). In this sense, mattering focuses more on feeling important and significant, rather than simply feeling connected to others (Flett, 2018b). In addition, Rosenberg (1985) conceptualized mattering as a broader construct, which forms part of the self-concept and involves the continual and sincere interest in one's welfare and wellbeing (Elliott et al., 2005).

Mattering is also closely associated with self-esteem (Rosenberg & McCullough, 1981). Nevertheless, mattering has been shown to be empirically distinct (e.g., Flett & Nepon, 2020; Rosenberg & McCullough, 1981). For instance, Rosenberg & McCullough (1981) evidenced in their original work that mattering predicts unique variance in psychological distress beyond self-esteem. In particular, it is thought that mattering is tied closely with social self-esteem (Flett, 2018b). Social self-esteem captures a strong sense of self-acceptance, social acceptance, and high self-evaluation in interpersonal situations (Ziller et al., 1969). To test the association between mattering and social self-esteem, Flett and

colleagues examined mattering, social self-esteem, life satisfaction, and wellbeing. Though mattering was strongly associated with social self-esteem, findings revealed that these constructs are clearly distinct. Mattering also predicted additional variance in life satisfaction and wellbeing, beyond social self-esteem (see Flett, 2018b).

A perceived sense of feeling significant and mattering to others is instrumental to protect against life stressors and setbacks (Flett et al., 2012). Likewise, the perception that one matters to others is fundamental to a healthy and resilient self-concept and is believed to shape one's self-worth (Rosenberg & McCullough, 1981). Initial research by Rosenberg & McCullough (1981) found mattering to be positively associated with self-esteem, and negatively associated with anxiety and depression. Results have since been replicated and extended to further outcomes. Mattering, for instance, is found to negatively correlate with depressive symptoms (Dixon & Robinson Kurpius, 2008; Flett et al., 2021; Flett et al., 2012), anxiety (Dixon et al., 2009), social anxiety (Flett et al., 2016a), loneliness (Flett et al., 2016a), self-criticism (Joeng & Turner, 2015), emotional neglect (Flett et al., 2016a), levels of stress (Dixon & Robinson Kurpius, 2008), physical susceptibility to stress (e.g., Taylor et al., 2019) and suicide ideation (e.g., Elliott et al., 2005; Milner et al., 2016; Olcoñ et al., 2017) and positively correlate with self-esteem (Dixon & Robinson Kurpius, 2008; Elliott et al., 2005; Marshall, 2001), wellbeing (Dixon Rayle, 2005), happiness (Demir & Davidson, 2013), self-compassion (Joeng & Turner, 2015), and self-acceptance (Raque-Bogdan et al., 2011).

#### *4.1.2 Anti-mattering*

Inspired by the work of Schlossberg (1989), anti-mattering is a new construct, which signifies explicit feelings of not mattering, feeling invisible, not heard and marginalized by others (Flett, 2018b). Initial work by Schlossberg (1989) focused on the antithesis of mattering – feeling marginalized. Flett (2018b) built upon extant work on mattering, by acknowledging that all conceptualizations of mattering are in keeping with a



positive psychology orientation. Guided by research in other fields focusing on positive and negative orientations, Flett (2018b) proposed that mattering and anti-mattering which taps negative orientations are independent of one another (i.e., orthogonal). Flett's conceptualization of anti-mattering, then, captures the view that anti-mattering is not merely the opposite of mattering. Instead, these constructs are viewed as qualitatively distinct (Flett, 2018b, 2022; Flett et al., 2022b).

Research supports this notion. Recent evidence has found anti-mattering to predict unique variance in outcomes beyond variance attributed to mattering (e.g., Hill & Madigan, 2022; Flett et al., 2022b; McComb et al., 2020). Research, for instance, has found anti-mattering to positively predict academic stress and negatively predict effort regulation and time and environment management beyond low feelings of mattering (Hill & Madigan, 2022). McComb et al. (2020) found anti-mattering, but not low feelings of mattering, to predict trait loneliness. In addition, Krygsman et al. (2022) found anti-mattering, but not low levels of mattering, was found to predict unique variance in depressive symptoms each year over four years. In a validation study of the Anti-Mattering Scale, Flett et al. (2022b) found mattering to uniquely predict depressive symptoms, loneliness, and social anxiety beyond variance attributed to mattering. From this research, it can be concluded that anti-mattering is distinct from low feelings of mattering.

Building on earlier observations (James, 1890), it is suggested that severe negative feelings can arise when individuals' feel as though they don't matter to others (Flett, 2018b). As such, anti-mattering is a consequence of motivational and emotional processes that arise when individuals experience negative thoughts e.g., "*I don't matter*" and "*I'm not important*" (Flett, 2018b). And this failure to matter may emerge as a central source of shame (Elliott et al., 2011). For instance, it is hypothesized that individuals' experiencing high levels of anti-mattering may catastrophise and overgeneralize their thoughts to perceive they do not matter

at all and they will not matter in the future (Flett, 2018b). This feeling is thought to be one of the most disturbing perceptions human beings can experience (Elliott et al., 2004).

Conversely, if an individual perceives that they do matter even to one person, this may buffer the overgeneralized feeling of not mattering at all (Flett, 2018b).

Though research is in its infancy, initial validation research of the Anti-Mattering Scale has been conducted in Flett et al. (2022b). In this validation research among samples of university students, anti-mattering was found to be highly predictive of distress, beyond mattering. In addition, anti-mattering was found to negatively predict extraversion, agreeableness, emotional stability, growth-seeking, self-liking, self-competence, self-esteem, and positively predict validation seeking, negative affect, loneliness, social anxiety, and depression (see Flett et al., 2018b; Flett et al., 2022b). Furthermore, in a master's thesis, Atkey (2015) examined mattering, anti-mattering, and self-stigma of seeking help in high school students. Atkey (2015) found a significant moderate negative correlation between mattering and anti-mattering, providing further support for the notion that mattering and anti-mattering are related but distinct constructs. Moreover, differences between mattering and anti-mattering regarding their relationship with self-stigma for seeking help emerged, where only mattering, but not anti-mattering, was related to self-stigma for seeking help, further underscoring the distinctiveness of mattering and anti-mattering (Atkey, 2015).

#### *4.1.3 Perfectionism and mattering*

The need to matter should be especially relevant for perfectionistic individuals acquiring excessive needs for approval, acceptance, and an inordinate need for social connection (Blatt, 1995; Hamachek, 1978; Hollender, 1965). Accordingly, these individuals will be driven to attain expectations of perfection because they believe that only when expectations are met, they will be of worth and will matter to people who matter to them (Flett, 2018b). In this regard, people high in perfectionism (particularly socially prescribed

perfectionism) will likely adopt a conditional sense of mattering whereby a sense of mattering will only be achieved if certain expectations are met (Flett, 2022). Perfectionism and mattering, then, should be especially relevant for individuals with a conditional sense of self (Flett, 2018b). The powerful need to matter can be intensified when unmet and thus, will result in the individuals relentlessly engaging in perfectionistic behaviours to have their needs met (Hewitt et al., 2017).

Research substantiates the notion that perfectionism (i.e., socially prescribed perfectionism and perfectionistic self-presentation) is associated with feelings of not mattering to others (Cha, 2016; Flett et al., 2012; see Chapter three). Because socially prescribed perfectionism involves a perception that others' demand perfection from the self, this dimension is thought to hinder a sense of mattering to others because of the perception that others can never be satisfied or pleased (Cha, 2016; Hewitt & Flett, 1991b; Hewitt et al., 2017). As such, socially prescribed perfectionism has been linked to a sense of helplessness and hopelessness (Hewitt et al., 1991b; Hewitt et al., 2006; Hewitt et al., 2017). However, research suggests that a sense of mattering can act as a buffer in relationships between perfectionism and psychopathology (see Flett et al., 2012).

#### *4.1.4 Mattering and depression*

When individuals feel as though they do not garner approval and affection from others and feel as though they don't matter, it is likely they will develop a negative view of the self (Flett, 2018b). In cognitive accounts of depression, a negative view of the self is common (Beck, 1967). And a negative self-concept is likely to emerge succeeding recurrent exposure with significant others, who have failed to provide care, interest, and affection (Flett, 2018b). Depressive states, thus, may surface for individuals who perceive that they do not matter to others (Flett, 2018b). Moreover, the depressive paradox (i.e., a paradoxical tendency to blame oneself for adverse and uncontrollable experiences) is also likely to be a

mechanism which implicates depressive symptoms in people who feel they do not matter (Flett, 2018b). The depressive paradox is the tendency to blame the self for uncontrollable and negative experiences (see Abramson & Sackeim, 1977).

When a person feels as though they do not matter, through people not generating love and affection towards them, they may take on this responsibility to be their own fault (Flett, 2018b). Accordingly, this person may internalize this feel of not mattering as a deficient or defective aspect of the self (Flett, 2018b). And feelings of self-blame and self-criticism which ensue will likely contribute to feelings which are depressogenic (e.g., Flett et al., 2021). Moreover, within the concept of anti-mattering, it is suggested that individuals overgeneralize thoughts about not mattering, in the same way a depressed individual may overgeneralize negative thoughts. Overgeneralization is a tendency to attribute a negative part of the self to the entire self (Beck, 1967). For instance, individuals prone to depressive symptoms may hold the belief that they do not matter to anyone, not even to themselves (Flett, 2018b).

Extensive evidence implicates mattering and depressive symptoms (e.g., Dixon & Robinson Kurpius, 2008; Edwards & Neal, 2017; Elliott et al., 2005; Flett et al., 2021; Flett & Nepon, 2020; Flett et al., 2016d; Marshall & Tilton-Weaver, 2019; Taylor & Turner, 2001). Most cross-sectional studies examining the mattering-depressive symptoms relationships have been examined in university students (e.g., Dixon & Robinson Kurpius, 2008; Flett et al., 2021; Flett & Nepon, 2020). However, there are some cross-sectional studies which have examined the mattering-depressive symptoms relationship in alternative samples to university students, including children and adolescents (Dixon et al., 2009; Flett et al., 2016d). Flett et al. (2016d), for instance, examined mattering as a protective factor for depression. The authors found that lower levels of depression were evident among children who reported greater feelings of mattering, alongside greater unconditional self-acceptance, self-esteem and lower self-criticism and dependency. In addition, regression analysis revealed

that lower mattering predicted unique variance in depression (alongside lower unconditional self-acceptance, self-esteem, and greater dependency).

In an earlier study, Dixon et al. (2009) examined relationships between mattering and anxiety and mattering and depression cross-sectionally in young adolescents. As expected, the authors found perceived mattering to be significantly inversely related to adolescents' anxiety and depressive levels. Edwards and Neal (2017) conducted a further study in high school students. Though part of a broader study examining school and community characteristics and dating violence victimization, Edwards and Neal (2017) examined the relationship between levels of community mattering and depressive symptoms. The authors found that among dating violence victims, higher levels of community mattering were found to be negatively related to depressive symptoms.

Several studies have examined the mattering-depressive symptoms relationship in university samples. An early cross-sectional study by Dixon and Robinson Kurpius (2008), for instance, examined interrelationships between depression, stress, mattering, and self-esteem in college students. Participants completed self-report measures of stress, self-esteem, depression and mattering (measured using a modified version of the General Mattering Scale). Mattering was positively related to self-esteem and negatively related to depression. Further regression analyses revealed that sex, self-esteem, and mattering predicted additional variance in depression, beyond stress. When combined with stress, sex, mattering, and self-esteem accounted for a significant proportion of the variance in depression.

In a later cross-sectional study, Flett et al. (2021) examined the extent to which mattering is associated with insecure attachment styles, rumination, self-criticism, and depression in university students. Participants completed self-report measures of insecure attachment styles, rumination, self-criticism, depression and mattering assessed via the General Mattering Scale (Rosenberg & McCullough, 1981). Findings revealed that mattering

was negatively related to depression. Further regression analyses revealed that mattering uniquely predicted depression beyond variance attributed to insecure attachment, rumination, and self-criticism. In addition, rumination was also found to mediate the link between low mattering and depression. Findings provide further support for the mattering-depressive symptoms relationship in samples of university students.

In a similar study to Flett et al. (2021), Flett and Nepon (2020) examined relationships between mattering and psychological distress (depression and social anxiety) in university students. More specifically, the authors examined whether mattering predicted distress beyond self-esteem and regulatory focus. The authors also examined whether negative social feedback mediated the mattering-distress relationship. Mattering was assessed via the General Mattering Scale (Rosenberg & McCullough, 1981). Correlational analyses revealed that mattering was negatively correlated with depressive symptoms. Mattering was found to be uniquely related to distress (depression and social anxiety), beyond self-esteem and regulatory focus. In addition, negative social feedback mediated the relationship between mattering and distress.

In a recent study among university students, Giangrasso et al. (2022) extended existing research and examined relationships between mattering, anti-mattering, and distress (anxiety and depressive symptoms) during the COVID-19 pandemic. Participants completed measures of mattering and anti-mattering (measured via the General Mattering Scale and the Anti-Mattering Scale; Flett et al., 2022; Rosenberg & McCullough, 1981), alongside measures of life satisfaction, depression and anxiety. Mattering was negatively correlated with depression, whereas anti-mattering was positively correlated with depression. In addition, depressive symptoms was found to mediate the relationship between anti-mattering and life satisfaction. Collectively, research supports the positive relationship between low

feelings of mattering and depressive symptoms across various samples including children, adolescents, and university students.

#### *4.1.5 Mattering and suicide ideation*

To not matter to others is a devastating realization that can result in profound repercussions; the most serious would be to question the value of existence (Elliott et al., 2005). Accordingly, research suggests that individuals who feel they do not matter are prone to experiencing suicide ideation (e.g., Joiner et al., 2009). As such, it is suggested that higher levels of mattering may act as a protective factor against the onset of suicidality (Elliott et al., 2005). For instance, at a basic level, if individuals feel that others pay attention to them and care about them, then it may be enough to feel as though life is worth living (Elliott et al., 2005). Though the ‘You Matter’ theme is central to suicide prevention programs, research examining mattering and suicide ideation to date is not extensive. Research which does exist examining mattering and suicidality, however, has supported these assertions (e.g., Elliott et al., 2005; Joiner et al., 2009; Milner et al., 2016).

To date, only four studies have examined the mattering-suicidality relationship (Elliott et al., 2005; Joiner et al., 2009; Milner et al., 2016; Olcoñ et al. 2017). These studies have examined this relationship in various samples including adolescents, high school students, young adults and a community sample. In an early study among adolescents, Elliott et al. (2005) examined the relationship between mattering and suicide ideation. The authors included self-esteem and depression as possible intervening variables in this relationship. An odds-ratio analysis detected a strong inverse effect of mattering on suicide ideation after controlling for other predictor variables. In addition, self-esteem and depression were found to fully mediate the mattering-suicide ideation relationship, where mattering was the primary source of mediation. Results demonstrated that mattering predicted self-esteem, which in turn, predicted depression, and ultimately suicide ideation.

Building on earlier research, Joiner et al. (2009) tested the Interpersonal-Psychological Theory of suicidal behaviour in a sample of young adults exhibiting sadness or anhedonia symptoms. The authors tested whether the interaction of low family support (as a marker of thwarted belongingness) and low levels of mattering assessed using Rosenberg's General Mattering Scale (as a marker of perceived burdensomeness) would predict suicide ideation. In this study, while Joiner et al. (2009) did not explicitly set out to incorporate mattering in the model, perceptions of mattering were used as a proxy for thwarted belongingness. Results revealed a small positive association between low mattering and suicide ideation. In addition, low levels of mattering were also related to lifetime major depression and the onset of depression lasting at least six months, whereas higher levels of mattering were related to greater family support. Further analyses revealed that low family support interacted with low mattering to predict suicide ideation beyond six-month depression and lifetime depression. Findings suggest that low levels of mattering may interact with other predictors of suicide ideation.

In later years, Olcoñ et al. (2017) examined associations between school and community mattering and suicide ideation and attempts in high school students. Analyses confirmed that lower levels of mattering in the community were evident among those who experienced suicide ideation or who had made a suicide attempt. Logistic regression models examined significant factors in groups who reported suicide ideation versus those reporting no suicide ideation. In particular researchers estimated that perceptions of mattering in the community could decrease the likelihood of suicide ideation by approximately 34% and suicide attempts by 20%. Findings emphasise the importance of perceived mattering in the community in suicide prevention. Only one study examining the mattering-suicidality relationship has been examined in a community sample. Milner et al. (2016), for instance, examined the protective role of perceived mattering in relation to suicidality in an Australian



working population. Regression analysis found higher perceived mattering to be negatively related to suicide ideation, controlling for psychological distress, demographic variables, and relationship variables.

In summary, there are a number of studies examining the mattering-depressive symptoms relationship. However, less research has examined the mattering-suicide ideation relationship. The mattering-depressive symptoms relationship has been examined in a range of samples, including children, adolescents, and high school students (e.g., Edwards & Neal, 2017; Flett et al., 2016d; Taylor & Turner, 2001). However, most studies have supported this relationship in university students (e.g., Dixon & Robinson Kurpius, 2008; Flett et al., 2021; Flett & Nepon, 2020). In contrast, the mattering-suicide ideation link has also been examined in various samples including adolescents, high school students, young adults, and community adults (Elliot et al., 2005; Joiner et al., 2009; Milner et al., 2016), however no studies have examined this relationship in university students. Research examining the mattering-suicide ideation relationship in a university sample is warranted. The studies mentioned above, however, are informative for research examining the PSDM including these variables.

#### *4.1.6 Advancing research on the PSDM*

Though the PSDM was initially developed to explain the perfectionism-suicidality link, to date, two studies have investigated the perfectionism-suicidality relationship through the lens of the PSDM (e.g., Roxborough et al., 2012; Robinson et al., 2022). In the first study, Roxborough et al. (2012) found socially prescribed perfectionism and perfectionistic self-presentation to indirectly predict suicidal behaviour via social hopelessness in a clinical sample of children and adolescents. In addition, perfectionistic self-presentation indirectly predicted suicidal behaviour via being bullied. In the second study, Robinson et al. (2022) found socially prescribed perfectionism to indirectly predict suicide ideation via interpersonal hopelessness in US adults with a history of suicide ideation. While some initial

support is evident for the inclusion of suicide ideation in the PSDM, future research examining suicide ideation is warranted.

In contrast, numerous studies have examined depressive symptoms as an outcome variable in the PSDM (e.g., Hewitt et al., 2020; Mackinnon et al., 2012; Rnic et al., 2021). These studies have examined various markers of social disconnection as mediators in the PSDM (e.g., interpersonal discrepancies, negative social feedback, and social self-esteem; Nepon et al., 2011; Sherry et al., 2013a; Smith et al., 2017b). However, there are alternative markers of social disconnection which are yet to be examined. To date, two studies have examined mattering as a mediator between perfectionism and depressive symptoms (Cha, 2016; Flett et al., 2012), however no studies have examined feelings of anti-mattering in this relationship or in the perfectionism-suicide ideation relationship. Examining anti-mattering alongside mattering in the PSDM is important given its stronger relations with social disconnection and maladjustment (see Flett, 2018b). Here, the sense of demoralization and marginalization that characterize anti-mattering may be particularly important to the PSDM.

In addition, while several studies have examined the mattering-depressive symptoms relationship in various samples, including university students and community adults, research examining the mattering-suicide ideation relationship is not very extensive. To date, no research has examined the mattering-suicide ideation relationship in university students. However, it is important to do so to determine the extent to which the mattering-suicide ideation relationship generalizes to university samples. Given the robust associations found between mattering, depressive symptoms, and suicidality to date (e.g., Elliott et al., 2005; Joiner et al., 2009; Marshall & Tilton-Weaver, 2019), research examining perceptions of mattering and not mattering (i.e., anti-mattering) as markers of social disconnection in the PSDM may be particularly informative.

#### *4.1.7 The present study*

The present study extends research in five ways. First, research has largely overlooked suicide ideation in the PSDM (e.g., Robinson et al., 2022). However, it is important to determine whether the PSDM extends to include suicide ideation. This study, then, includes suicide ideation as a key outcome variable. Second, feelings of not mattering (i.e., anti-mattering) are yet to be examined as a marker of social disconnection in the PSDM, particularly with suicide ideation as an outcome. Research is required to determine whether anti-mattering emerges as an important mediator. This study is the first to include anti-mattering as a marker of social disconnection in the PSDM. Third, research is yet to contrast mattering and as well as explicit feelings of not mattering (i.e., anti-mattering) in relation to depression, suicidality, or within the PSDM. Research contrasting these mediators are required to determine which is the most important. The present study is novel in that it includes and contrasts mattering and anti-mattering as markers of social disconnection within the same model.

Fourth, research examining the mattering-suicide ideation relationship is not very extensive, with no research examining this relationship in university students. It is important to determine whether feelings of mattering can be protective against suicide ideation within a university sample. This study addresses this limitation by examining this relationship in both a university and community sample. Fifth, research examining self-oriented perfectionism in the PSDM is inconclusive. Including self-oriented perfectionism in the PSDM is important to help reconcile contradictory findings. The present study includes self-oriented perfectionism alongside socially prescribed perfectionism as a predictor variable in this model. Study one, therefore, extends research by including suicide ideation as an outcome alongside depressive symptoms and anti-mattering as a mediator alongside mattering in a cross-sectional test of the PSDM in university students and community adults.

#### *4.1.8 The purpose of study one*

Against this background, then, the purpose of study one was to advance research by conducting a cross-sectional test examining the indirect relationship between perfectionism, depressive symptoms, and suicide ideation via mattering and anti-mattering. Guided by theory (Flett, 2018b; Hewitt et al., 2006; Hewitt et al., 2017) and research (e.g., Flett et al., 2012), it was hypothesized that socially prescribed perfectionism would indirectly predict depressive symptoms and suicide ideation via mattering and anti-mattering. Conversely, the indirect effect of self-oriented perfectionism on depressive symptoms and suicide ideation via mattering and anti-mattering was considered exploratory. Given that other-oriented perfectionism is related to more objective markers of social disconnection (see Sherry et al., 2016) and is a weak predictor of depressive symptoms and suicide ideation (Limburg et al., 2017; Smith et al., 2018a), it was excluded from studies in the thesis.

## **4.2 Method**

### *4.2.1 Methodological design of studies in the thesis*

The thesis is formed of two cross-sectional studies (studies one and three) and two three-wave longitudinal studies (studies two and four). Cross-sectional designs were adopted prior to replicating the study relationships in three-wave longitudinal designs. This methodological design was chosen for two reasons. First, it is important to establish the study relationships cross-sectionally and test which establish the strongest relationships before investing in a three-wave longitudinal design. Second, contrasting findings of the cross-sectional and longitudinal studies are important to highlight any discrepancies in findings which would likely be attributed to differences in the robustness of the methodological design. This is particularly important given that much of the literature on the PSDM has relied upon cross-sectional research (e.g., Flett et al., 2012; Nepon et al., 2011; Robinson et al., 2022) and because a key aim of the thesis is to methodologically advance research on the PSDM.

#### 4.2.2 Participants

Two samples of participants were recruited. The first sample consisted of 164 undergraduate students (55.56% female;  $M_{\text{age}} = 19.98$  years,  $SD = 1.42$ ) recruited from psychology and sport modules at York St John University in the United Kingdom.

Participants were predominantly White British (87.10%) and were in their first (17.7%), second (41.5%) or third year (40.9%) of university. The second sample consisted of 205 community adults (65.40% female;  $M_{\text{age}} = 37.92$  years,  $SD = 12.97$ ) recruited from Prolific Academic, an online crowdsourcing platform for academic researchers. Participants were from the United Kingdom and were predominantly White British (88.30%).

#### 4.2.3 Procedure

Prior to data collection, the study was approved by York St John university's research ethics committee (see Appendix A.1; Ethics reference code: 000016116/04062018). For the university sample, module leaders were contacted to obtain access to the undergraduate students. Participants provided informed consent prior to participating (see Appendix B.2). With the principal investigator present, university students completed a pen-and-paper questionnaire containing the study variables on one occasion only. Questionnaires were distributed in a lecture setting and took approximately 10 minutes to complete. University students were made aware that involvement in the study was completely voluntary and were provided with a debrief sheet following completion of the study (see Appendix B.5).

For the undergraduate sample, a paper-and-pen questionnaire completed in person (vs. online data collection completed elsewhere) was chosen across studies as this was considered the most effective way to collect data within the setting. This method provided a designated time for students to complete the questionnaire and was considered more efficient for data collection in comparison to sending email prompts to students for completion of an online survey. An in-person design was also important to allow the principal investigator to give a

brief overview of the study and allow students the opportunity to ask questions regarding the study with an immediate response provided. While it is important to acknowledge that students may have been greater inclined to report socially desirable answers through an in-person format, given that the researcher and fellow students were in close proximity, the in-person format was deemed to be most appropriate for the study. In addition, as the data collection took place in a classroom-based setting with no computers, it was considered more feasible to provide paper copies of the questionnaire for students to complete.

For the community sample, only participants from the United Kingdom with 100 previous submissions and a 95% or above approval rate on Prolific, were invited to partake in the study. Eligible participants were invited to participate in the study on a first-come first-served basis. Participants provided informed consent prior to participating. On one occasion, participants completed an online questionnaire on Qualtrics via Prolific Academic. Participants were able to contact myself as the researcher on Prolific if they had any questions and could opt out at any time prior to completion. Upon signing up to Prolific, participants were given a Prolific ID which allowed them to remain anonymous. As a reward for their time, participants were paid £0.85 to complete the online questionnaire.

#### *4.2.4 Measures*

##### *4.2.4.1 Multidimensional Perfectionism*

Perfectionism was measured using a short-form of Hewitt and Flett's (1991b) Multidimensional Perfectionism Scale (HF-MPS-SF; Hewitt et al., 2008; see Appendix C.2 for the measure). This scale comprises of three dimensions, including self-oriented perfectionism (5 items; e.g., "I strive to be as perfect as I can be"), socially prescribed perfectionism (5 items; e.g., "People expect nothing less than perfection from me") and other-oriented perfectionism (5 items; e.g., "I have high expectations for the people who are

important to me”). Participants rated items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicate greater perfectionistic tendencies.

The HF-MPS-SF has been widely used and extensive evidence supports its validity and reliability (e.g., Smith et al., 2017a; Smith et al., 2017b; Smith et al., 2019a). For instance, internal reliabilities range from .77 to .89 (Hewitt et al., 2008; Smith et al., 2017b; Smith et al., 2017c). The HF-MPS-SF exhibits good four-month test-retest reliability in students ( $r = .61$  to  $.78$ ; Mackinnon et al., 2014b). In addition, evidence supports the incremental, predictive, discriminant, and convergent validity of the HF-MPS-SF (e.g., Hewitt et al., 2008; Stoeber, 2018). For instance, evidence has demonstrated that the HF-MPS-SF has psychometric properties similar to the original scale and do not compromise the validity and reliability (Stoeber, 2018). In addition, subscales of the HF-MPS-SF are strongly correlated with self-oriented perfectionism ( $r = .91$ ), socially prescribed perfectionism ( $r = .90$ ) and other-oriented perfectionism ( $r = .81$ ) of the original scale (Hewitt, et al., 2008).

In addition, construct validity has been obtained with the HF-MPS-SF and a range of outcomes. Recent research, for instance, found self-oriented perfectionism, socially prescribed perfectionism and other-oriented perfectionism from the HF-MPS-SF to be negatively correlated with social self-esteem (Smith et al., 2017b). In addition, socially prescribed perfectionism and other-oriented perfectionism were also found to be positively correlated with depressive symptoms, whereas self-oriented perfectionism was unrelated to depressive symptoms (Smith et al., 2017b). In addition, Stoeber (2018) compared both short forms of the HF-MPS (Cox et al., 2002; Hewitt et al., 2008) and examined the degree to which scales replicated correlations of the original HF-MPS. Stoeber (2018) found Hewitt et al.’s short form to perform well when compared to the original HF-MPS. Dimensions of the HF-MPS-SF were related to a range of outcomes, including five-factor model traits, obsessive-compulsive traits, and social goals (see Stoeber, 2018 for a detailed overview).

#### 4.2.4.2 *Mattering*

Mattering was measured using the five-item General Mattering Scale (GMS; Marcus & Rosenberg, 1987; Rosenberg & McCullough, 1981; see Appendix C.3 for the measure). The GMS is the most widely used measure of mattering. This scale measures how much an individual perceives he or she matters to others and words items in a positive direction (e.g., “How important do you feel you are to other people?”, “How much do you feel other people pay attention to you”, and “How much do you feel others would miss you if you went away?”). Participants responded to the GMS using a four-point scale ranging from 1 (*not at all*) to 4 (*a lot*). Higher scores on the GMS indicate greater perceptions of mattering to others.

Research supports the validity and reliability of the GMS (e.g., Atkey, 2015; Rosenberg & McCullough, 1981; Taylor & Turner, 2001). The GMS, for instance, demonstrates good internal reliability ( $\alpha$  range from .69 to .89; e.g., Besser et al., 2020; Flett et al., 2016d; Flett et al., 2022b; Joiner et al., 2009). Test-retest reliability ranged from  $r = .65$  to  $.67$  between one and three years in a sample of young adults (Krygsman et al., 2022). A confirmatory factor analysis reveals that the items have good fit and represent one single factor (see MacDonald et al., 2020; Rosenberg & McCullough, 1981; Taylor & Turner, 2001).

Research has provided support for the validity of the GMS. Early research by Rosenberg & McCullough (1981), for instance, found the GMS to be negatively correlated with depression, anxiety, and delinquency, and positively correlated with self-esteem. More recently, Besser et al. (2020) found mattering to be positively related to self-esteem, positive automatic thoughts, adaptability, and positive mood, and negatively related to anti-mattering, fear of not mattering, dependency, self-criticism, negative automatic thoughts, distress, negative mood, loneliness, and loneliness-related automatic thoughts. Further research by Flett et al. (2021) found the GMS to be positively correlated with self-reassurance and



negatively correlated with personal inadequacy, persecution of the self, brooding and depression.

Providing additional support of its construct validity, in the first study of three in samples of university students, Flett et al. (2022b) found mattering to be positively correlated with extraversion, agreeableness, conscientiousness, emotional stability, openness to experience, growth seeking, self-liking and self-competence and negatively correlated with anti-mattering, and depressive symptoms. In the second study, Flett et al. (2022b) found mattering to be positively correlated with extraversion and positive affect and negatively correlated with emotionality and negative affect. In the third study, Flett et al. (2022b) found mattering to be positively correlated with autonomy, competence, relatedness, and self-esteem and negatively correlated with social anxiety and loneliness.

#### 4.2.4.3 *Anti-mattering*

Anti-mattering was measured using the five-item Anti-Mattering Scale (AMS; described in Flett 2018b; Flett et al., 2022b; see Appendix C.4 for the measure). The AMS captures feelings of not mattering and a sense of insignificance arising from negative social interactions and experiences of marginalization (Flett, 2018b). The AMS parallels the GMS, but words items in a negative direction (e.g., “How often have you been treated in a way that makes you feel like you are insignificant?”, “How much do you feel like you will never matter to certain people?”, and “How often have you been made to feel by someone that they don’t care about what you think or what you have to say?”). Participants responded to the AMS using a four-point scale from 1 (*not at all*) to 4 (*a lot*). Higher scores on the AMS indicate greater perceptions of not mattering to others.

Flett et al. (2022b) found support for the reliability and validity of AMS. The AMS, for instance, has high internal reliability ( $\alpha = .87$  to  $.91$ ; Besser et al., 2020; Krygsman et al., 2022; Shannon et al., 2019). Internal reliabilities ranged from  $\alpha = .86$  to  $.91$  in three samples

of university students (Flett et al., 2022b). One-week test-retest reliability was  $r = .65$  (Flett et al., 2022b). Krygsman et al. (2022) found test-retest reliability to range from  $r = .61$  to  $.71$  between one and three years in young adults. Confirmatory factor analyses revealed that the unidimensional model provided excellent fit to the data (Flett et al., 2022b).

In support of its construct validity, in the first study of three in samples of university students, Flett et al. (2022b) found anti-mattering to be negatively correlated with mattering, extraversion, agreeableness, emotional stability, openness to experience, growth seeking, self-liking and self-competence and positively correlated with validation seeking and depressive symptoms. In the second study, Flett et al. (2022b) found anti-mattering to be negatively correlated with mattering, extraversion, and positively correlated with emotionality and negative affect. In the third study, Flett et al. (2022b) found anti-mattering to be negatively correlated with mattering, autonomy, competence, relatedness, and self-esteem and positively correlated with social anxiety, and loneliness.

Other research has provided support for the validity of the AMS. Early research on the AMS, for instance, found anti-mattering to be significantly negatively correlated with mattering measured by the GMS, and social desirability (Atkey, 2015). More recently, Besser et al. (2020) found anti-mattering to be positively correlated with fear of not mattering, dependency, self-criticism, negative automatic thoughts, distress, negative mood, loneliness, and loneliness-related automatic thoughts and negatively correlated with self-esteem, positive automatic thoughts, adaptability, and positive mood. Giangrasso et al. (2022) found anti-mattering to be positively correlated with perceived stress, anxiety and depression, and negatively correlated with satisfaction with life.

#### *4.2.4.4 Depressive symptoms*

Depressive symptoms were measured using a 10-item short-form of Radloff's (1977) Centre for Epidemiological Studies Depression Scale (CES-D-SF). The CES-D-SF

measures how often participants experience symptoms associated with depression (e.g., “I felt my life had been a failure”, “I felt hopeful” (reverse scored), and “I felt like I could not shake off the blues even with help from my friends and family”); Cole et al., 2004; see Appendix C.6 for the measure). Items were rated on a 4-point scale which assessed the frequency each item was present over the past month from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Two items which were positively worded were reverse scored. Higher scores on the CES-D-SF indicate greater depressive symptoms. Scores on the CES-D-SF range from 0 to 30 with higher scores reflecting greater depressive symptoms.

Cole et al.’s (2004) validation study provided initial support for the psychometric properties of the CES-D-SF. For example, Cole et al. (2004) found internal reliability of the CES-D-SF to be high ( $\alpha = .75$ ; Cole et al., 2004). Studies have since demonstrated high internal reliability of the CES-D-SF ( $\alpha = .77$  to  $.88$ ; McGrath et al., 2012; Nealis et al., 2020; Smith et al., 2017b). In addition, two-week test-retest reliability was  $r = .68$  in a sample of female undergraduates (Smith et al., 2017b). Tests of structural validity indicated that a single factor model of the CES-D-SF exhibited the best fit (Cole et al., 2004). Shortening the original 20-item scale to 10 items has been found to improve psychometric properties of the scale (Cole et al., 2004).

The CES-D-SF was found to highly correlate with the Beck Depression Inventory ( $r = .74$ ; Cole et al., 2004). Additional evidence has provided support for the construct validity of the CES-D-SF (e.g., McGrath et al., 2012; Smith et al., 2017b; Nealis et al., 2020). McGrath et al. (2012), for instance, provided support for convergent validity and found the CES-D-SF to be strongly correlated with the original subscale ( $r = .94$ ). Smith et al. (2017b) found the CES-D-SF to positively correlate with socially prescribed perfectionism and negatively correlate with social self-esteem. Providing further support of construct validity,

Nealis et al. (2020) found the CES-D-SF to positively correlate with self-critical perfectionism, perfectionistic strivings and daily hassles.

#### 4.2.4.5 *Suicide Ideation*

Suicide ideation was measured using Beck's Scale for Suicide Ideation (BSS; Beck & Steer, 1993; 21 items; see Appendix C.7 for the measure). The BSS assesses individual's thoughts, attitudes, and intentions towards suicide. Items 1-19 assess current suicidal ideation. Items provide each participant with three responses which increase according to the intensity of suicidality (e.g., "I have a moderate to strong wish to live", "I have a weak wish to live" or "I have no wish to live"). Participants circled one statement of each item that best described how they had been feeling in the past week, ranging from 0 to 2 on severity. The first 19 items are summed to yield a total score indicative of suicide risk, ranging from 0 to 38. Higher scores on the BSS indicates greater suicide ideation. Notably, if participants score a rating of 0 on all of the first five items, they are not required to complete the following 14 items. Items 20 and 21 assess past suicidal attempts (e.g., "I have never attempted suicide", "I have attempted suicide once" or "I have attempted suicide two or more times"). Beck and Steer (1993) report that items 20 and 21 are not used in the calculation of the total BSS score. Consistent with previous research (e.g., Chen et al., 2017; Owen et al., 2018; Van Orden et al., 2008), items 20 and 21 were not used in the present analyses.

The BSS demonstrates strong validity and reliability in various populations (Beck & Steer, 1993; Brown et al., 1997), including university students (Cukrowicz et al., 2011; Miller et al., 2001; Troister et al., 2013) and community adults (Klonsky & May, 2015). For example, the BSS has high internal reliability ( $\alpha > .71$ ; e.g., Beck & Steer, 1993; Chen et al., 2017; DeLisle & Holden, 2009; Flamenbaum & Holden, 2007; Holden & DeLisle, 2005; Miranda et al., 2013; Owen et al., 2018; Troister & Holden, 2010). Moderate test-retest reliability ( $r = .54$ ) and strong test-retest reliability ( $r = .88$ ) was found over one-week with a

sample of psychiatric inpatients (Beck & Steer, 1988; Pinniti et al., 2002). Four-month test-retest reliability for the BSS was  $r = .53$  in a sample of bipolar disorder patients (Owen et al., 2018). In addition, five-month test-retest reliability for the BSS was  $r = .65$  to  $.70$  in samples of undergraduates and high-risk undergraduates (Troister et al., 2013).

Factor analysis produced two subscales: motivation subscale and preparation subscale (Beck et al., 1997; Holden & DeLisle, 2005). The motivation subscale captures more passive aspects, including ambivalence towards living or dying and the frequency and duration of suicide ideation, whereas the preparation subscale refers to more active aspects, such as the planning of suicide. The BSS is highly correlated with a clinician-administered version for inpatients and outpatients; Beck et al., 1988). The BSS has also been found to be positively correlated with the Beck Depression Inventory and the Beck Hopelessness scale (Beck et al., 1988). In addition, the BSS is also positively correlated with The Defeat Scale, The Entrapment Scale, The Beck Hopelessness Scale, and the CES-D-SF (Owen et al., 2018). Longitudinal measurement invariance has also been found for the BSS (de Beurs et al., 2015).

#### *4.2.5 Data analytical strategy*

The preliminary analyses involved examining missing values, detecting multivariate outliers, and testing reliability of the measures. The primary analyses involved calculating descriptive statistics and bivariate correlations. Effect sizes of correlations were based on Cohen's (1992) guidelines for small, medium, and large effects ( $r = .10, .30, .50$ ). Independent samples *t*-tests were run to determine whether study variables significantly differed across the university student and community sample. The model was tested using path analysis with full information maximum likelihood estimation in Mplus version 8.0. (Muthén & Muthén, 1998-2017). Full maximum likelihood estimation was used as it uses available cases to produce unbiased parameter estimates in the presence of missing data

(Enders, 2010). The significance of indirect effects was determined using bias-corrected bootstrapping with 20,000 resamples (Shrout & Bolger, 2002). Bias-corrected bootstrapping was selected as a non-parametric alternative as indirect effects often have distributions skewed away from zero (Shrout & Bolger, 2002). If the 95% bias-corrected bootstrapped confidence interval for an indirect effect does not include zero within its upper and lower bounds, it infers mediation.

#### 4.2.6 Preliminary Analyses

On inspection, 0.69% of data points were missing for the university sample. No data points were missing for the community sample. Little's (1988) missing completely at random (MCAR) test provided evidence that the data was MCAR  $\chi^2(34) = 30.162, p = .656$ . As such, missing data was handled using full information maximum likelihood. Because multivariate outliers distort results of correlational analyses, three participants from the university sample and five participants from the community sample who exhibited a Mahalanobis distance above the critical value of  $\chi^2(7) = 24.322, p < .001$  were excluded from the analyses (Tabachnick & Fidell, 2007). This yielded a final sample of 161 university students ( $M_{age} = 20.00, SD = 1.42$ ; female 54.7%; 1.2% undisclosed) and 200 community adults ( $M_{age} = 37.76, SD = 12.85$ ; female 64.2%; 1% undisclosed).

### 4.3 Results

#### 4.3.1 Descriptive statistics

Means, standard deviations, Cronbach's alphas, and bivariate correlations are reported in Table 4.1. Alpha reliabilities were  $\alpha > .81$  in the university sample and  $\alpha > .85$  in the community sample. Bivariate correlations were calculated with age. In the university sample, age was uncorrelated with all variables, with the exception of anti-mattering and depressive symptoms. Here, age displayed small-to-moderate negative correlations with anti-mattering and depressive symptoms. In the community sample, age displayed small-to-

moderate negative correlations with self-oriented perfectionism, socially prescribed perfectionism, depressive symptoms and suicide ideation. Age also displayed a small negative correlation with anti-mattering and a small-to-moderate positive correlation with mattering. However, age and other-oriented perfectionism were uncorrelated. Given that age was correlated with variables, it was examined as a covariate in later analyses.

In the university sample, self-oriented perfectionism displayed a small to medium positive correlation with anti-mattering and a small positive correlations with depressive symptoms. However, the correlation between self-oriented perfectionism and mattering, as well as the correlation between self-oriented perfectionism and suicide ideation was non-significant. By contrast, socially prescribed perfectionism displayed small-to-moderate positive correlations with suicide ideation, and moderate-to-large positive correlations with depressive symptoms and anti-mattering. However, the relationship between socially prescribed perfectionism and mattering was non-significant. Mattering also displayed a moderate negative correlation with depressive symptoms and suicide ideation, whereas anti-mattering displayed a large positive correlation with depressive symptoms and a moderate-to-large correlation with suicide ideation (see Table 4.1).

In the community sample, self-oriented perfectionism displayed a small to medium positive correlation with anti-mattering and a small positive correlations with depressive symptoms. The correlation between self-oriented perfectionism and mattering, as well as the correlation between self-oriented perfectionism and suicide ideation, however, was non-significant. Socially prescribed perfectionism displayed small-to-moderate positive correlations with suicide ideation, and moderate-to-large positive correlations with anti-mattering and depressive symptoms. In addition, a small negative correlation between socially prescribed perfectionism and mattering was found. In this sample, mattering displayed a large negative relationship with depressive symptoms and a moderate-to-large

negative relationship with suicide ideation, whereas anti-mattering displayed a large positive relationship with depressive symptoms and a moderate-to-large positive relationship with suicide ideation (see Table 4.1).

Independent samples t-tests compared study variables across samples. Compared with the community sample, the university sample reported significantly higher levels of mattering ( $t(355) = 14.90, p < .001$ ) and anti-mattering ( $t(355.86) = 10.49, p < .001$ ).

#### 4.3.2 Path Analysis

##### 4.3.2.1 University sample

Models were just-identified (i.e.,  $df = 0$ ). As such, fit indices are not reported. For the university sample, the total indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.01$  [95% CI  $-.06, .02$ ],  $SE = .02$ ), and anti-mattering ( $\beta = .01$  [95% CI  $-.09, .10$ ],  $SE = .05$ ) was non-significant. The total indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.01$  [95% CI  $-.08, .03$ ],  $SE = .03$ ), and anti-mattering ( $\beta = .00$  [95% CI  $-.05, .05$ ],  $SE = .03$ ) was also non-significant. The total indirect effect of socially prescribed perfectionism on depressive symptoms via mattering was non-significant ( $\beta = .02$  [95% CI  $-.00, .07$ ],  $SE = .02$ ). The total indirect effect of socially prescribed perfectionism on depressive symptoms via anti-mattering was significant ( $\beta = .17$  [95% CI  $.05, .30$ ],  $SE = .06$ ). The total indirect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .03$  [95% CI  $-.01, .09$ ],  $SE = .03$ ) was non-significant. The indirect effect of socially prescribed perfectionism on suicide ideation via anti-mattering ( $\beta = .09$  [95% CI  $.03, .18$ ],  $SE = .04$ ) was significant (see Figure 3.1).

##### 4.3.2.2 Community sample

The total indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.02$  [95% CI  $-.07, .01$ ],  $SE = .02$ ) and anti-mattering ( $\beta = -.09$  [95% CI  $-.19,$



Table 4.1.

*Bivariate correlations, means, standard deviations, and alpha reliabilities across the university and community sample*

Variable	1	2	3	4	5	6	7	8	Mean	SD	$\alpha$
1. Age	—	-.23**	-.26**	-.09	.25**	-.14*	-.27**	-.20**	—	—	—
2. Self-oriented perfectionism	.08	—	.60**	.58**	-.02	.11	.13	-.07	4.35	1.45	.92
3. Socially prescribed perfectionism	.10	.54**	—	.53**	-.16*	.35**	.40**	.12	3.90	1.26	.85
4. Other-oriented perfectionism	.13	.50**	.55**	—	-.01	.03	.07	-.13	3.77	1.28	.85
5. Mattering	-.01	-.02	-.10	-.03	—	-.68**	-.59**	-.34**	2.72	0.73	.86
6. Anti-mattering	-.26**	.17*	.30**	.10	-.21**	—	.76**	.39**	2.21	0.84	.91
7. Depressive symptoms	-.18*	.14	.39**	.03	-.29**	.64**	—	.47**	1.02	0.65	.90
8. Suicide Ideation	-.11	.07	.23**	.10	-.29**	.36**	.49**	—	0.05	0.14	.90
Mean ( <i>Item Level</i> )	—	4.61	3.80	3.20	3.75	3.05	1.05	.06	—	—	—
Standard deviation	—	1.04	1.09	1.16	0.58	0.68	0.56	0.17	—	—	—
Alpha reliabilities ( $\alpha$ )	—	.84	.81	.84	.81	.84	.84	.88	—	—	—

*Note.* Bivariate correlations, means, standard deviations, and alpha reliabilities are presented below the diagonal for the university sample and above the diagonal for the community sample.

University sample ( $N = 161$ ), Community sample ( $N = 200$ )

\* $p < .05$ , \*\* $p < .01$ , two-tailed.

.01],  $SE = .05$ ) was non-significant. The total indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.02$  [95% CI  $-.05, .00$ ],  $SE = .01$ ) and anti-mattering ( $\beta = -.04$  [95% CI  $-.11, .00$ ],  $SE = .03$ ) was non-significant. The total indirect effect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = .04$  [95% CI  $.01, .09$ ],  $SE = .02$ ) and anti-mattering ( $\beta = .25$  [95% CI  $.15, .36$ ],  $SE = .05$ ) was significant. For suicide ideation, the total indirect effect of socially prescribed perfectionism via mattering ( $\beta = .03$  [95% CI  $.01, .08$ ],  $SE = .02$ ) and anti-mattering ( $\beta = .13$  [95% CI  $.06, .22$ ],  $SE = .04$ ) was also significant (see Figure 3.2).

#### 4.3.2.3 *The inclusion of age as a covariate*

The same model was tested in both the university and community sample with the inclusion of age as a covariate, given that age was correlated with all variables (with the exception of other-oriented perfectionism) in the community sample, and thus was considered a potential confound. As expected, in the university sample, all paths were virtually identical when including age as a covariate. Similar findings emerged in the community sample, with the exception that the total indirect effect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .02$  [95% CI  $-.00, .05$ ],  $SE = .01$ ) became non-significant.

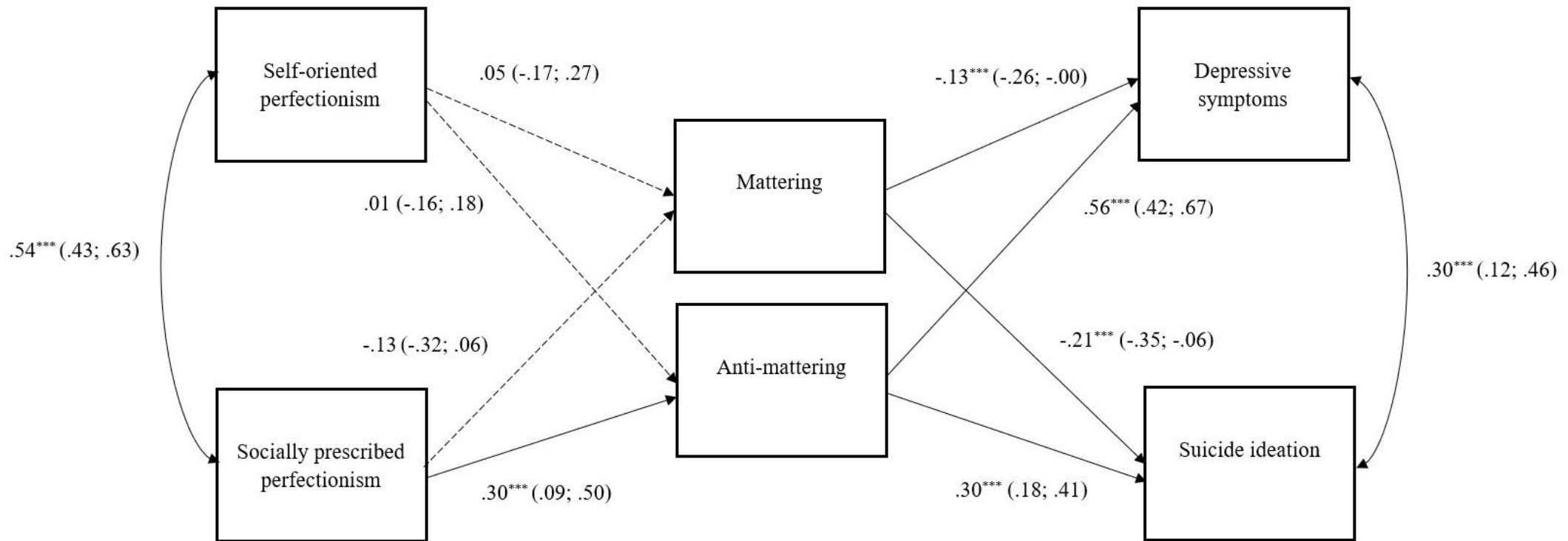


Figure 4.1. Path diagram depicting associations among variables for the **university sample**. Correlations among mediators, the path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation was omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.11$  [95% CI -.27, .05]. The path from self-oriented perfectionism to suicide ideation was  $\beta = -.06$  [95% CI -.26, .13]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .26$  [95% CI .13, .39]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = .17$  [95% CI .02, .33]. The correlation among mattering and anti-mattering was  $r = -.20$ . All estimates are standardized.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.

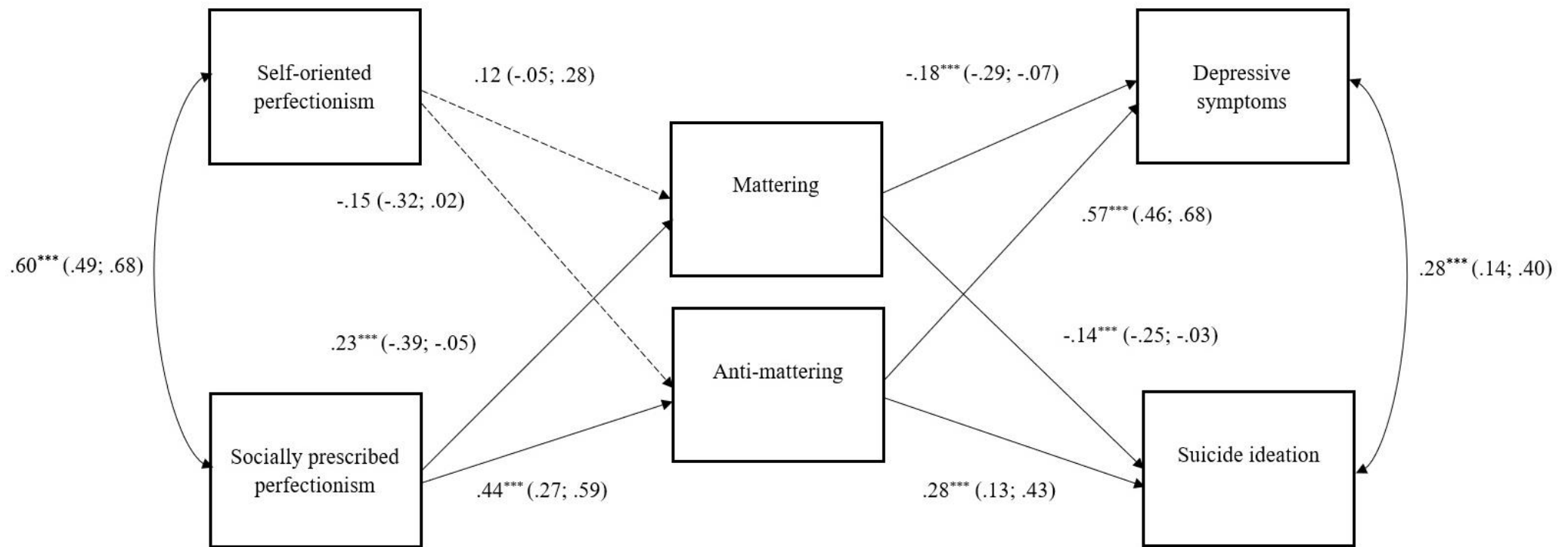


Figure 4.2. Path diagram depicting associations among variables for the **community sample**. Correlations among mediators, the path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation was omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.05$  [95% CI -.18, .06]. The path from self-oriented perfectionism to suicide ideation was  $\beta = -.15$  [95% CI -.31, .03]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .21$  [95% CI .08, .33]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = .08$  [95% CI -.08, .22]. The correlation among mattering and anti-mattering was  $r = .28$ . All estimates are standardized.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed.

#### 4.4 Discussion

Study one sought to extend research on the PSDM in three ways. First, though suicide ideation is a key part of the PSDM, most studies have examined depressive symptoms as an outcome variable in the PSDM and have overlooked suicide ideation. Study one, thus, includes suicide ideation within the PSDM, alongside depressive symptoms. Second, research examining the mattering-suicide ideation relationship is not very extensive, with no research examining this relationship in university students. This study is the first to examine the mattering-suicide ideation relationship in a university sample (in addition to a community sample). Third, though theory and research suggest anti-mattering may be an important marker of social disconnection in the PSDM, no studies have examined anti-mattering in the PSDM. Study one, thus, examines anti-mattering alongside mattering within the PSDM.

It was hypothesized that socially prescribed perfectionism would be indirectly associated with depressive symptoms and suicide ideation via mattering and anti-mattering. Conversely, the indirect effect of self-oriented perfectionism on depressive symptoms and suicide ideation via mattering and anti-mattering was exploratory. As hypothesized, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering. By contrast, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via mattering in the community sample (but not the university sample). Conversely, self-oriented perfectionism did not indirectly predict depressive symptoms and suicide ideation via mattering and anti-mattering.

##### *4.4.1 The mediated effects of perfectionism on depressive symptoms and suicide ideation through mattering and anti-mattering.*

The finding that socially prescribed perfectionism indirectly predicted depressive symptoms via mattering (in the community sample only) and anti-mattering (in both the university and community sample) is in line with theory on the PSDM (Hewitt et al., 2006;

Hewitt et al., 2017). The PSDM is based on the premise that socially prescribed perfectionism leads to subjective social disconnection (i.e., a sense of isolation, alienation and a lack of belonging) via interpersonal sensitivity which in turn leads to psychopathology (Hewitt et al., 2006). The current findings, then, are in keeping with the PSDM and suggest that socially prescribed perfectionism generates depressive symptoms through feeling insignificant, unimportant, and marginalised by others. Because people higher in socially prescribed perfectionism are interpersonally sensitive and have an intense need for approval and validation (Hewitt et al., 1996b; Hewitt et al., 2006), perceptions that they cannot please others and do not matter to others is likely to be particularly harmful to their wellbeing.

This finding aligns with a large body of research which suggests that the socially prescribed perfectionism-depressive symptoms is an integral part of the PSDM (Smith et al., 2017b; Smith et al., 2018b; Rnic et al., 2021). More specifically, this finding is largely in keeping with previous cross-sectional research which has found socially prescribed perfectionism to indirectly predict depressive symptoms via low feelings of mattering in both university student and community samples (Cha, 2016; Flett et al., 2012). Findings suggest that perceptions of elusive expectations and criticism from others may augment a sense of insignificance and unimportance, which in turn, gives rise to feelings which are depressogenic (Flett, 2018b). While findings add to the current body of research, future work examining this pathway in a robust longitudinal design is warranted.

Study one included suicide ideation as an outcome variable within the PSDM. The finding that socially prescribed perfectionism indirectly predicted suicide ideation via mattering (in the community sample only) and anti-mattering in both the university and community sample aligns with theory (Hewitt et al., 2006) suggesting that suicidality plays a key role in the PSDM and research examining suicidal behaviour (e.g., D'Agata & Holden, 2018; Robinson et al., 2022; Roxborough et al., 2012). This finding suggests that those who

perceive others to impose excessive expectations and demands may adopt a bleak outlook on life when they perceive that they are not valued and appreciated by others or are only valued when expectations are met. Though the present study is one of few to examine suicide ideation as an outcome variable within the PSDM, findings imply that suicidality is important within the PSDM and should be a focus of future tests of the PSDM. Future research should substantiate findings by replicating these relationships with suicide ideation longitudinally in the PSDM.

Study one extended previous tests of the PSDM by including anti-mattering, alongside mattering as markers of social disconnection. While anti-mattering had not been previously examined in the PSDM, this finding is in line with research which has found low feelings of mattering to mediate relationships between socially prescribed perfectionism and depressive symptoms (Cha, 2016; Flett et al., 2012). Based on the findings of the present study, anti-mattering emerges as an important marker of social disconnection. Future research should include anti-mattering as a key marker of social disconnection in the PSDM, in addition to other research evaluating the risk of depressive symptoms and suicidality. Nevertheless, given the lack of research on anti-mattering so far, longitudinal tests examining anti-mattering in the PSDM and more generally is warranted.

Following the inclusion of anti-mattering, mattering did not emerge as significant in the model in the university sample. The lack of findings with mattering in the university sample contrast against previous research which has found mattering to be a mediator in the PSDM (Flett et al., 2012). This study is the first to include anti-mattering and mattering concurrently in the model and thus, it is likely that mattering was subsumed by anti-mattering which captures more insidious and harmful feelings of insignificance, marginalization, and a sense of unfairness due to feeling unimportant and not valued by others (Flett et al., 2018b). Accordingly, anti-mattering appears to be a particularly salient marker of social

disconnection and may be a better proxy, compared with mattering in future tests of the PSDM.

Self-oriented perfectionism was included in study one in response to recent expanded models of the PSDM which suggest self-oriented perfectionism plays a role in the PSDM (e.g., Hewitt et al., 2017; Sherry et al., 2016). However, self-oriented perfectionism did not indirectly predict depressive symptoms or suicide ideation via mattering and anti-mattering. This finding aligns with several studies which have found no association between self-oriented perfectionism and markers of social disconnection (e.g., mattering, interpersonal discrepancies, social hopelessness; Flett et al., 2012; Smith et al., 2018b), suggesting that self-oriented perfectionism does not play a prominent role in the PSDM. In addition, Stoeber et al. (2017) posits that self-oriented perfectionism is not related to social disconnection, and instead exhibits unique relationships with social connection and low hostility. Moreover, the lack of findings in this study are consistent with considerable research showing that interpersonal mechanisms are much more relevant to socially prescribed perfectionism (e.g., Enns & Cox, 2005; Hewitt & Flett, 1993; Hewitt et al., 1996).

In contrast, theoretical explanations suggest self-oriented perfectionism plays an important role in the PSDM (Hewitt et al., 2017; Sherry et al., 2016). Expanded models of the PSDM suggest that self-oriented perfectionism should be included in the PSDM because this dimension involves rigid striving for agentic goals, rather than communal goals (Blatt, 1995; Sherry et al., 2016). Self-oriented perfectionism typically results in an imbalanced life, where opportunities to form meaningful relationships are often overlooked or ignored (Sherry et al., 2016). In this regard, it would be expected that self-oriented perfectionism impedes upon the ability to form meaningful connections and elicit a sense of mattering from others (Flett, 2018b). Likewise, theory suggests self-oriented perfectionism is rooted in interpersonal needs (Hewitt et al., 2017). In keeping with this suggestion, research has found self-oriented



perfectionism to be related other markers of social disconnection (e.g., lack of perceived quality friendships, loneliness, social self-esteem; Hewitt et al., 2020; Rnic et al., 2021; Smith et al., 2017b).

The lack of finding with self-oriented perfectionism in the present study also contrasts with a recent meta-analytic review by Smith et al. (2020c). Smith et al. (2020c) found perfectionistic strivings (a composite which includes self-oriented perfectionism) to indirectly predict depressive symptoms via social disconnection, suggesting that perfectionistic strivings is important in the PSDM. However, this study also found that age moderated the relationship between perfectionistic strivings and social disconnection, suggesting that people higher in perfectionistic strivings become increasingly socially disconnected over time. In the present study, then, the relatively low mean age of the samples may have accounted for the lack of relationship with perfectionistic strivings.

The current findings are both in line and contrast with the study by Rnic et al. (2021). Rnic et al. (2021), for instance, found self-oriented perfectionism to indirectly predict depressive symptoms via reassurance of worth and loneliness, but not other markers of social disconnection. Rnic et al. (2021) therefore evidenced the specificity of self-oriented perfectionism in the PSDM and suggests that self-oriented perfectionism may be related to specific markers of social disconnection only. The findings of Rnic et al.'s study, then, highlight that it may not be a question of whether self-oriented perfectionism should or should not be included in the PSDM, but rather which specific markers of social disconnection are relevant to self-oriented perfectionism. In the present study, findings suggest that self-oriented perfectionism is not related to feelings of not mattering. Establishing the role of self-oriented perfectionism and the key markers of social disconnection this dimension is associated with is a priority for future research.

#### **4.5 Concluding remarks**

Study one makes an important contribution to understanding relationships between perfectionism, depressive symptoms, and suicide ideation. Study one examined the mediating role of mattering and anti-mattering in relationships between perfectionism, depressive symptoms, and suicide ideation in a university sample and a community sample. Findings indicate that people higher in socially prescribed perfectionism experience depressive symptoms and suicide ideation because they feel insignificant, unimportant, and marginalised. Findings provide support for the inclusion of anti-mattering as a marker of social disconnection and a mediator within the PSDM and suicide ideation as an outcome variable in the PSDM.

## Chapter 5

Study two: A longitudinal test of the Perfectionism Social Disconnection Model.

*“I am terrified by this dark thing that sleeps in me”* – Sylvia Plath (p. 155; Plath & Hughes, 1981).

### 5.1 Introduction

Study one advanced research in three ways. First, while research on the PSDM has examined various markers of social disconnection, no research has examined feelings of not mattering (i.e., anti-mattering) as a mediator and marker of social disconnection. Study one, then, was the first to include anti-mattering alongside mattering as a mediating variable. Second, research examining suicide ideation in the PSDM is scarce, with no research examining this relationship in a non-clinical sample. Study one addressed this limitation and was the first to examine suicide ideation, alongside depressive symptoms, in non-clinical samples of university students and community adults. Third, research examining mattering and suicidality is not extensive, with no research examining this relationship in a university sample. Likewise, research is yet to examine anti-mattering in relation to suicidality. Study one, then, was the first to test the mattering-suicidality relationship in a university sample, and the first to examine the relationship between anti-mattering and suicidality more generally.

Findings of study one revealed that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering across student and community samples. In addition, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via mattering in a community sample. However, while study one extended research by including suicide ideation as an outcome in the PSDM and including anti-mattering as a mediator in a test of the PSDM, this study was limited by its

cross-sectional design. Study two, then, builds upon these limitations in two ways. Study two, for instance, conducts a robust test of these relationships and conducts the first longitudinal test of feelings of mattering and not mattering and suicidality.

### *5.1.1 Mattering, depression, and suicide ideation*

Research examining the relationship between mattering and depression has almost exclusively relied on cross-sectional research (e.g., Edwards & Neal, 2017; Flett & Nepon, 2020; Flett et al., 2016d; see Chapter four for a detailed overview). To date, only three studies have examined this relationship longitudinally (e.g., Krygsman et al., 2022; Marshall & Tilton-Weaver, 2019; Taylor & Turner, 2001). These studies have examined the mattering-depressive symptoms relationship in various samples including a community sample, an adolescent sample, and a young adult sample. In the first study, Taylor and Turner (2001) examined the relationship between mattering (measured using the General Mattering Scale; Marcus & Rosenberg, 1987) and depressive symptomology cross-sectionally and over time in a large urban community sample. Mattering was found to be significantly negatively associated with depressive symptomology, after controlling for prior depressive symptoms. In addition, mattering was found to predict depressive symptomology 12 months later, beyond social support, sense of mastery and lack of assertiveness.

In the second study, Marshall and Tilton-Weaver (2019) examined the mattering-depressive symptom relationship in adolescents in a longitudinal design. Specifically, Marshall and Tilton-Weaver (2019) examined reciprocal relations between examining mattering (measured using the Mattering to Others Questionnaire, Marshall, 2001) to family and friends and psychosocial wellbeing (depressive symptoms and problem behaviours) in adolescents at baseline and again 12 months later. Findings revealed that perceptions of mattering to friends, but not family, predicted depressive symptoms 12 months later. However, depressive symptoms did not predict lower perceptions of mattering to friends or

family. In summary, research examining the mattering-depressive symptoms relationship over time is relatively scarce.

In the third and most recent study, Krygsman et al. (2022) examined relationships between mattering, anti-mattering, and depressive symptoms over time in young adults. More specifically, Krygsman et al. (2022) examined the dynamic interplay of mattering, anti-mattering, and depressive symptoms across four years of development in young adulthood. Depressive symptoms were found to predict feelings of not mattering (i.e., anti-mattering) and anti-mattering was found to also predict depressive symptoms over four years, finding support for a reciprocal relations model. In addition, depressive symptoms were found to negatively predict feelings of mattering over four years, finding support for a complication model. This study highlights the need to consider the directionality of relationships between feelings of mattering and not mattering and depressive symptoms.

While there has been some examination of mattering and depressive symptoms over time, all studies examining the mattering-suicide ideation relationship have done so cross-sectionally (e.g., Joiner et al., 2009; Milner et al., 2016; Olcon et al., 2017; see Chapter four for a detailed overview). Elliott et al. (2005), for example, examined self-esteem and depression as mediating variables in the mattering-suicide ideation relationship in a sample of adolescents. The authors found self-esteem and depression to fully mediate the mattering-suicide ideation relationship. Likewise, Joiner et al. (2009) found low levels of mattering to be positively related to suicide ideation in young adults experiencing symptoms of sadness and anhedonia. Joiner et al. (2009) also found low family support to interact with low mattering to predict suicide ideation beyond six-month depression and lifetime depression. In summary, research suggests that mattering may act as a protective factor against suicidality (e.g., Elliott et al., 2005). Despite this, no research has examined whether mattering emerges

as a protective factor for suicidality over time. As such, future research examining the mattering-suicidality relationship longitudinally is clearly warranted.

### *5.1.2 Advancing research on the PSDM*

While acknowledged in Chapter three, it is worth reiterating that research examining depressive symptoms within the PSDM has received substantial empirical support (e.g., Hewitt et al., 2020; Rnic et al., 2021; see Smith et al., 2020c; see Chapter three for a review). Research examining depressive symptoms as an outcome variable in the PSDM, for instance, has examined a range of markers of social disconnection (e.g., mattering, social self-esteem, social hopelessness; Flett et al., 2012; Smith et al., 2017b; Smith et al., 2018b) as mediators. In particular, there is an increasing number of studies in the PSDM which have examined the perfectionism-depressive symptoms relationship longitudinally (e.g., Hewitt et al., 2020; Rnic et al., 2021; Smith et al., 2018b). Collectively, these studies indicate that socially prescribed perfectionism generates depressive symptoms over time via various markers of social disconnection.

Fewer studies have investigated the perfectionism-suicidality relationship through the lens of the PSDM (e.g., Roxborough et al., 2012; Robinson et al., 2022). For instance, only two studies to date exist examining suicide ideation within the PSDM. In a cross-sectional study, Roxborough et al. (2012) examined the mediating role of social hopelessness and bullying in relationships between perfectionism (i.e., socially prescribed perfectionism and perfectionistic self-presentation) and suicidal behaviour in a clinical sample of children and adolescents. The authors found both socially prescribed perfectionism and perfectionistic self-presentation to indirectly predict suicidal behaviour through social hopelessness and perfectionistic self-presentation to indirectly predict suicidal behaviour via bullying.

More recently, Robinson et al. (2022) examined the mediating role of general and interpersonal hopelessness in relationships between perfectionism (i.e., self-oriented

perfectionism, socially prescribed perfectionism, and perfectionistic self-presentation) and suicide ideation cross-sectionally in a sample of US adults with a history of suicide ideation. The authors hypothesized that interpersonal hopelessness, but not general hopelessness would mediate these relationships. As expected, socially prescribed perfectionism and perfectionistic self-presentation was found to indirectly predict suicide ideation through interpersonal hopelessness, but not general hopelessness. In addition, no indirect effects for self-oriented perfectionism. Robinson et al. (2022), then, provides support for the inclusion of suicide ideation and highlights the importance of examining interpersonal mediators in this relationship.

### *5.1.3 Advancing methodological limitations on the PSDM.*

The main purpose of study two was to methodologically advance research on the PSDM. To date, most research on the PSDM has tested this model cross-sectionally (e.g., Flett et al., 2014; Rnic et al., 2021; Robinson et al., 2022). In addition, both study one and prior studies examining mattering in the PSDM have utilised cross-sectional designs (Cha, 2016; Flett et al., 2012). However, cross-sectional designs are limited as they prevent causal inferences and do not address directionality or temporal precedence (Maxwell & Cole, 2007). Cross-sectional designs also have the potential to produce biased and misleading estimates of mediation (Maxwell & Cole, 2007). In this regard, cross-sectional analyses may imply the presence of an indirect effect, when a true longitudinal indirect effect may be zero. As such, indirect effects found in cross-sectional analyses often do not emerge in longitudinal analyses (Maxwell et al., 2011). As such, longitudinal tests of the PSDM are required.

Some research of this kind exists. However, most longitudinal research on the PSDM employ only two-waves of data (e.g., Rnic et al., 2021; Smith et al., 2017b; Smith et al., 2018b). Two-wave longitudinal designs, however, capture only a narrow slice of change and involve temporal confounding when testing the PSDM given that either the predictor and

mediator variable or the mediator and outcome variable are examined contemporaneously (Cole & Maxwell, 2003). In two-wave longitudinal designs, then, part of the model would be cross-sectional. A two-wave longitudinal design would therefore produce biased estimates of either the predictor and mediator or the mediator and outcome variable, depending on whether the mediator variable is measured alongside the predictor or outcome variable (Cole & Maxwell, 2003). Instead, time must elapse between the predictor, mediator, and outcome variable to provide a proper test of mediation, requiring a three-wave longitudinal design. Three-wave longitudinal designs examining predictor, mediator, and outcome variables better capture changes over time and provide stronger causal inferences (Cole & Maxwell, 2003). Future research examining the PSDM, then, should utilise three-wave longitudinal designs.

Some research on the PSDM or research on perfectionism and social disconnection generally has been examined over long-term timeframes (spanning several months or years; e.g., Rnic et al., 2021). However, the majority of research in the PSDM has been examined using shorter timeframes (several weeks; e.g., Sherry et al., 2013a; Mackinnon et al., 2017; Smith et al., 2017b). Longitudinal long-term designs are considered ill-suited to studying more dynamic changes (Graham et al., 2010). Instead, short-term longitudinal designs with several waves are better suited in assessing short-term patterns in feelings of mattering and anti-mattering and mental health outcomes. In addition, short-term multi-wave longitudinal designs may increase reliability through assessing events closer to their occurrence, decreasing recall bias (Bolger et al., 2003). Drawing on this, study two adopts a short-term, three-wave longitudinal design with measurement intervals of three weeks.

#### *5.1.4 The present study*

Study two extends existing research on the PSDM in five respects. First, no longitudinal studies on the PSDM have examined mattering or its important conceptual opposite, anti-mattering. As such, it is currently unclear whether mattering and anti-mattering



remain as important mediators when examined longitudinally. Second, all longitudinal studies of the PSDM focus on depressive symptoms and have overlooked suicide ideation (e.g., Mackinnon et al., 2012; Rnic et al., 2021; Smith et al., 2017b). It is important, then, to determine whether the PSDM does extend to suicide ideation when examined in a robust longitudinal design. Third, although research demonstrates the importance of feelings of mattering as a protective factor for suicidality (e.g., Elliot et al., 2005; Holden et al., 2018; Joiner et al., 2009), no research has examined the mattering-suicide ideation relationship longitudinally. Here, it is important to determine whether feelings of mattering emerge as a risk factor for suicidality.

Fourth, few longitudinal studies exist examining the mattering-depressive symptoms relationship (e.g., Krygsman et al., 2022; Marshall & Tilton-Weaver, 2019; Taylor & Turner, 2001). In particular, none of these studies have examined this relationship longitudinally in university students or utilising shorter time spans (e.g., over weeks). Thus, it is important to determine whether the mattering-depressive symptoms replicates in a university sample when examined over time. In addition, shorter time lags are required as long-term longitudinal designs may miss more dynamic changes in variables (see Graham et al., 2010). Fifth, longitudinal tests of the PSDM have typically relied on only two-waves of data (e.g., Smith et al., 2018b). However, longitudinal studies of three or more waves are required to provide a proper test of mediation (Cole & Maxwell, 2003). Study two, thus, addresses all of these limitations by examining suicide ideation as an outcome in the PSDM alongside depressive symptoms and anti-mattering as a mediator alongside mattering in a robust three-wave longitudinal design, controlling for baseline depressive symptoms and suicide ideation.

#### *5.1.5 The purpose of study two*

The purpose of study two was to methodologically advance research on the PSDM. Study two, then, builds upon the findings of study one by conducting a robust three-wave

longitudinal design to test the PSDM. It was hypothesized that socially prescribed perfectionism (Wave 1) will confer vulnerability to depressive symptoms and suicide ideation (Wave 3) via anti-mattering (Wave 2), controlling for baseline depressive symptoms and suicide ideation. Baseline levels of depressive symptoms and suicide ideation were controlled for given that past depressive symptoms is a strong predictor of future depressive symptoms (e.g., Judd et al., 2002) and past suicide ideation is a strong predictor of future suicide ideation (e.g., Joiner, 2005). Moreover, based on the lack of findings in study one, it was hypothesized that self-oriented perfectionism would not confer vulnerability to depressive symptoms and suicidality via mattering or anti-mattering. In addition, based on equivocal findings of study one, the inclusion of mattering in the PSDM was treated as exploratory.

## **5.2 Method**

### *5.2.1 Participants*

Two samples of participants were recruited. The first sample consisted of 181 undergraduate students (48.10% female;  $M_{\text{age}} = 20.34$  years,  $SD = 3.25$ ) at York St John University in the United Kingdom. Participants were predominantly White British (70.2%) and were in their second (60.2%) or third year (39.8%) of university. The second sample consisted of 200 community adults (59.5 % female; 3 undisclosed;  $M_{\text{age}} = 40.17$  years,  $SD = 12.68$ ) recruited from Prolific Academic, an online participant recruitment platform for academic researchers. Participants were from the United Kingdom and were predominantly White British (82.5%).

### *5.2.2 Procedure*

Preceding data collection, the study was approved by York St John university's cross-school research ethics committee (see Appendix A.2; Ethics reference code: Etherson\_26/04/2019). For the university sample, module leaders were contacted to gain access to undergraduate students. University students provided informed consent prior to

participating (see Appendix B.4) and were made aware that participation in the study was completely voluntary. During data collection, the principal investigator provided instructions and responded to questions. University students completed a pen-and-paper questionnaire containing the study variables on three occasions separated by approximately three weeks. Questionnaires were distributed within lectures or seminars and took approximately 15 minutes to complete. Participants were asked to create their own unique ID based on their date of birth in the format DD/MM and the last three digits of their postcode. This allowed participants data to be matched and tracked over time, whilst ensuring anonymity. University students were provided with a debrief sheet following completion of the study (see Appendix B.5).

The community sample were recruited from Prolific Academic. Custom screening was employed on Prolific Academic to ensure that participants met eligibility criteria. Only participants from the United Kingdom with a minimum of 100 previous submissions and a 95% or above approval rate on Prolific Academic were eligible to participate. The study was published to eligible participants on a first-come first-served basis. Participants gave informed consent and completed an online questionnaire on Qualtrics, an academic survey software via Prolific Academic at three timepoints separated by three weeks. Participants who completed timepoint one were invited to participate in the subsequent timepoints three and six weeks later. Participants recruited from Prolific Academic were able to contact myself as the researcher on Prolific if they had any questions and could opt out at any time prior to completion of the study. As a reward for their time, participants were paid £0.85 to complete each questionnaire.

A three-wave longitudinal study with a time lag of three weeks between waves was selected for this study. This design was chosen for two reasons. First, this methodological design was most feasible. Given that the undergraduate sample completed the study

questionnaires within a lecture or seminar setting, the length of three weeks between waves was required in order to be completed effectively within a university semester (spanning twelve weeks) and to collect data in seminars which were most convenient for students (e.g., avoiding scheduled exams). Second, the design was based on similar methodological designs in prior longitudinal research which examined the relationship between perfectionism and depressive symptoms/ suicide ideation (e.g., Chang et al., 1998) and on longitudinal research of the PSDM and EMPDS (Sherry et al., 2013b; Sherry et al., 2014a; Smith et al., 2020a).

### *5.2.3 Measures*

For multidimensional perfectionism, mattering, anti-mattering, and depressive symptoms, measures were identical to study one (see Chapter four for a detailed overview of measures). Perfectionism was measured using the HF-MPS-SF (Hewitt et al., 2008; see Appendix C.2). Mattering was measured using the GMS (Rosenberg & McCullough, 1981; see Appendix C.3). Anti-mattering was measured using the AMS (described in Flett, 2018b; Flett et al., 2022b; see Appendix C.4). Depressive symptoms were measured using the CES-D-SF (Cole et al., 2004; see Appendix C.6).

#### *5.2.3.1 Suicide Ideation*

The BSS was used to measure suicide ideation in study one. However, because the BSS states that if participants score a rating of 0 on all of the first five items, they are not required to complete the following 14 items, it was possible that participants may have been greater inclined to rate zero on the first five items due to ease. For this reason, the Adult Suicide Ideation Questionnaire (ASIQ) was chosen to measure suicide ideation in the following studies of the thesis. The ASIQ consists of 25 items that assess the frequency of specific suicidal thoughts over the past month in adult populations (e.g., “I thought about killing myself, but I would not do it”, “I thought that people would be happier if I was not around”, and “I thought that life was not worth living”; Reynolds, 1991a, 1991b; see

Appendix C.8 for the measure). Participants rated suicidal behaviours or thoughts on a 7-point scale from 0 (*I have never had this thought*) to 6 (*Almost every day*). Items are summed to yield a total score indicative of specific suicidal behaviour or thoughts. Scores on the ASIQ range from 0 to 150. Higher scores on the ASIQ represent greater frequency and severity of suicidal thoughts (Reynolds, 1991a, 1991b).

Reynolds (1991a) found initial support for the psychometric properties of the scale in clinical and non-clinical samples. For instance, internal reliability was  $\alpha = .97$  and two-week test-retest reliability was  $r = .86$  in a college student sample (Reynolds, 1991a). In addition, Reynolds (1991) found the ASIQ to be significantly correlated with the Beck Depression Inventory, Beck Hopelessness Scale, Beck Anxiety Inventory, Rosenberg's Self-Esteem Scale, and history of prior suicide attempts (Reynolds, 1991a). Scores of the ASIQ were also found to positively correlate with prior suicide attempts (Reynolds, 1991a). In addition, Reynolds et al. (1990) reported a significant difference in suicide ideation on the ASIQ between adults experiencing major depression and nonpsychiatric controls. Likewise, participants who reported one or more suicide attempts in their lifetime scored significantly higher relative to participants with no history of suicide attempts.

Additional research also supports the validity and reliability of the ASIQ (e.g., Buitron et al., 2017; Chen et al., 2017; Osman et al., 1999). Research, for instance, found high internal reliabilities ( $\alpha$  range = .87 to .98; e.g., Buitron et al., 2017; Chang et al., 2004; Chen et al., 2017). In addition, research has found support for the construct validity of the ASIQ. Osman et al. (1999), for instance, found the ASIQ to positively correlate with anxiety, depression, anger, and low self-esteem. Likewise, Chang et al. (2004) found the ASIQ to be positively related to perceived stress and negative affect, and negatively related to positive affect and satisfaction with life. Later research by Buitron et al. (2017) found the ASIQ to positively correlate with perceived burdensomeness, thwarted belongingness, depression and

negatively correlate with mindfulness. In summary, the ASIQ has received burgeoning psychometric support.

#### *5.2.4 Dropout rates*

Demographics were reported in Wave 1. For the university sample, 181 participants (100%) completed Wave 1, 150 of 181 completed Wave 2 (82.9%) and 109 of 181 (60.2%) completed Wave 3. The average time lag between Time 1 and Time 2 was 22.96 days ( $SD = 3.36$ ) and between Time 2 and Time 3 was 23.08 days ( $SD = 4.91$ ). For the community sample, 200 participants (100%) completed Wave 1, 177 of 200 (88.5%) completed Wave 2, and 189 of 200 (94.5%) completed Wave 3. The average time lag between Time 1 and Time 2 was 21.51 days ( $SD = 1.39$ ) and between Time 2 and Time 3 was 21.02 days ( $SD = 0.56$ ).

#### *5.2.5 Data analytic strategy*

The preliminary analyses involved examining missing values, detecting multivariate outliers, and testing reliability of the measures. In the primary analyses, descriptive statistics (means and standard deviations) were calculated. Bivariate correlations were then examined to examine associations among measures. Effect sizes of correlations were based on Cohen's (1992) guidelines for small, medium, and large effects ( $r = .10, .30, .50$ ). Next, a series of independent samples  $t$ -tests were run to determine whether participants who completed all data points (completers) differed on the study variables at baseline from participants who dropped out of the study at Time 2 or Time 3 (non-completers). Independent samples  $t$ -tests were also conducted to compare study variables across the university and community sample.

To analyse the data, path analysis with full information maximum likelihood was conducted in Mplus version 8.0 (Muthén & Muthén, 1998-2017). The significance of indirect effects was determined using bias-corrected bootstrapping with 20,000 resamples (Efron & Tibshirani, 1993). Bias-corrected bootstrapping was utilised as a non-parametric alternative since indirect effects often have distributions skewed away from zero (Shrout & Bolger,

2002). If the 95% bias-corrected bootstrapped confidence interval for an indirect effect does not cross zero within its upper and lower 2.5% percentage of each distribution, it infers mediation.

### 5.2.6 Preliminary analysis

In the university sample, 0.11% to 0.35% of data was missing across waves. Little's MCAR test was non-significant, suggesting data was MCAR  $\chi^2(448) = 487.76, p = .095$ . In the community sample, 0.00% to 0.08% of data was missing across waves. Little's MCAR test was non-significant, inferring data was MCAR  $\chi^2(95) = 94.584, p = .493$ . Missing data was handled using full information maximum likelihood. One participant from the university sample and three participants from the community sample who exhibited a Mahalanobis distance above the critical value  $\chi^2(21) = 46.797, p < .001$  was excluded. This produced a final sample of 180 university students (47.78% female;  $M_{age} = 20.34$  years,  $SD = 3.26$ ) and 197 community adults (59.4% female; 3 undisclosed;  $M_{age} = 40.06$  years,  $SD = 12.75$ ).

In order to assess whether participants who completed all data points (completers) differed from participants who dropped out of the study at Time 2 or Time 3 (non-completers) on levels of perfectionism, mattering, anti-mattering, depressive symptoms, and suicide ideation at baseline, a series of independent samples *t*-tests were run. Results revealed no significant differences in study variables between completers and non-completers, aside from socially prescribed perfectionism at Time 1 in the university sample. Based on the data, the model is more generalizable to participants higher in socially prescribed perfectionism.

## 5.3 Results

### 5.3.1 Descriptive statistics

Means, standard deviations, Cronbach's alphas, and bivariate correlations are reported in Table 5.1. and are comparable to study one. Alpha reliabilities were high and ranged from  $\alpha = .81$  to  $.98$  in the university sample and  $\alpha = .84$  to  $.98$  in the community

sample. Three and six-week test-retest reliabilities were good ranging from  $r = .53$  to  $.87$  in the university sample and  $r = .75$  to  $.94$  in the community sample. Bivariate correlations with age are described in relation to the key variables of interest (i.e., Self-oriented perfectionism socially prescribed perfectionism, depressive symptoms and suicide ideation at Time 1, mattering and anti-mattering at Time 2, and depressive symptoms and suicide ideation at Time 3). In the university sample, age was uncorrelated with the key variables of interest. In the community sample, age displayed small-to-moderate negative correlations with self-oriented perfectionism, socially prescribed perfectionism, and suicide ideation at Time 1 and a moderate negative correlation with depressive symptoms at Time 1. In addition, age displayed a small-to-moderate positive correlation with mattering at Time 2, a small-to-moderate negative correlation with anti-mattering at Time 2 and a moderate negative correlation with both depressive symptoms and suicide ideation at Time 3.

In the university sample, self-oriented perfectionism at Time 1 displayed a non-significant relationship with mattering and anti-mattering at Time 2. In contrast, socially prescribed perfectionism at Time 1 displayed a small-to-moderate negative relationship with mattering and a moderate positive relationship with anti-mattering at Time 2. Mattering at Time 2 displayed a nonsignificant relationship with depressive symptoms and a moderate-to-large negative relationship with suicide ideation at Time 3. Whereas anti-mattering at Time 2 displayed a moderate to large positive relationship with depressive symptoms and suicide ideation at Time 3. Self-oriented perfectionism at Time 1 displayed a non-significant relationship with depressive symptoms and suicide ideation at Time 3. Likewise, socially prescribed perfectionism at Time 1 displayed a non-significant relationship with depressive symptoms and suicide ideation at Time 3 (see Table 5.1).

In the community sample, self-oriented perfectionism at Time 1 displayed nonsignificant relationships between mattering and anti-mattering at Time 2. Socially



prescribed perfectionism at Time 1 displayed a non-significant relationship with mattering and a moderate-to-large positive relationship with anti-mattering at Time 2. Mattering at Time 2 displayed a large negative relationship with depressive symptoms and a moderate-to-large negative relationship with suicide ideation at Time 3. By contrast, anti-mattering at Time 2 displayed a large positive relationship with depressive symptoms and suicide ideation at Time 3. Self-oriented perfectionism at Time 1 displayed non-significant relationships with depressive symptoms and suicide ideation at Time 3. By contrast, socially prescribed perfectionism at Time 1 displayed a small-to-moderate positive relationship with depressive symptoms and suicide ideation at Time 3 (see Table 5.1).

Independent samples *t*-tests were conducted to compare samples on the key variables of interest. Compared with the university sample, the community sample exhibited significantly higher levels of depressive symptoms ( $t(365.87) = -3.58, p < .001$ ) and suicide ideation at Time 1 ( $t(316.45) = -4.73, p < .001$ ), significantly lower levels of mattering at Time 2 ( $t(273.70) = 2.47, p < .05$ ), and significantly higher levels of suicide ideation at Time 3 ( $t(277.36) = -4.58, p < .001$ ).

### 5.3.2 Path Analysis

#### 5.3.2.1 University sample

After controlling for baseline levels of depressive symptoms and suicide ideation, the following results emerged. The total indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = .00$  [95% CI  $-.01, .04$ ], and  $SE = .01$ ), and anti-mattering ( $\beta = -.03$  [95% CI  $-.11, .02$ ],  $SE = .03$ ) and the total indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.01$  [95% CI  $-.07, .01$ ],  $SE = .02$ ), and anti-mattering ( $\beta = .00$  [95% CI  $-.02, .02$ ],  $SE = .01$ ) was non-significant. Likewise, the total indirect of socially prescribed perfectionism on depressive symptoms via mattering was non-significant ( $\beta = -.00$  [95% CI  $-.05, .01$ ],  $SE = .01$ ). Conversely, the total indirect effect of

Table 5.1 Bivariate correlations, means, standard deviations, and alpha reliabilities across the university sample and community sample.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	M	SD	$\alpha$	
<b>Time 1</b>																										
1. Age	—	-.16*	-.18*	.05	.22**	-.23**	-.33**	-.24**	-.13	-.22**	-.02	.18*	-.27*	-.35**	-.28**	-.07	-.19*	-.03	.23**	-.18*	-.31**	-.26**	—	—	—	
2. SOP	.04	—	.65**	.58**	.18**	-.00	-.04	-.03	<b>.81**</b>	.55**	.47*	.11	.05	.02	-.03	<b>.79**</b>	.57**	.49**	.20**	-.04	-.07	-.03	4.19	1.45	.93	
3. SPP	.09	.50**	—	.55**	.02	.27**	.26**	.20**	.59**	<b>.75**</b>	.53**	-.08	.35**	.29**	.18*	.51**	<b>.79**</b>	.49**	-.03	.25**	.21**	.19*	3.92	1.22	.84	
4. OOP	.07	.54**	.49**	—	.11	.01	-.06	.02	.56**	.45**	<b>.83**</b>	.07	.02	-.06	.01	.59**	.51**	<b>.84**</b>	.11	-.00	-.06	.03	3.74	1.22	.86	
5. MAT	.07	-.12	-.20**	-.08	—	-.53**	-.60**	-.49**	.08	-.07	-.03	<b>.79**</b>	-.46**	-.50**	-.50**	.18*	-.01	.02	<b>.78**</b>	-.47**	-.52**	-.48**	2.70	0.68	.86	
6. ANTI	.12	.15	.28**	.14	-.41**	—	.73**	.54**	.03	.24**	.06	-.47**	<b>.79**</b>	.58**	.47**	-.12	.20**	-.00	-.51**	<b>.73**</b>	.59**	.46**	2.23	0.82	.90	
7. DEP	.08	.12	.27**	.10	-.48**	.69**	—	.68**	-.02	.27**	.02	-.58**	.74**	<b>.86**</b>	.70**	.13	.25**	-.08	-.58**	.62**	<b>.80**</b>	.62**	1.08	0.62	.88	
8. SI	.03	.08	.19*	.12	-.37**	.51**	.60**	—	-.10	.14	.01	-.46**	.58**	.67**	<b>.90**</b>	-.10	.18*	.01	-.45**	.48**	.62**	<b>.89**</b>	0.65	0.91	.98	
<b>Time 2</b>																										
9. SOP	.15	<b>.65**</b>	.34**	.44**	-.17	.10	.22*	.13	—	.70**	.60**	.10	.07	.00	-.04	<b>.83**</b>	.62**	.51**	.12	.00	-.08	-.06	4.09	1.47	.94	
10. SPP	.19*	.44**	<b>.67**</b>	.42**	-.32**	.26**	.34**	.26**	.64**	—	.60**	-.04	.31**	.31**	.18*	.60**	<b>.83**</b>	.47**	-.04	.23**	.25**	.15*	3.86	1.24	.86	
11. OOP	.05	.40**	.31**	<b>.67**</b>	.21*	.15	.20*	.24*	.60**	.67**	—	.02	.09	.03	.02	.58**	.58**	<b>.85**</b>	-.03	.07	.03	.03	3.83	1.18	.84	
12. MAT	-.02	-.03	-.20*	-.09	<b>.84**</b>	-.39**	-.46**	-.32**	-.11	-.31**	-.20*	—	-.51**	-.54**	-.44**	.11	-.09	-.06	<b>.81**</b>	-.48**	-.52**	-.45**	2.73	0.70	.87	
13. ANTI	.01	.10	.32**	.18	-.38**	<b>.65**</b>	.58**	.46**	.14	.43**	.26**	-.44**	—	.69**	.54**	-.02	.28**	.04	-.48**	<b>.76**</b>	.65**	.51**	2.17	0.80	.90	
14. DEP	.21*	.15	.29**	.14	-.39**	.63**	<b>.67**</b>	.45**	.20*	.40**	.22*	-.44**	.74**	—	.67**	-.04	.30**	-.01	-.54**	.57**	<b>.84**</b>	.63**	1.04	0.62	.89	
15. SI	-.00	.10	.11	-.08	-.43**	.53**	.62**	<b>.87**</b>	.16	.24*	.20*	-.34**	.47**	.53**	—	-.06	.18*	.00	-.44**	.48**	.67**	<b>.94**</b>	0.64	1.00	.98	
<b>Time 3</b>																										
16. SOP	.19*	<b>.67**</b>	.50**	.60**	-.06	.20*	.10	.08	<b>.74**</b>	.55**	.54**	-.05	.18	.14	.50	—	.64**	.62**	.22**	-.12	-.13	-.05	4.10	1.47	.95	
17. SPP	.12	.42**	<b>.64**</b>	.46**	-.06	.23*	.15	.07	.45**	<b>.72**</b>	.49**	-.17	.29**	.18	.08	.67**	—	.59**	.01	.16*	.21**	.19*	3.81	1.25	.85	
18. OOP	.10	.33**	.27**	<b>.56**</b>	.00	.04	-.00	.10	.42**	.36**	<b>.67**</b>	-.14	.04	-.02	.08	.54**	.65**	—	.04	.02	-.06	.04	3.85	1.30	.87	
19. MAT	-.04	.05	-.04	-.08	<b>.57**</b>	-.22*	-.28**	-.11	-.06	-.13	-.15	<b>.60**</b>	-.28*	-.22*	-.31**	-.05	-.07	.01	—	-.49**	-.53**	-.45**	2.69	0.71	.88	
20. ANTI	.23*	-.00	.19	-.01	-.35**	<b>.64**</b>	.62**	.47**	.11	.38**	.12	-.36**	<b>.73**</b>	.62**	.49**	.07	.27**	.05	-.23*	—	.69**	.49**	2.15	0.79	.90	
21. DEP	.10	-.00	.06	-.10	-.20*	.36**	<b>.52**</b>	.41**	.10	.26*	.15	-.14	.49**	<b>.53**</b>	.46**	.07	.19	.09	.00	.57**	—	.64**	1.03	0.60	.88	
22. SI	.09	-.05	-.09	-.11	-.35**	.36**	.53**	<b>.73**</b>	.08	.15	.08	-.46**	.41**	.50**	<b>.87**</b>	-.06	-.01	.03	-.22*	.54**	.44**	—	0.61	0.89	.98	
Mean (Item level)	—	4.37	3.75	3.51	2.95	1.89	0.88	0.28	4.36	3.91	3.67	2.93	2.03	0.96	0.30	4.38	3.99	3.73	2.90	1.89	0.94	0.26	—	—	—	
SD	—	1.20	1.20	1.20	0.56	0.63	0.50	0.52	1.27	1.29	1.31	0.54	0.80	0.52	0.51	1.33	1.22	1.28	0.65	0.69	0.51	0.39	—	—	—	
$\alpha$	—	.89	.83	.82	.82	.81	.80	.97	.93	.87	.87	.82	.91	.82	.98	.94	.85	.87	.89	.90	.72	.96	—	—	—	

Note. SOP = Self-oriented perfectionism; SPP = Socially prescribed perfectionism; OOP = Other-oriented perfectionism; MAT = Mattering; ANTI = Anti-mattering; DEP = Depressive symptoms; SI = Suicide ideation; Test-retest correlations are in bold. The university sample is presented below the diagonal and the community sample is presented above the diagonal. Correlations are based on pairwise deletion. \*p < .05; \*\*p < .01, two-tailed.

socially prescribed perfectionism on depressive symptoms via anti-mattering was significant ( $\beta = .07$  [95% CI .01, .15],  $SE = .04$ ). Furthermore, the total indirect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .02$  [95% CI -.01, .08],  $SE = .02$ ) and anti-mattering ( $\beta = .00$  [95% CI -.03, .03],  $SE = .02$ ) was non-significant (see Figure 5.1).

#### 5.3.2.2 *Community sample*

The total indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.00$  [95% CI -.03, .01],  $SE = .01$ ), and anti-mattering ( $\beta = -.00$  [95% CI -.03, .01],  $SE = .01$ ) was non-significant. Likewise, the total indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.01$  [95% CI -.03, .01],  $SE = .01$ ), and anti-mattering ( $\beta = .00$  [95% CI -.00, .02],  $SE = .00$ ) was also non-significant. The total indirect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = -.00$  [95% CI -.03, .01],  $SE = .01$ ) and anti-mattering ( $\beta = .01$  [95% CI -.01, .06],  $SE = .02$ ) was non-significant. Similarly, the total indirect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = -.00$  [95% CI -.03, .01],  $SE = .01$ ) and anti-mattering ( $\beta = -.00$  [95% CI -.03, .01],  $SE = .01$ ) was also non-significant (see Figure 5.2).

#### 5.3.2.3 *The inclusion of age as a covariate*

Because age was significantly correlated with all key variables of interest in the community sample, the same model was tested in both the university and community sample with the inclusion of age as a covariate. Again as expected, in the university sample, all paths were virtually identical to the previous model when including age as a covariate. The same was found in the community sample, where no findings significantly differed to the previous model. However, no significant findings had emerged in the initial model with the community sample, before being reexamined with age included as a covariate.

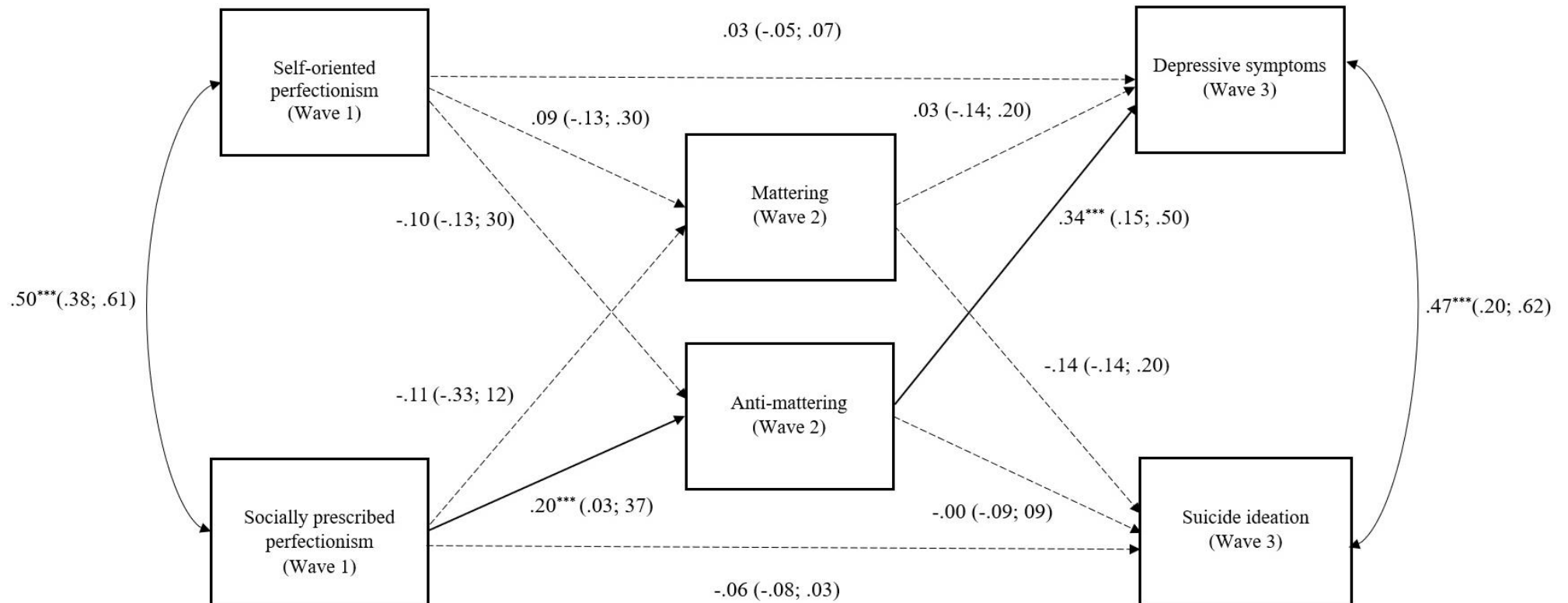


Figure 5.1. Path diagram depicting associations among variables for the **university sample**. Correlations among mediators, the path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) and mattering (Wave 2) and anti-mattering (Wave 2) was omitted for clarity. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = -.04$  [95% CI -.16, .08], from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = -.11$  [95% CI -.28, .08], from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .47$  [95% CI .29, .65], and from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .82$  [95% CI .63, .95]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .61$ , among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .13$ , among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .28$ , among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .11$ , among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .19$ , and among mattering (Wave 2) and anti-mattering (Wave 2) was  $r = -.25$ . All estimates are standardized. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.

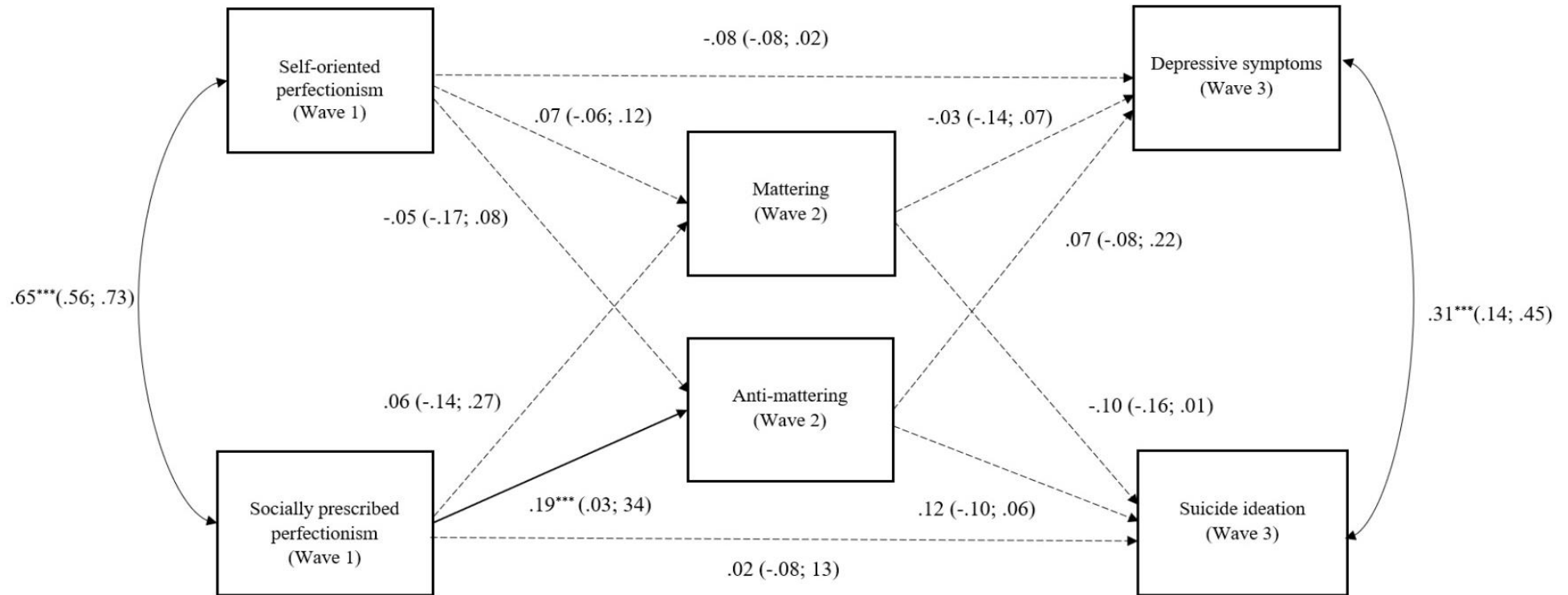


Figure 5.2. Path diagram depicting associations among variables for the **community sample**. Correlations among mediators, the path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) and mattering (Wave 2) and anti-mattering (Wave 2) was omitted from the figure for clarity. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = -.02$  [95% CI  $-.12, .08$ ]. The path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .05$  [95% CI  $-.09, .18$ ]. The path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .71$  [95% CI  $.58, .83$ ]. The path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .86$  [95% CI  $.75, .94$ ]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .69$ , among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = -.03$ , among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .26$ , among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = -.03$ , among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .21$ , and among mattering (Wave 2) and anti-mattering (Wave 2) was  $r = -.16$ . All estimates are standardized. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.

## 5.4 Discussion

Study two sought to extend research in several ways. First, no studies have examined mattering or its important conceptual opposite anti-mattering in longitudinal tests of the PSDM. Second, while longitudinal studies on the PSDM have examined depressive symptoms as an outcome, no studies have examined suicide ideation as an outcome. Third, although the relationship between mattering and suicidality has been well-established (e.g., Elliot et al., 2005), no longitudinal studies exist examining this relationship. Fourth, few longitudinal studies have examined the mattering-depressive symptoms relationship longitudinally (e.g., Marshall & Tilton-Weaver, 2019), and of these studies, none have been conducted in university students or have utilised a short timespan (i.e., over several weeks). Fifth, longitudinal studies of the PSDM have typically employed only two-waves of data, however three or more are required for a true test of mediation (e.g., Smith et al., 2018b). Study two addressed all of these limitations by conducting a robust three-wave longitudinal test of the PSDM, conducting a true test of mediation with predictors, mediators, and outcomes measured at separate time points, controlling for baseline levels.

It was hypothesized that socially prescribed perfectionism (but not self-oriented perfectionism) (Wave 1) would confer vulnerability to depressive symptoms and suicide ideation (Wave 3) via anti-mattering (Wave 2). Findings revealed that socially prescribed perfectionism conferred vulnerability to depressive symptoms (but not suicide ideation) via anti-mattering in the university sample, but not in the community sample. By contrast, socially prescribed perfectionism did not confer vulnerability to depressive symptoms or suicide ideation via mattering. Additionally, self-oriented perfectionism did not confer vulnerability to depressive symptoms or suicide ideation via mattering and anti-mattering across samples.

*5.4.1 The mediated effects of perfectionism on depressive symptoms and suicide ideation through mattering and anti-mattering.*

The finding that socially prescribed perfectionism indirectly predicted depressive symptoms via anti-mattering in the university sample is in line with a large body of research showing that socially prescribed perfectionism confers vulnerability to depressive symptoms (Smith et al., 2016). This finding also aligns with research which found socially prescribed perfectionism to predict depressive symptoms via mattering and other markers of social disconnection (e.g., Cha, 2016; Flett et al., 2012; Smith et al., 2018b). Furthermore, this finding was the only indirect pathway to emerge longitudinally in the model, suggesting that this pathway and relationship is extremely robust within the PSDM. Here, this longitudinal test provides one of the most stringent tests to date of this relationship and established that, over time, increases in perceptions that others are excessively demanding and impossible to please generates increases in depressive symptoms (via feeling insignificant, invisible, and unimportant) among university students.

Unexpectedly this finding did not replicate in the community sample, which contrasts against study one and prior cross-sectional research (e.g., Cha, 2016). It is possible that the lack of finding here may be attributed to the high rank order stability of depressive symptoms between Time 1 and Time 3 ( $r = .80$ ), relative to the university sample ( $r = .52$ ). The disparities in rank-order stability are in line with meta-analytic research showing that depressive symptoms become increasingly stable with age (Smith et al., 2021). As such, there would have been less variance to be explained in the community sample. Here, it is possible that a longer timeframe (e.g., months rather than weeks) may have been required to allow these changes time to unfold, particularly given that depressive symptoms are also found to become decreasingly stable over time (Smith et al., 2021). Future research is needed to replicate these relationships in community adults utilising a longer timeframe.

It is also possible that the lack of finding here may suggest that feelings of not mattering are less salient to community adults in explaining why perfectionism leads to depressive symptoms. Rosenberg and McCullough (1981), for example, have suggested that a sense of mattering is particularly important for two groups of people: young people and older adults. In this regard, feelings of not mattering may be less salient in a middle-aged community sample who may feel important to others because they are more likely to be depended on by others (e.g., children and older parents). However, because the community sample reported significantly lower levels of mattering (relative to the university sample) in the current study, this finding may instead reflect the importance placed on feelings of not mattering, rather than actual perceived levels of mattering (Flett, 2022). It is possible, then, that the university sample placed greater importance on the need to matter to others. Research, however, is yet to examine the importance of mattering to others (Flett, 2022). Future research would benefit from examining whether feelings of mattering and the importance of mattering vary across age groups.

Alternatively, other mediators have been shown to play an important role in longitudinal research with community adults (e.g., personality-dependent stressful life events, daily stress reactivity, difficulty accepting the past; Cox et al., 2009; Dunkley et al., 2015; Smith et al., 2020a). In particular, difficulty accepting the past would likely be an important mediator in this relationship within older community samples. This is because older adults are likely to place greater importance on their past (Butler, 1963; Santor & Zuroff, 1994). Adults of an older age, then, are more likely to experience greater deficits in wellbeing if they have difficulty accepting their past and negotiating a sense of meaning or purpose from their lives (Steger et al., 2009). Future research examining various mediators and integrating models to test the predictive ability of individual explanatory models in community adults is warranted.



After including suicide ideation for the first time in this model, the indirect relationship between socially prescribed perfectionism and suicide ideation did not emerge longitudinally across samples. This finding contrasts against the cross-sectional findings from study one (particularly with the inclusion of anti-mattering), theory (Hewitt et al., 2006) and research (Roxborough et al., 2012). Though findings from this study indicate that suicide ideation may not be as relevant to the PSDM as depressive symptoms, study two is the first study to examine suicide ideation in a robust longitudinal test of the PSDM, and thus findings should be interpreted cautiously. There are several possible explanations for why this finding did not emerge. Prior studies, for instance, have found perfectionism to predict suicide ideation longitudinally in clinical (e.g., Beevers & Miller, 2004), but not non-clinical samples (e.g., Enns et al., 2001). Therefore, the PSDM may be more adept at explaining these relationships in clinical groups experiencing greater variability in suicide ideation.

In addition, the study design had a relatively short time frame (three waves separated by three weeks). While the six-week timeframe is an appropriate length of time, it is also possible that the elapsed time was not long enough to allow for changes in suicide ideation. A related issue here is the high rank-order stability of suicide ideation which was notably higher than depressive symptoms across samples. The rank order stability of suicide ideation between Time 1 and Time 3, for example, was high in both the university sample ( $r = .73$ ) and the community sample ( $r = .89$ ). This is comparable to lower rank order stabilities for depressive symptoms in the university sample ( $r = .52$ ) and the community sample ( $r = .80$ ). Here, there would have been less variance to be explained in suicide ideation, relative to depressive symptoms. It is possible, then, that a longer timeframe may have been required to allow changes to unfold, as suicidal thoughts are considered to be decreasingly stable over time. Future research is needed to replicate this relationship in longer timeframes.

Finally, it may be that socially prescribed perfectionism predicts suicide ideation via other mediators (e.g., thwarted belongingness and perceived burdensomeness). Thwarted belongingness and perceived burdensomeness are two interpersonal factors that are consistently associated with suicide ideation (Van Orden et al., 2010). Research, for instance, has consistently found these dimensions, and in particular perceived burdensomeness, to play an important role in the onset of suicide ideation (see Chu et al., 2017; Forkmann & Teissman, 2017; Roeder & Cole, 2019). In addition, research has found perceived burdensomeness to mediate the relationship between maladaptive perfectionism and suicide ideation cross-sectionally (Rasmussen et al., 2012). Given the robust relationship between perfectionism and suicide ideation in previous research (Smith et al., 2018a), future research should investigate perceived burdensomeness and other important mediators in this relationship.

The findings of the present study exhibit several disparities when comparing the findings of the cross-sectional findings in study one. While socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering (and mattering in the community sample) cross-sectionally, only the relationship with depressive symptoms emerged as significant when examined longitudinally. The disparity between findings from the cross-sectional and longitudinal design within the PSDM is important given that most research on the PSDM to date, has relied on cross-sectional designs (e.g., Roxborough et al., 2012). Given the disparities evident across study one and study two, it is possible, then, that previous findings from cross-sectional studies on the PSDM may also not replicate in robust longitudinal designs. As such, future research on the PSDM calls for more robust tests of existing findings.

The lack of finding with mattering in the PSDM in the current study contrasts against previous research examining mattering and suicide ideation and mattering and depressive

symptoms over time (Elliot et al., 2005; Marshall & Tilton-Weaver, 2019; Taylor & Turner, 2001) and prior research on the PSDM (e.g., Cha, 2016). Nevertheless, study two was the first study to examine the relationship between mattering alongside anti-mattering longitudinally in relation to depressive symptoms and suicide ideation. Following the inclusion of anti-mattering, mattering was rendered non-significant wherein no indirect effects emerged. While prior research has found mattering to emerge as an important mediator in the PSDM (e.g., Cha, 2016; Flett et al., 2012), it is likely that this finding did not emerge because mattering appears to be subsumed by anti-mattering which is more insidious and destructive and captures feelings of unfairness and marginalization (Flett, 2018b). As such, anti-mattering likely accounted for much of the variance. When considered alongside anti-mattering, mattering is deemed to be less important. Instead, anti-mattering appears to be a better proxy than mattering as a marker of social disconnection and should be prioritized when testing the PSDM and evaluating the risk of depression and suicidality in future research.

Based on the findings of study one, the lack of findings with self-oriented perfectionism in the longitudinal design were as expected. This finding contrasts with research that suggests people higher in self-oriented perfectionism generate social disconnection, depressive symptoms, and suicide ideation over time (Smith et al., 2016; Smith et al., 2018a; Smith et al., 2020c). Despite this, there is currently mixed support for the inclusion of self-oriented perfectionism in the PSDM (e.g., Rnic et al., 2021; Sherry et al., 2013a; Smith et al., 2017b). In line with previous research (Flett et al., 2012), findings from both study one and two suggest that feelings of mattering and not mattering are not of particular relevance to self-oriented perfectionism. Future research is required to disentangle the role of the self-oriented perfectionism in the PSDM, by identifying other social disconnection markers (e.g., loneliness; Chang et al., 2008) which better capture the nature of

self-oriented perfectionism and should examine these relationships in a robust longitudinal design.

### **5.5 Concluding remarks**

Study two makes a novel contribution to understanding relationships between perfectionism, depressive symptoms, and suicide ideation via mattering and anti-mattering in the PSDM. Socially prescribed perfectionism conferred vulnerability for depressive symptoms via anti-mattering in the university sample only. Findings indicate that anti-mattering may be one mechanism through which those higher in socially prescribed perfectionism are at increased risk of depressive symptoms. Based on this finding, the current study advocates for the inclusion of anti-mattering in future tests of the PSDM, in addition to other research evaluating the risk of depressive symptoms and suicidality. Findings also highlight the importance of examining the PSDM between samples and the need for future robust longitudinal tests of the PSDM.

## Chapter 6

Study three: A cross-sectional test of an integrated model of the Perfectionism Social Disconnection Model and the Existential Model of Perfectionism and Depressive Symptoms.

*“The hardest thing, I think, is to live richly in the present, without letting it be tainted & spoiled out of fear for the future or regret for a badly managed past”.* – Sylvia Plath,

*“Letters of Sylvia Plath”* Volume I: 1940–1956 (Plath, 2017).

### 6.1 Introduction

Study one and two extended research in three ways. First, prior studies examining the PSDM in relation to suicide ideation are scarce, with no research examining this relationship in non-clinical samples. Both study one and two addressed this limitation and were the first to examine the PSDM extended to suicide ideation as an outcome in non-clinical samples of university students and community adults. Second, while extant studies of the PSDM have examined various markers of social disconnection as mediators, no studies have examined anti-mattering in the PSDM and no studies have examined mattering in relation to suicide ideation in the PSDM. Study one and two were the first to do so. Third, existing research on the PSDM has largely relied on cross-sectional research or longitudinal designs consisting of two waves of data. In particular, no extant longitudinal research had examined suicide ideation in the PSDM. Study two addressed this limitation and provided one of the most robust tests of the PSDM to date.

Across the two studies, findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms via anti-mattering both cross-sectionally and longitudinally. This relationship appeared to be the most robust and was the only relationship to replicate in study two. In contrast, while socially prescribed perfectionism indirectly

predicted suicide ideation via mattering (in the community sample only) and anti-mattering (across both samples) in study one, this finding did not replicate when examined longitudinally in study two. Inconsistent support was also found for the inclusion of feelings of mattering in the PSDM. Socially prescribed perfectionism, for instance, was found to indirectly predict both depressive symptoms and suicide ideation via mattering in study one (in the community sample only). However, these relationships did not replicate when examined within a more robust design. Findings also revealed that self-oriented perfectionism did not indirectly predict depressive symptoms or suicide ideation via mattering and anti-mattering across both studies.

While study one and study two provide additional support for the PSDM, particularly in explaining the perfectionism-depressive symptoms link, they do not acknowledge factors beyond social disconnection. Alternative and complementary models are required to broaden the scope on possible explanatory factors. In this regard, the thesis now turns to testing the EMPDS. Like the PSDM, the EMPDS is a promising explanatory model, which suggests that perfectionism contributes to depressive symptoms through markers of existential threat (i.e., difficulty accepting the past; Graham et al., 2010), rather than social disconnection. Early indication is that this model is a valuable and important addition to work in this area, but it has received very little empirical attention so far. In addition, while the EMPDS has been examined in relation to depressive symptoms, no research has examined whether this model also extends to suicide ideation. This chapter addresses both of these limitations and provides the first integrated test of the PSDM and EMPDS, examining both depressive symptoms and suicide ideation as outcomes.

### *6.1.1 The Existential Model of Perfectionism and Depressive Symptoms*

The EMPDS is an explanatory model which seeks to explain the perfectionism-depressive symptoms link (Graham et al., 2010). The EMPDS suggests that socially

prescribed perfectionism leads to depressive symptoms because of difficulty accepting the past (i.e., viewing life experiences as incoherent, unacceptable, dissatisfying, and meaningless; Graham et al., 2010). Several existential theorists highlight the importance of finding meaning and purpose in one's life (e.g., Frankl, 1984; May, 1969; Yalom, 1980). However, the prominent features of people higher in socially prescribed perfectionism (e.g., harsh self-scrutiny and an obligation to please others) can obstruct the process of meaning-making and impede upon their ability to accept the past (Smith et al., 2020b). In addition, existential theorists such as Frankl (1984), also suggest those who struggle to view their past experiences as coherent, meaningful, and satisfying are prone to experiencing depressive symptoms.

Theoretically, three reasons exist as to why people higher in socially prescribed perfectionism struggle to accept their past. The first reason is that people higher in socially prescribed perfectionism perceive others as imposing excessive expectations on them and are highly reactive and sensitive to these external influences (Hewitt & Flett, 1991b). Accordingly, compliance and conformity are prominent in the lives of those higher in socially prescribed perfectionism (Bruch, 1979). Feeling as though they have lived their lives in congruence with others' expectations may lead individuals with high socially prescribed perfectionism to interpret their life as inauthentic and difficult to accept, which in turn impedes upon their ability to live a meaningful and authentic life (Graham et al., 2010). Graham et al. (2010) also suggests that the attempt to pursue perfection may ultimately undermine meaning and satisfaction given that 'perfection' is unobtainable and non-existent.

The second reason is that people higher in socially prescribed perfectionism may struggle to accept the past because they typically live a narrow and constrained life. In the pursuit of attaining perfection, opportunities for personal growth, social relations, and meaningful experiences often pass them by (Graham et al., 2010). This is because people

higher in socially prescribed perfectionism spend too much time trying to meet expectations of others, and are less focused on cultivating deep and meaningful relationships which are not contingent upon others expectations. Therefore, they miss out on opportunities to create meaning and purpose in their lives, which impedes upon their ability to accept the past (Graham et al., 2010).

The third reason is that because perfection is impossible to reach, striving for perfection will result in frequent disappointment. People higher in socially prescribed perfectionism are extremely hypercritical and adopt an unforgiving stance towards the self (Graham et al., 2010). They are also extremely threatened by evaluative situations and view setbacks and failures as unacceptable. Ultimately, people higher in socially prescribed perfectionism are likely to ruminate over their past failures and view their past experiences through a self-critical lens (Sherry et al., 2015). In all, these individuals create a life that is difficult to accept (Graham et al., 2010).

As discussed in chapter three, self-oriented perfectionism was not originally included as part of the EMPDS (Graham et al., 2010). However, research suggests that self-oriented perfectionism may play a role in this model. This is because self-oriented perfectionism typically involves a narrow focus on agentic goals at the expense of communal goals. This narrow focus on achievements can lead to a constricted range of experiences, where opportunities to form close social relationships and meaningful experiences are often missed or ignored (Sherry et al., 2016). It is possible, then, that people higher in self-oriented perfectionism struggle to accept their past due to a lack of meaningful experiences and meaningful relationships (Smith et al., 2020b).

A further reason why self-oriented perfectionism may be important in this model is because this dimension involves compulsive striving for perfection (Hewitt & Flett, 1991b). Resulting from relentless striving, self-oriented perfectionism often leads to frequent



disappointments and perceived failures because perfection can never be reached (Hewitt & Flett, 1991b). People higher in self-oriented perfectionism are self-critical and often magnify perceive setbacks and failures. This may lead to negative representations of the past, where past experiences are perceived as unsatisfying and meaningless. Ultimately, past experiences will be difficult to accept.

However, it is also possible that self-oriented perfectionism does not play an important role in the EMPDS. This is because self-oriented perfectionism involves self-focused striving for perfection. In contrast to socially prescribed perfectionism, people higher in self-oriented perfectionism are less concerned with meeting others expectations and more concerned with meeting their own standards and expectations. In this regard, compliance and conformity are much less relevant to self-oriented perfectionism. People higher in self-oriented perfectionism may feel less controlled by others and live a more authentic life, and thus may be more accepting of their past than people higher in socially prescribed perfectionism. In line with this suggestion, to date, research has found no support for the inclusion of self-oriented perfectionism in the EMPDS when examining difficulty accepting the past as a mediator (Smith et al., 2020b). However, only one study has examined self-oriented perfectionism in the EMPDS (see Smith et al., 2020b). Future research is needed to clarify its role.

### *6.1.2 Research on the Existential Model of Perfectionism and Depressive Symptoms*

The EMPDS has received much less attention. To date, only five studies have examined the EMPDS (see Chapter three for a detailed overview). Three of these studies have examined the EMPDS cross-sectionally (Park & Jeong, 2016; Sherry et al., 2015; Smith et al., 2020b), two of which were examined in university samples (Park & Jeong, 2016; Sherry et al., 2015). In the first cross-sectional study, Sherry et al. (2015) tested a moderated mediated model of the EMPDS in undergraduate students cross-sectionally. Sherry et al.

(2015) examined whether socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past, and whether the strength of the mediation effect was conditional on levels of socially prescribed perfectionism. As expected, the authors found difficulty accepting the past to mediate the relationship between socially prescribed perfectionism and depressive symptoms. The strength of this relationship was conditional on levels of socially prescribed perfectionism.

In the second cross-sectional study, Park and Jeong (2016) examined the moderating role of meaning in life in the EMPDS in a sample of college students. More specifically, the authors examined whether the search for and the presence of meaning in life moderated relationships between maladaptive perfectionism (formed of discrepancy, standards, and order), depression, and psychological distress. Moderation analyses found search for meaning in life, but not presence of meaning in life, to moderate the relationship between maladaptive perfectionism and depression. Similarly, search for meaning in life but not the presence of meaning in life was found to moderate the relationship between maladaptive perfectionism and psychological distress.

Smith et al. (2020b) conducted the third cross-sectional study of the EMPDS. They extended this research by replicating relationships of the EMPDS in a sample of depressive individuals. The authors examined the extent to which self-oriented perfectionism and socially prescribed perfectionism, rumination, and difficulty accepting the past collectively and uniquely influence depressive symptoms. Specifically, Smith et al. (2020b) examined the mediating role of rumination and difficulty accepting the past in relationships between self-oriented and socially prescribed perfectionism and depressive symptoms. Socially prescribed perfectionism indirectly predicted depressive symptoms via rumination and difficulty accepting the past. Conversely, self-oriented perfectionism indirectly predicted depressive symptoms through rumination, but not difficulty accepting the past.

### 6.1.3 *Difficulty accepting the past*

Several theorists suggest that evaluating or reflecting on life experiences later in life is important for psychological functioning and wellbeing (Butler, 1963; Erikson, 1950).

Accepting the past is theorized as viewing one's life as coherent, acceptable, satisfying, and meaningful (Santor & Zuroff, 1994). This construct was originally formulated based on a core component of Erikson's (1950) final stage of development *ego-integrity* versus *ego despair*. Ego-integrity is viewed as central to harmonious personality development wherein the individual views their life with satisfaction and contentment (Erikson, 1950). Santor and Zuroff (1994) suggest that a core feature of ego-integrity involves an internal representation of the past as acceptable or satisfactory. Rather than alluding to accepting the past as a key feature of ego-integrity, Santor and Zuroff (1994) propose that *accepting the past* can stand alone as a conceptually distinct construct.

Accepting the past is conceptualized as an ongoing process and an internal representation and integration of the past as satisfying. Those who accept the past engender positive feelings and evaluations regarding their past, without experiencing excessive negative feelings, disappointments, or regrets (Santor & Zuroff, 1994). That said, accepting the past does not preclude negative experiences or events. Notably, individuals who accept the past may wish things were done differently or that some life events had not occurred, but they are still at peace with and are accepting of their past. Conversely, individuals who focus heavily on negative life-events may be unable to accept the past (Santor & Zuroff, 1994). However, Santor and Zuroff (1994) propose that it is a representation of the past in general, which is integral to an individual's wellbeing, rather than specific events.

Accepting the past is postulated to be one determinant of self-esteem or self-worth central to the formation of depression (Santor & Zuroff, 1994). In support of this, Santor and Zuroff (1994) found failure to accept the past to predict depressive symptoms, however this

relationship was moderated by trait negative affectivity. For example, accepting the past negatively predicted depressive symptoms only in individuals experiencing high negative affectivity (Santor & Zuroff, 1994). Prior research also highlights the role of a loss of self-worth in the formation of depression (e.g., Oatley & Bolton, 1985). Though prior models have focused on a loss of self-worth stemming from interpersonal sources (Oatley & Bolton, 1985; Pyszczynski & Greenberg, 1987), it is also posited that self-worth can emanate from other sources, such as accepting the past.

Santor and Zuroff (1994) suggested that people who do not accept the past as satisfying and meaningful may encounter a deficit in self-worth and subsequently suffer from depressive symptoms. In addition, Santor and Zuroff, (1994) posit that accepting the past as a source of self-worth should be examined in relation to other sources of self-worth, such as interpersonal relationships. The present study, thus, examines a past source of self-worth (accepting the past) in combination with a present source of self-worth (the perception of mattering and anti-mattering within interpersonal relationships) as mediating variables within the perfectionism-depressive symptoms and perfectionism-suicidality relationship.

#### *6.1.4 Extending the EMPDS to suicide ideation*

Though no prior research has examined suicide ideation as an outcome in the EMPDS, theory and research suggest that suicide ideation may be an important addition to the model (e.g., Butler, 1963; Rasmussen et al., 2008; Smith et al., 2020a). Existential theorists have proposed that an inability to find a sense of meaning and coherence in life and negative evaluations of the past give rise to poorer psychological wellbeing (Erikson, 1950; Frankl, 1984; Yalom, 1980). Furthermore, Butler (1963) posits that people who assess their life to be a failure will experience psychological manifestations such as guilt, anxiety, and depression. However, in its severe form, an obsessive preoccupation with the past in older adults may lead to suicidality. Evidence also suggests that when individuals accept their past,

they view their past as meaningful (Santor & Zuroff, 1994). This is important because research suggests that reasons for living and meaning in life can predict decreased suicide ideation over time (Heisel et al., 2016; Kleiman & Beaver, 2013). In addition, researchers Flett et al. (2014b) propose that people higher in perfectionism are likely to be at greater risk of suicidality if they perceive their life is without meaning or purpose.

Research has found socially prescribed perfectionism to indirectly predict suicidality via mediators concerning existential matters. For instance, two studies by Dean and colleagues (Dean & Range, 1996; Dean et al., 1996) examined the role of reasons for living in relationships between trait dimensions of perfectionism (i.e., self-oriented perfectionism, socially prescribed perfectionism, and other-oriented perfectionism) and suicide ideation in university students. Findings revealed that neither self-oriented perfectionism nor other-oriented perfectionism were associated with suicide ideation. However, socially prescribed perfectionism was associated with hopelessness and suicide ideation and provided unique variance in suicide ideation (Dean et al., 1996). In the first study, Dean and Range (1996) found socially prescribed perfectionism to indirectly predict suicidal behaviours via a negative association with reasons for living. Similarly, in the second study, Dean et al. (1996) found significant paths to emerge from socially prescribed perfectionism to depression to hopelessness to low reasons for living, and then to suicide ideation.

Likewise, Rasmussen et al. (2008) examined relationships between trait dimensions of perfectionism, autobiographical memory recall and psychological distress (hopelessness, anxiety, depression, and suicide ideation) in patients hospitalised for self-harm. Socially prescribed perfectionism was unrelated to overgeneral recall of positive and negative memories and suicide ideation. However, hierarchical regression analyses found socially prescribed perfectionism to interact with overgeneral recall of positive and negative memories (i.e., a generalized summary of past experiences, as opposed to a focus on specific

experiences) to predict depression and suicide ideation cross-sectionally. Findings suggest that generalized perceptions of the past may explain why people higher in socially prescribed perfectionism are vulnerable to suicide ideation. Given these associations and prior research examining depressive symptoms within the EMPDS (e.g., Park and Jeong, 2016; Sherry et al., 2015; Smith et al., 2020b), it can be expected that the EMPDS will also extend to suicidality.

#### *6.1.5 Contrasting the PSDM and the EMPDS*

In this section, the PSDM and EMPDS are compared and contrasted. In doing so, this section will shed light on the similarities and differences of the two models. This section will also highlight the need for both theoretical models to be considered in research examining the perfectionism-depressive symptoms and perfectionism-suicide ideation relationship. The PSDM and EMPDS share a number of similarities. Both models adopt a relatively simple mediational model that aim to explain why perfectionism leads to mental health problems. These models suggest that perfectionism contributes to psychopathology because of an intervening mechanism (e.g., social disconnection or existential threat). While these models are informative and have evidence in support of them (e.g., Graham et al., 2010; Hewitt et al., 2020; Rnic et al., 2021), they overlook other important features, such as the environmental context (e.g., the onset of stressful life events). In addition to this, both models have, to date, been examined in isolation. The PSDM and EMPDS, therefore, should be considered alongside other risk factors and explanatory models and should also consider the environmental context.

Both the PSDM and EMPDS also originally conceptualized socially prescribed perfectionism to be the main driver of their model (Graham et al., 2010; Hewitt et al., 2006). Since their conceptualization, socially prescribed perfectionism has continued to obtain support for its role in these models (e.g., Flett et al., 2012; Nepon et al., 2011; Smith et al.,

2020b). In contrast to socially prescribed perfectionism, the extent to which self-oriented perfectionism plays a role in the PSDM and EMPDS is unclear. While theorists only originally included socially prescribed perfectionism in the PSDM and EMPDS (Graham et al., 2010; Hewitt et al., 2006), researchers have since examined whether other dimensions, such as self-oriented perfectionism, play a role in these models. Since its inclusion in these models, the role of self-oriented perfectionism remains unclear (Hewitt et al., 2020; Rnic et al., 2021; Smith et al., 2020b). More research examining self-oriented perfectionism and various relational and existential mediators is required to better understand its role in the PSDM and EMPDS.

A strong emphasis is also placed in the PSDM and EMPDS on perfectionism and relational problems. While the PSDM does so more explicitly, the EMPDS also suggests that perfectionism involves a lack of meaningful relationships (e.g., Flett et al., 2012; Graham et al., 2010). Socially prescribed perfectionism, for instance, results in a narrow set of life experiences where opportunities to form deep and meaningful relations are missed or overlooked (Graham et al., 2010; Sherry et al., 2016). In addition, both the PSDM and EMPDS suggest that perceiving others to impose excessive expectations onto them (i.e., socially prescribed perfectionism) can lead to disapproval from others (PSDM; Hewitt et al., 2006; Hewitt et al., 2017) or compliance and conformity leading to an inauthentic life (EMPDS; Graham et al., 2010). In this regard, given that at the root of perfectionism is a need to be accepted and loved, it would be expected that all explanatory models of perfectionism would have at least some element of interpersonal characteristics (Hewitt et al., 2017).

When comparing and contrasting these two models, it is clear that there are also several differences between the two models. While the EMPDS does touch upon interpersonal relations, the main premise of the PSDM and EMPDS differ. For instance, the

PSDM has a clear relational focus, involving subjective perceptions of our relationships with others, and how others perceive us (Hewitt et al., 2006). In contrast, the EMPDS has more of a humanistic focus involving perceptions of past life experiences (Graham et al., 2010). In this sense, the PSDM also largely focuses on present sources of self-worth, such as present relationships with others, however the EMPDS largely focuses on a past source of self-worth, such as negative perceptions of the past (which can include a lack of meaningful relationships in the past; Santor & Zuroff, 1994).

In contrast to the EMPDS, too, the PSDM has been refined since its original conceptualization (Hewitt et al., 2017). While the original PSDM focused on the role of socially prescribed perfectionism as the main driver in the PSDM, the expanded PSDM suggests a role for all trait dimensions of perfectionism, self-presentational styles, and perfectionistic cognitions (Hewitt et al., 2017). In this regard, it is also possible that other perfectionism dimensions, such as perfectionistic cognitions, may play a role in the EMPDS too (e.g., ruminating about mistakes or regrets from the past). However, while research has considered whether self-oriented perfectionism plays a role in the EMPDS (Smith et al., 2020b), no research has included whether external expressions of perfectionism also play a role in the EMPDS. The lack of refinement of the EMPDS also highlights the relative scarcity of research on the EMPDS.

Finally, relative to the EMPDS, the PSDM has been extensively researched (e.g., Hewitt et al., 2020; Mackinnon et al., 2012; Rnic et al., 2021). The PSDM has been examining using a variety of markers of social disconnection (e.g., interpersonal discrepancies, interpersonal hopelessness, and social self-esteem; Robinson et al., 2022; Sherry et al., 2013a; Smith et al., 2017b), and outcomes (e.g., anxiety, depressive symptoms, and suicide ideation; Magson et al., 2019; Rnic et al., 2021; Robinson et al., 2022). In contrast, the EMPDS is largely under researched. Only five studies, to date, have tested the



EMPDS (e.g., Park & Jeong, 2016; Sherry et al., 2015; Smith et al., 2020a). Of these studies, almost all have focused on examining difficulty accepting the past as the only existential mediator and all have focused on depressive symptoms as the only outcome (e.g., Graham et al., 2010; Smith et al., 2020a; Smith et al., 2020b). Future research is needed to extensively test the EMPDS utilising various mediators and outcome variables.

#### *6.1.6 The present study*

Study three sought to advance research in two ways. First, while suicide ideation has just begun to be examined in the PSDM (e.g., Robinson et al., 2022), no research has tested whether the EMPDS extends to the suicide ideation beyond depressive symptoms (Smith et al., 2020a). It is important, then, to determine whether the EMPDS extends to include suicide ideation as an outcome alongside depressive symptoms. Second, most theoretical models explaining the perfectionism-depressive symptoms link and the perfectionism-suicidality link have been studied separately, which prevents evaluations of unique contributions. It is important for research to integrate the PSDM and EMPDS to compare competing explanatory models and to test the predictive ability of the PSDM and EMPDS. Combining the PSDM and EMPDS integrates both a past source of self-worth (difficulty accepting the past) and a present source of self-worth (feelings of mattering and not mattering within interpersonal relationships) as mediators, and therefore helps to form a more complete understanding of the perfectionism-depressive symptom relationship and the perfectionism-suicidality relationship. Study three addresses these limitations and advances research in two ways: (1) conducts a test of the EMPDS only to determine whether the EMPDS extends to include suicide ideation as an outcome and (2) conducts a separate test of an integrated model combining the PSDM and EMPDS. In conducting a separate test of the EMPDS and the integrated model, the predictive ability and variance attributed to each model can be determined.

### *6.1.7 The purpose of study three*

The purpose of study three was to advance research in two ways: (1) to conduct a test of the EMPDS that includes suicide ideation as an outcome alongside depressive symptoms and (2) to conduct a separate test of an integrated model of the PSDM and EMPDS. In a test of the EMPDS, it was hypothesized that socially prescribed perfectionism would indirectly predict depressive symptoms and suicide ideation via difficulty accepting the past. In a test of the integrated model, it was hypothesized that socially prescribed perfectionism would indirectly predict depressive symptoms and suicide ideation via anti-mattering, and difficulty accepting the past. Based on study one and study two, the role of self-oriented perfectionism and mattering were considered exploratory.

## **6.2 Method**

### *6.2.1 Participants*

Study three consists of two samples. The first sample consisted of 250 undergraduate students (68.4% female;  $M_{\text{age}} = 23.62$  years,  $SD = 8.24$ ) from various courses and universities in the United Kingdom recruited from Prolific Academic. Participants were predominantly White British (76.4%) and were in their first (26.1%), second (31.3%), third (29.7%), fourth (10.4%), or fifth (2.4%) year of study. The second sample consisted of 251 community adults from the United Kingdom (58.5% female; 3 undisclosed;  $M_{\text{age}} = 36.10$  years,  $SD = 12.66$ ) and were also recruited from Prolific Academic. Participants were predominantly White British (83.7%).

### *6.2.2 Procedure*

Preceding data collection, the study was approved by York St John university's cross-school ethics committee (see Appendix A.3; Ethics reference code: UREC03). Due to the onset of the COVID-19 pandemic, in this study, both the university and community sample were collected online and recruited from Prolific Academic. At the time the survey was

published on Prolific Academic, there was no option to screen undergraduate students according to specific courses (e.g., psychology and sport courses) or universities, to be consistent with the participants recruited in study one and two. Participants recruited were therefore enrolled in various courses across different universities. In this regard, it is important to be mindful that students across different courses and universities may experience unique stressors (e.g., differing workloads and examination stress), however many stressors that students' experience are shared among the wider student population (e.g., transition from home, academic stress, financial constraints; see Lewis & Cardwell, 2018).

Prior to participating, university students and community adults were required to meet eligibility criteria. A custom screening ensured that only eligible participants were able to participate. For instance, participants were only eligible to participate if they were from the United Kingdom, have completed 100 previous submissions with a 95% or above approval rate and had not been previously recruited in study one or study two. Those who met the eligibility criteria were recruited on a first-come first-served basis. Those who opted to participate provided informed consent and completed an online questionnaire on Qualtrics. Upon signing up to Prolific, participants were given a Prolific ID which allowed them to remain anonymous. As a reward for their time, participants were paid £0.85 to complete the online questionnaire.

### *6.2.3 Measures*

Multidimensional perfectionism, mattering, anti-mattering, and depressive symptoms measures were identical to study one and study two (see Chapter four for a detailed overview and Appendix C.2, C.3, C.4, and C.6 for measures). Perfectionism was measured using the HF-MPS-SF (Hewitt et al., 2008). Mattering was measured using the GMS (Rosenberg & McCullough, 1981). Anti-mattering was measured using the AMS (Flett et al., 2022b). Depressive symptoms were measured using the CES-D-SF (Cole et al., 2004). Suicide

ideation was measured using the ASIQ (Reynolds, 1991; see Chapter five for an overview and Appendix C.8. for the measure).

#### 6.2.3.1 *Difficulty accepting the past*

Accepting the past was measured using Santor and Zuroff's (1994) 16-item Accepting the Past Scale (ACPAST). The ACPAST was developed to measure the final stage of Erikson's (1950) psychosocial development model: ego integrity vs ego despair. The ACPAST measures the degree to which individuals' view their past experiences as meaningful, satisfying, and acceptable (16-items; e.g., "Sometimes I had the feeling that I've never had the chance to live", "Some personal experiences from earlier on are still too difficult to think about", and "When I look back on my past, I have a feeling of fulfilment" – reverse scored; see Appendix C.5. for the measure). Items were rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale examines the extent to which participants deem their past as acceptable. Scores are summed to yield a total score ranging from 16 to 80. To ease interpretation, seven items indicating accepting the past were reverse scored, so that higher scores on all items indicated greater difficulty accepting the past.

Santor and Zuroff (1994) found initial support for the psychometric properties of the ACPAST. For instance, Santor and Zuroff (1994) found the ACPAST to exhibit adequate internal reliability ( $\alpha > .70$ ). Item-total correlations for the 16-items ranged from  $r = .26$  to  $.69$  and were highly significant ( $p < .001$ ). In support of construct validity, the ACPAST was found to be unrelated to reminiscing about the past, positively correlated with ego-integrity, and negatively correlated with depressive symptoms, negative affect, and physical symptoms (Santor & Zuroff, 1994). In addition, accepting the past has demonstrated superior predictive and incremental validity in depressive symptoms, beyond ego-integrity (Santor & Zuroff, 1994). Evidence has since supported the reliability, test-retest reliability, factorial validity,

convergent, discriminant, predictive validity, and incremental validity of the ACPAST (e.g., Graham et al., 2010).

Research has found the ACPAST to exhibit high internal reliability ( $\alpha > .92$ ; Malinowski et al., 2017; Smith et al., 2020a; Smith et al., 2020b). In addition, Graham et al. (2010) found test-retest reliabilities to range from  $r = .80$  to  $.84$  over four weeks in undergraduates. Additionally, Graham et al. (2010) found the ACPAST (reverse scored) to positively correlate with perfectionistic concerns, neuroticism, catastrophic thinking, and depressive symptoms. Malinowski et al. (2017) also demonstrated that the ACPAST was negatively correlated with socially prescribed perfectionism, depression, characterological shame, bodily shame, state anxiety and trait anxiety. Likewise, Smith et al. (2020b) found the ACPAST to negatively correlate with rumination and depression and positively correlate with temporal past satisfaction with life and past negative-oriented time perspective (reverse scored).

#### *6.2.4 Data analytic strategy*

As in the previous studies, the preliminary analyses involved examining missing values, detecting multivariate outliers, and testing reliability of measures. The primary analyses involved calculating descriptive statistics and bivariate correlations. As in previous studies of the thesis, effect sizes of correlations were determined using Cohen's (1992) rules of thumb for small, medium, and large effects ( $r = .10, .30, .50$ ). Independent samples *t*-tests were run to compare study variables across the university student and community samples. First, a model examining the EMPDS was tested. Second, an integrated model examining the PSDM and EMPDS was tested. Both models were tested using path analysis with full information maximum likelihood estimation in Mplus version 8.0. (Muthén & Muthén, 1998-2017). The significance of indirect effects was determined using bias-corrected bootstrapping with 20,000 resamples (Shrout & Bolger, 2002). For an indirect effect to indicate mediation,

the 95% bias-corrected bootstrapped confidence interval does not include zero within its upper and lower bounds.

### 6.2.5 Preliminary Analyses

There were no missing data among samples. One participant from the university sample and four participants from the community sample who exhibited a Mahalanobis distance above the critical value of  $\chi^2(8) = 26.125, p < .001$  were excluded from the analyses (Tabachnick & Fidell, 2007). This yielded a final sample of 249 university students (68.3% female;  $M_{\text{age}} = 23.63$  years,  $SD = 8.26$ ) and 247 community adults (58.3%;  $M_{\text{age}} = 36.14$  years,  $SD = 12.67$ ).

## 6.3 Results

### 6.3.1 Descriptive statistics

Means, standard deviations, Cronbach's alphas, and bivariate correlations are reported in Table 6.1. Alpha reliabilities were  $\alpha > .78$  in the university sample and  $\alpha > .83$  in the community sample. In the university sample, age was not significantly correlated with variables, with the exception of a small, positive correlation with socially prescribed perfectionism. Conversely, in the community sample, age was significantly correlated with all variables with the exception of self-oriented other-oriented perfectionism. Age displayed a moderate negative correlation with socially prescribed perfectionism, depressive symptoms, and suicide ideation, a moderate positive correlation with mattering, and a small-to-moderate negative correlation with anti-mattering and difficulty accepting the past.

In the university sample, self-oriented perfectionism displayed nonsignificant correlations with mattering, anti-mattering, difficulty accepting the past, depressive symptoms, and suicide ideation. In contrast, socially prescribed perfectionism displayed a moderate negative correlation with mattering, a moderate positive correlation with anti-

mattering, difficulty accepting the past and depressive symptoms, and a small-to-moderate positive correlation with suicide ideation (see Table 6.1).

In the community sample, self-oriented perfectionism again displayed nonsignificant correlations with mattering, anti-mattering, difficulty accepting the past, depressive symptoms, and suicide ideation. In contrast, socially prescribed perfectionism displayed a small-to-moderate negative correlation with mattering, a moderate-to-large positive correlation with anti-mattering and depressive symptoms, and a small-to-moderate positive correlation with difficulty accepting the past and suicide ideation (see Table 6.1).

Independent samples t-tests contrasted samples on the study variables. Compared with the community sample, the university sample reported significantly higher levels of self-oriented perfectionism ( $t(494) = 2.22, p < .05$ ), socially prescribed perfectionism ( $t(494) = 4.22, p < .001$ ), anti-mattering ( $t(494) = 3.13, p < .01$ ), difficulty accepting the past ( $t(483.72) = 2.64, p < .01$ ), depressive symptoms ( $t(485.38) = 2.72, p < .01$ ), and suicide ideation ( $t(493.48) = 2.57, p < .05$ ). Whereas, the community sample reported significantly higher levels of mattering ( $t(494) = -4.04, p < .001$ ), relative to the university sample.

### 6.3.2 Path Analysis

#### 6.3.2.1 University sample – EMPDS only

Models were just-identified (i.e.,  $df = 0$ ). Hence, fit indices are not reported. The indirect effect of self-oriented perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = -.08$  [95% CI  $-.18, .03$ ],  $SE = .06$ ) was non-significant. The indirect effect of self-oriented perfectionism on suicide ideation via difficulty accepting the past ( $\beta = -.07$  [95% CI  $.17, .03$ ],  $SE = .05$ ) was also non-significant. The indirect effect of socially prescribed perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = .22$  [95% CI  $.11, .32$ ],  $SE = .05$ ) was significant. The indirect of socially prescribed perfectionism

Table 6.1. *Bivariate correlations, means, standard deviations, and alpha reliabilities across the university and community sample*

Variable	1	2	3	4	5	6	7	8	9	Mean	SD	$\alpha$
1. Age	—	-.11	-.32**	-.05	.30**	-.24**	-.22**	-.31**	-.27**	—	—	—
2. Self-oriented perfectionism	-.07	—	.63**	.60**	-.01	.10	.00	.10	.09	4.26	1.41	.91
3. Socially prescribed perfectionism	.13*	.59**	—	.49**	-.24**	.35**	.22**	.35**	.26**	3.89	1.29	.84
4. Other-oriented perfectionism	-.10	.46**	.44**	—	-.05	.13*	.03	.13*	.11	3.77	1.16	.83
5. Mattering	.12	-.03	-.29**	-.07	—	-.58**	-.60**	-.57**	-.46**	2.86	0.73	.89
6. Anti-mattering	-.01	.08	.27**	.01	-.50**	—	.62**	.72**	.54**	2.11	0.81	.90
7. Difficulty accepting the past	.03	.09	.27**	-.01	-.53**	.64**	—	.72**	.53**	2.74	0.87	.93
8. Depressive symptoms	-.07	.09	.30**	.04	-.47**	.68**	.67**	—	.69**	1.04	0.66	.87
9. Suicide ideation	.02	.09	.20**	.05	-.43**	.54**	.59**	.62**	—	0.67	0.99	.98
Mean ( <i>Item Level</i> )	—	4.53	4.35	3.84	2.60	2.33	2.94	1.20	.91	—	—	—
Standard deviation	—	1.33	1.16	1.13	0.68	0.78	0.76	0.59	1.03	—	—	—
Alpha reliabilities ( $\alpha$ )	—	.88	.78	.78	.85	.89	.91	.85	.98	—	—	—

*Note.* Bivariate correlations, means, standard deviations, and alpha reliabilities are presented above the diagonal for the community sample and below the diagonal for the university sample. University sample ( $N = 249$ ), Community sample ( $N = 247$ ).

\* $p < .05$ , \*\* $p < .01$ , two-tailed.



on suicide ideation via difficulty accepting the past ( $\beta = .20$  [95% CI .10, .30],  $SE = .05$ ) was also significant (see Figure 6.1).

#### 6.3.2.2 Community sample – EMPDS only

The indirect effect of self-oriented perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = -.09$  [95% CI -.21, .03],  $SE = .06$ ) was non-significant. The indirect effect of self-oriented perfectionism on suicide ideation via difficulty accepting the past ( $\beta = -.07$  [95% CI -.16, .02],  $SE = .05$ ) was also non-significant. The indirect effect of socially prescribed perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = .21$  [95% CI .10, .32],  $SE = .06$ ) was significant. The indirect of socially prescribed perfectionism on suicide ideation via difficulty accepting the past ( $\beta = .16$  [95% CI .08, .25],  $SE = .04$ ) was also significant (see Figure 6.2).

#### 6.3.2.3 University sample – Integrated model (PSDM and EMPDS)

The indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.01$  [95% CI -.05, .01],  $SE = .01$ ), anti-mattering ( $\beta = -.05$  [95% CI -.12, .01],  $SE = .03$ ) and difficulty accepting the past ( $\beta = -.04$  [95% CI -.11, .02],  $SE = .03$ ) was non-significant. The indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.03$  [95% CI -.08, .00],  $SE = .02$ ), anti-mattering ( $\beta = -.03$  [95% CI -.09, .00],  $SE = .02$ ), and difficulty accepting the past ( $\beta = -.04$  [95% CI -.12, .02],  $SE = .03$ ) was also non-significant. The indirect effect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = .02$  [95% CI -.02, .08],  $SE = .02$ ) was non-significant. Conversely, the indirect effect of socially prescribed perfectionism on depressive symptoms via anti-mattering ( $\beta = .14$  [95% CI .08, .22],  $SE = .04$ ) and difficulty accepting the past ( $\beta = .13$  [95% CI .06, .21],  $SE = .04$ ) was significant. The indirect effect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .05$  [95% CI -.00, .12],  $SE = .03$ ) was non-significant. Whereas, the indirect of socially prescribed perfectionism on suicide ideation

via anti-mattering ( $\beta = .09$  [95% CI .03, .16],  $SE = .03$ ) and difficulty accepting the past ( $\beta = .13$  [95% CI .06, .22],  $SE = .04$ ) was significant (see Figure 6.3).

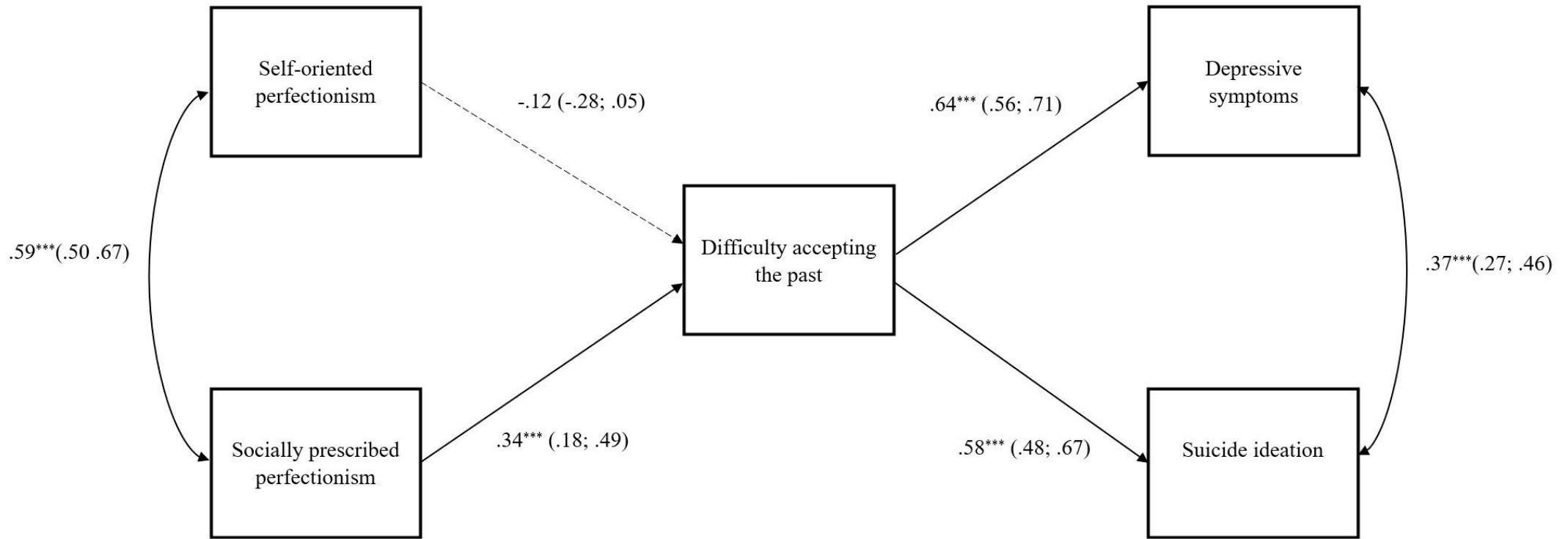
#### 6.3.2.4 Community sample – Integrated model (PSDM and EMPDS)

The indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.01$  [95% CI -.06, .00.],  $SE = .02$ ) was non-significant. However, the indirect effect of self-oriented perfectionism on depressive symptoms via anti-mattering ( $\beta = -.08$  [95% CI -.14, -.02],  $SE = .03$ ) and difficulty accepting the past ( $\beta = -.09$  [95% CI -.17, -.03],  $SE = .04$ ) was significant. The indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.03$  [95% CI -.08, -.00],  $SE = .02$ ), anti-mattering ( $\beta = -.06$  [95% CI -.12, -.01], and  $SE = .03$ ), and difficulty accepting the past ( $\beta = -.06$  [95% CI -.13, -.02],  $SE = .03$ ) was significant. The indirect effect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = .03$  [95% CI -.01, .08],  $SE = .02$ ) was non-significant. Conversely, the indirect effect of socially prescribed perfectionism on depressive symptoms via anti-mattering ( $\beta = .18$  [95% CI .12, .26],  $SE = .04$ ) and difficulty accepting the past ( $\beta = .15$  [95% CI .08, .23],  $SE = .04$ ) was significant. In addition, the indirect effect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .05$  [95% CI .00, .11],  $SE = .03$ ), anti-mattering ( $\beta = .13$  [95% CI .06, .22],  $SE = .04$ ) and difficulty accepting the past ( $\beta = .10$  [95% CI .05, .17],  $SE = .03$ ) was significant (see Figure 6.4).

#### 6.3.2.5 The inclusion of age as a covariate

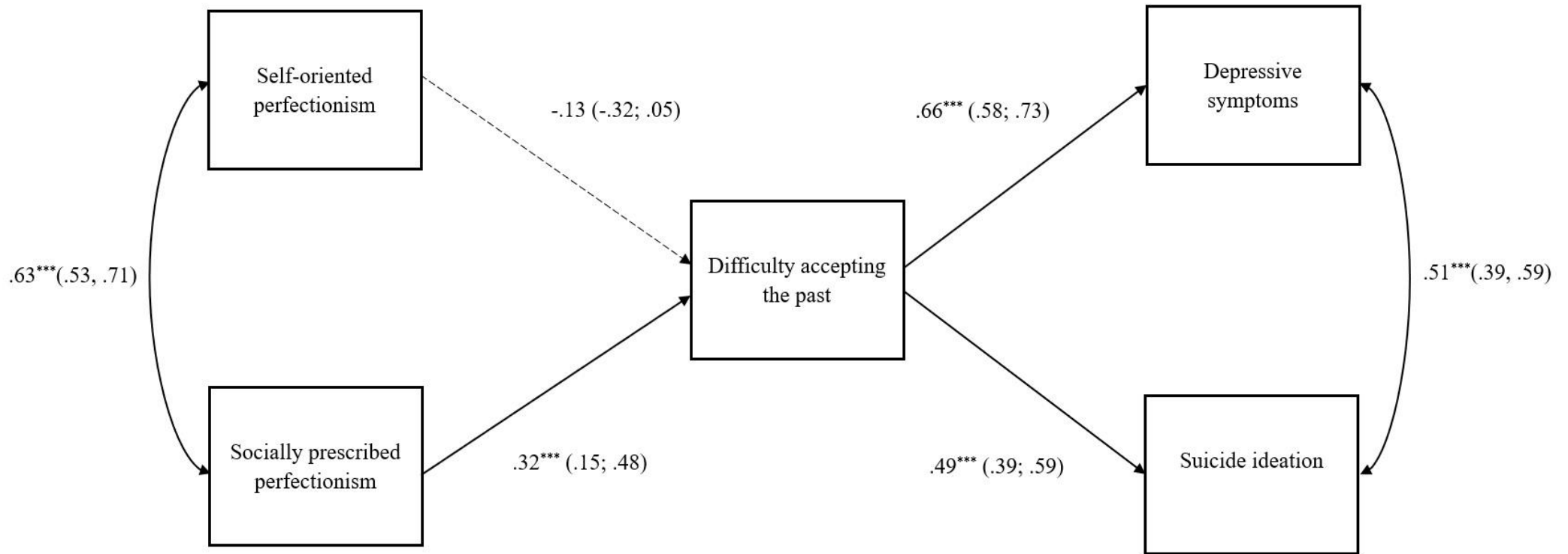
The same model was tested in both the university and community sample with the inclusion of age as a covariate, given that age was correlated with most variables in the community sample, and thus was considered a potential confound. In the university sample, as expected all paths were virtually identical when including age as a covariate. In the community sample, two paths differed with the inclusion of age as a covariate. For instance the indirect paths of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.02$

[95% CI -.07, .00],  $SE = .02$ ) and socially prescribed perfectionism on suicide ideation via mattering became non-significant ( $\beta = .03$  [95% CI -.00, .09],  $SE = .02$ ).



*Figure 6.1.* Path diagram depicting associations among variables for the **university sample**. The path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation were omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.05$  [95% CI  $-.17, .07$ ]. The path from self-oriented perfectionism to suicide ideation was  $\beta = .02$  [95% CI  $-.12, .15$ ]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .15^*$  [95% CI  $.03, .27$ ]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = .03$  [95% CI  $-.11, .17$ ]. All estimates are standardized.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.



*Figure 6.2.* Path diagram depicting associations among variables for the **community sample**. The path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation were omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.09$  [95% CI  $-.20, .03$ ]. The path from self-oriented perfectionism to suicide ideation was  $\beta = -.01$  [95% CI  $-.14, .11$ ]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .25^{***}$  [95% CI  $.12, .37$ ]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = .10$  [95% CI  $-.03, .23$ ]. All estimates are standardized.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.

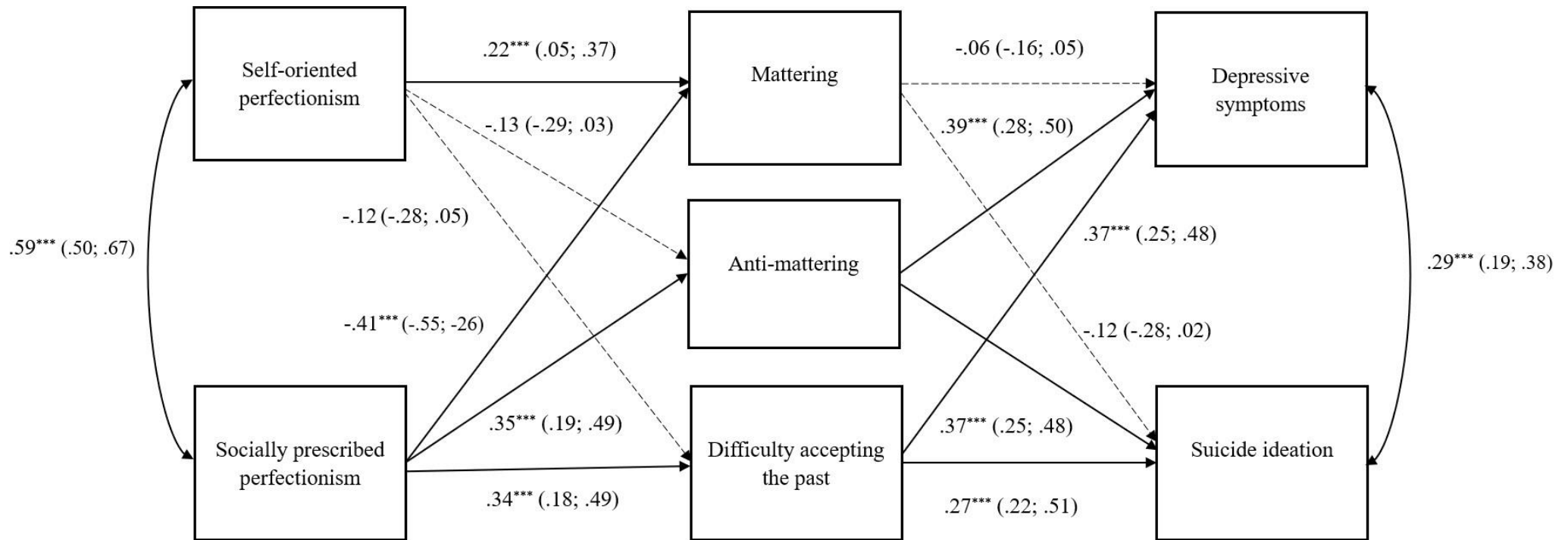


Figure 6.3

Path diagram depicting associations among variables for the **university sample**. Correlations among mediators, the path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation were omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.08$  [95% CI  $-.13, .10$ ]. The path from self-oriented perfectionism to suicide ideation was  $\beta = .05$  [95% CI  $-.08, .18$ ]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .08$  [95% CI  $-.04, .21$ ]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = -.03$  [95% CI  $-.17, .10$ ]. The correlation among mattering and anti-mattering was  $r = -.45^{***}$ . The correlation among mattering and difficulty accepting the past was  $r = -.48^{***}$ . The correlation among anti-mattering and difficulty accepting the past was  $r = .61^{***}$ . All estimates are standardized.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed.

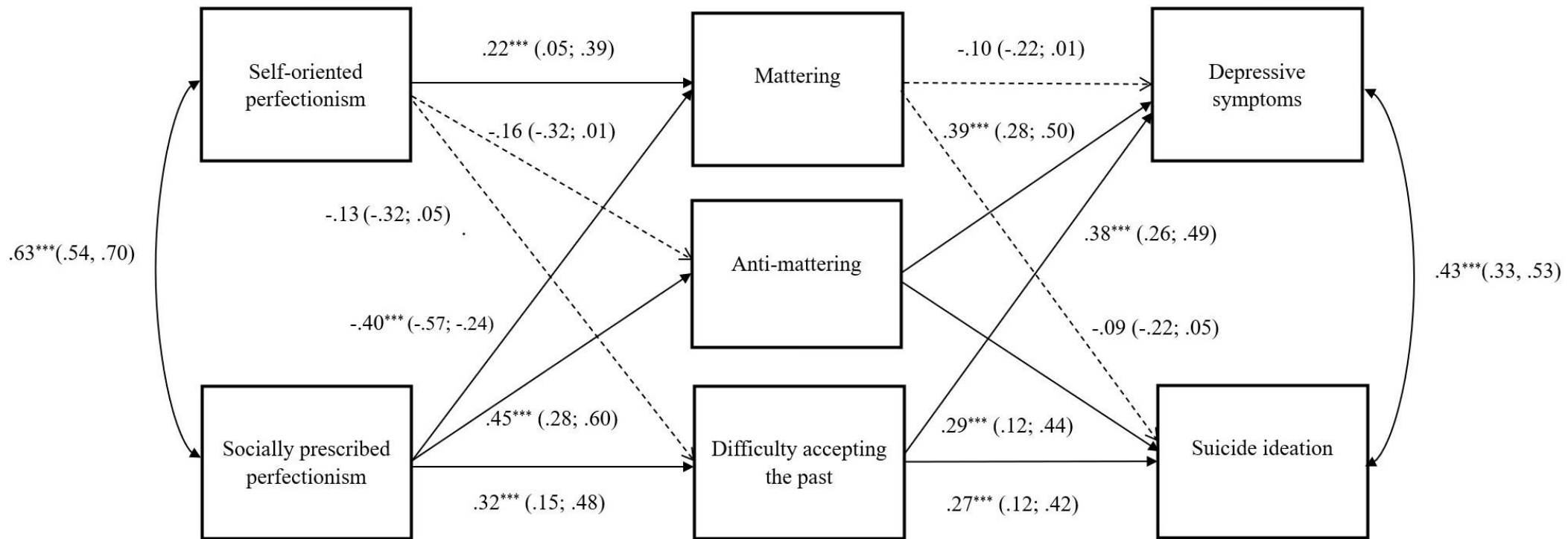


Figure 6.4

Path diagram depicting associations among variables for the **community sample**. Correlations among mediators, the path from self-oriented perfectionism to depressive symptoms, the path from self-oriented perfectionism to suicide ideation, the path from socially prescribed perfectionism to depressive symptoms, and the path from socially prescribed perfectionism to suicide ideation was omitted from the figure for clarity. The path from self-oriented perfectionism to depressive symptoms was  $\beta = -.04$  [95% CI -.15, .07]. The path from self-oriented perfectionism to suicide ideation was  $\beta = .03$  [95% CI -.10, .16]. The path from socially prescribed perfectionism to depressive symptoms was  $\beta = .12$  [95% CI .00, .24]. The path from socially prescribed perfectionism to suicide ideation was  $\beta = .01$  [95% CI -.13, .15]. The correlation among mattering and anti-mattering was  $r = -.54^{***}$ . The correlation among mattering and difficulty accepting the past was  $r = -.59^{***}$ . The correlation among anti-mattering and difficulty accepting the past was  $r = .60^{***}$ . All estimates are standardized.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed.

## 6.4 Discussion

Study three sought to extend research in two ways. First, while research has extended the PSDM to include suicide ideation (e.g., Robinson et al., 2022), no research has tested whether the EMPDS can be extended to include suicide ideation as an outcome. This study, then, is the first to extend the EMPDS to include suicide ideation as an outcome. Second, theoretical models which purport to explain the perfectionism-depressive symptoms link and the perfectionism-suicidality link (e.g., the PSDM and EMPDS) have, to date, been studied separately, which prevents evaluations of unique contributions. It is also important for research to compare competing explanatory models and to test the predictive ability of theoretical models. This study was the first to examine an integrated model combining the PSDM and the EMPDS.

In a test of the EMPDS, it was hypothesized that socially prescribed perfectionism would be indirectly associated with depressive symptoms and suicide ideation via difficulty accepting the past. In a test of the integrated model, it was hypothesized that socially prescribed perfectionism would be indirectly associated with depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past. Based on study one and two and prior research (e.g., Smith et al., 2020b), the role of self-oriented perfectionism and mattering were considered exploratory. In a test of the EMPDS, as expected, socially prescribed perfectionism indirectly predicted both depressive symptoms and suicide ideation via difficulty accepting the past in both the university and community sample. In the integrated model test, socially prescribed perfectionism indirectly predicted both depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past in both the university and community sample. Self-oriented perfectionism and socially prescribed perfectionism, however, indirectly predicted suicide ideation via mattering in the community sample only. No other relationships with mattering emerged as significant. Additionally, self-



oriented perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering, and difficulty accepting the past in the community sample only. No other relationships with self-oriented perfectionism emerged as significant.

*6.4.1 The mediated effects of perfectionism on depressive symptoms and suicide ideation through mattering, anti-mattering, and difficulty accepting the past.*

As expected, study three found support for depressive symptoms as part of the PSDM and EMPDS. The finding that socially prescribed perfectionism indirectly predicted depressive symptoms via anti-mattering is in line with theory (Flett, 2018b; Hewitt et al., 2006; Hewitt et al., 2017), research (e.g., Flett et al., 2012), and findings of study one and study two. The current findings suggest that perceiving others as demanding and critical, increases the sense of being treated unfairly and feeling insignificant. Given the interpersonal sensitivities of people higher in socially prescribed perfectionism, it is likely they will be particularly susceptible to the distress that results from not feeling cared for or cared about by others.

Findings revealed socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past in both the university and community sample. This finding emerged in both the EMPDS and the integrated model and aligns with broader literature suggesting that an inability to view the past as meaningful, satisfying, and coherent leads to poorer wellbeing (Erikson, 1950). Moreover, this finding aligns with research on the EMPDS (Graham et al., 2010; Sherry et al., 2015; Smith et al., 2020). Study three, thus, provides further evidence to suggest that socially prescribed perfectionism impedes upon the process of forming positive and meaningful representations of the past, and thus viewing past experiences as incoherent, dissatisfying, and meaningless can foster feelings which are depressogenic.

Study three also found support for the inclusion of suicide ideation within the PSDM. The finding that socially prescribed perfectionism indirectly predicted suicide ideation via mattering (in the community sample only) and anti-mattering across samples aligns with theory (Hewitt et al., 2006), research (Flett et al., 2012), and the cross-sectional findings from study one. After including suicide ideation in this model, findings add to the evidence which suggests the importance of including suicide ideation as an outcome in the PSDM. However, this finding contrasts against the longitudinal findings of study two, which suggest socially prescribed perfectionism does not predict suicide ideation when examined over time. Given these findings, it is important for future longitudinal research on the PSDM to include suicide ideation as an outcome variable to reach a more determinate conclusion regarding the role of suicidality in the PSDM.

For the first time, suicide ideation was included within a test of the EMPDS and integrated model combining the PSDM and EMPDS. Suicide ideation was found to be an important addition to the EMPDS in both the university and community sample. This finding aligns with theory (Graham et al., 2010) and research (Smith et al., 2020a) examining depressive symptoms within the EMPDS and suggestions that the EMPDS may extend to suicidality (Smith et al., 2020a). Findings suggest that perceiving excessive expectations and criticism from others may amplify perceptions of a view of the past as meaningless and unsatisfying. This bleak outlook on life may eventually generate thoughts of suicide. After including suicide ideation for the first time in the EMPDS, findings of the present study suggest that the EMPDS should be extended to include suicide ideation. However, it is not clear whether this finding will replicate when examined over time. Future research is required to test whether these findings replicate longitudinally.

In contrast to study one and two, self-oriented perfectionism indirectly predicted depressive symptoms via anti-mattering and suicide ideation via mattering and anti-mattering

in the community sample. Though it is not clear why this finding emerged as significant in the community sample only, it is possible that self-oriented perfectionism had a stronger relationship with markers of social disconnection in the community sample, compared to the university sample due to the higher mean age of the community sample. For instance, in a recent meta-analytic review, Smith et al. (2020c) found the perfectionistic strivings-social disconnection relationship to increase with age. This finding also complements literature suggesting that self-oriented perfectionism impedes mental health over time (Smith et al., 2019b). The findings of study three, thus, suggest that people higher in self-oriented perfectionism, may over time, generate social disconnection due to an excessive focus on agentic accomplishments at the expense of forming and maintaining close interpersonal relations with others (Sherry et al., 2016).

The finding that self-oriented perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past in the community sample was particularly surprising given that the EMPDS did not originally conceptualize self-oriented perfectionism as a key part of the EMPDS (Graham et al., 2010). In addition, prior research examining self-oriented perfectionism in the PSDM has found self-oriented perfectionism to indirectly predict depressive symptoms through rumination, but not difficulty accepting the past (Smith et al., 2020b). Given the findings of past research, these findings may have emerged as significant as rumination was not included in the model in the current study. Therefore, it is possible that the inclusion of rumination may render these relationships insignificant.

When contrasting the findings of the EMPDS and the integrated test, findings did not change across the two models in regard to the inclusion of difficulty accepting the past as a mediator. For instance, the finding that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past in the university

sample and the community sample emerged in both the EMPDS and integrated test. However, with the addition of the PSDM in the integrated test, changes in variance explained increased for both the university sample (9.8% for depressive symptoms and 5.4% for suicide ideation) and community sample (10.5% for depressive symptoms and 6.1% for suicide ideation). While findings did not differ between models in regard to the EMPDS, comparison of the models, still, help to determine differences in the predictive ability and variance explained between the EMPDS and integrated model.

The integrated model provided several key insights. In line with previous research on the PSDM and EMPDS (e.g., Smith et al., 2018b; Smith et al., 2020a), the integrated model suggests that socially prescribed perfectionism is a really important predictor and should continue to be included in future tests of these models. Moreover, like with anti-mattering, this study suggests that difficulty accepting the past is an important mediator of the perfectionism-depressive symptoms and perfectionism-suicide ideation relationship. Difficulty accepting the past appears to be just as important as anti-mattering. Despite this, it may be the case that more pronounced differences emerge between the PSDM, EMPDS and integrated model when examined longitudinally. Future research, then, is required to replicate these relationships in a robust longitudinal design.

## **6.5 Concluding remarks**

Study three examines relationships between perfectionism, depressive symptoms, and suicide ideation via mattering, anti-mattering, and difficulty accepting the past. Study three provided strongest support for the mediating role of anti-mattering and difficulty accepting the past in relationships between socially prescribed perfectionism and depressive symptoms, and socially prescribed perfectionism and suicide ideation. Based on the findings, the current study suggests that both the PSDM and EMPDS should be extended to suicidality. Findings

also advocate for future research to adopt more integrative models when examining depressive symptoms and suicide ideation.

## Chapter 7

Study four: A longitudinal test of an integrated model of the Perfectionism Social Disconnection Model and the Existential Model of Perfectionism and Depressive Symptoms.

*“Perhaps when we find ourselves wanting everything, it is because we are dangerously close to wanting nothing” – Sylvia Plath (Plath, 1963).*

### 7.1 Introduction

Study three extended research in two ways. First, the EMPDS had only examined depressive symptoms as an outcome, with no research examining suicide ideation as an outcome in this model. This study, then, was the first to extend the EMPDS to include suicide ideation as an outcome. Second, although research suggests difficulty accepting the past is a predictor of suicidality (e.g., Heisel et al., 2016) no research has examined this relationship longitudinally. This study was the first to do so. Third, theoretical models examining the relationship between perfectionism and depressive symptoms and perfectionism and suicide ideation have been examined in isolation, which have prevented evaluations of unique contributions. It is important for the PSDM and EMPDS to be integrated to compare the two competing explanatory models and to test their predictive ability. Study three addressed this limitation and was the first study to combine the PSDM and EMPDS in an integrated model.

In a test of the EMPDS, study three found socially prescribed perfectionism to indirectly predict depressive symptoms and suicide ideation via difficulty accepting the past in a university and community sample. Furthermore, in a separate integrated test of the PSDM and EMPDS, socially prescribed perfectionism was found to indirectly predict both depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past in both a university and community sample. In addition, self-oriented perfectionism and socially prescribed perfectionism indirectly predicted suicide ideation via mattering in the

community sample only. Despite these notable advancements, study three was limited by its cross-sectional design. As such, a robust longitudinal examination of the integrated model combining the PSDM and EMPDS is warranted.

### *7.1.1 Difficulty accepting the past and suicide ideation*

To date, no research has examined the relationship between difficulty accepting the past and suicide ideation longitudinally. However, research examining other existential markers are indicative of this relationship. In a longitudinal study, for instance, O'Connor et al. (2007) examined main and interactive effects of socially prescribed perfectionism and future thinking on hopelessness and suicide ideation in self-harm patients following a suicidal episode. Hierarchical regression analyses revealed that no main effects emerged for socially prescribed perfectionism and suicide ideation, and future positive thinking and suicide ideation. However, the authors found greater socially prescribed perfectionism to interact with lower future positive thinking (but not future negative thinking) to predict hopelessness and suicide ideation two months later among suicidal self-harmers with a history of repetitive self-harm. No significant interactive effects emerged for the group of non-repetitive self-harmers. Findings demonstrate that the emergence of suicide ideation is dependent upon an interaction between socially prescribed perfectionism and future positive thinking.

Kleiman and Beaver (2013) examined the search for and presence of meaning in life as protective factors against suicide ideation and lifetime odds of a suicide attempt in undergraduates over an eight-week time period. Kleiman and Beaver (2013) found presence of meaning in life to predict decreased suicide ideation over time. Unexpectedly, the authors also found search for meaning in life to predict decreased suicide ideation over time. Furthermore, presence of meaning in life also predicted lower lifetime odds of a suicide attempt. In addition, the search for, but not presence of meaning in life was also found to mediate the relationship between interpersonal psychological theory variables (i.e., thwarted

belongingness and perceived burdensomeness) and suicide ideation. The findings highlight the importance of meaning in life in attenuating suicide risk.

In a similar study, Heisel et al. (2016) examined reasons for living and meaning in life as protective factors for suicidality over two years in a sample of community-residing older adults. The authors found reasons for living and meaning in life to inversely predict suicide ideation two years later, controlling for age, sex, depressive symptom severity, and loneliness. Meaning in life was also found to mediate the relationship between reasons for living and suicide ideation. Given these associations, it is likely that other markers of existentialism may emerge as risk or protective factors for suicidality. In regard to the present study, it can be expected that difficulty accepting the past would predict increased suicide ideation over time. It can also be expected that the EMPDS will extend to suicidality when examined longitudinally.

### *7.1.2 Advancing research on the EMPDS*

Most studies on the EMPDS have been conducted cross-sectionally (e.g., Park & Joeng, 2016; Sherry et al., 2015; Smith et al., 2020b). To date, only two longitudinal studies exist examining the EMPDS (Graham et al., 2010; Smith et al., 2020a). In the first longitudinal study, Graham et al. (2010) conducted a test of the EMPDS using a four-week, four-wave design in undergraduates. Specifically, Graham et al. (2010) examined whether perfectionistic concerns (formed of socially prescribed perfectionism, concern over mistakes, and doubts about actions) predicts depressive symptoms through catastrophic thinking and difficulty accepting the past. As expected, perfectionistic concerns were found to predict depressive symptoms through catastrophic thinking and difficulty accepting the past. In addition, findings revealed that perfectionistic concerns are more an antecedent, rather than a complication of catastrophic thinking and difficulty accepting the past. Findings suggest that people high in perfectionistic concerns have a tendency to not only catastrophize their life



experiences, but also struggle to accept their life experiences by not being able to form a sense of direction and purpose.

In the second longitudinal study, Smith et al. (2020a) built upon Sherry and colleagues (2015) cross-sectional study. The authors conducted the first longitudinal moderated-mediation test of the EMPDS in a one-month two-wave design in community adults. The authors examined whether socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past. Akin to Sherry et al. (2015), they also examined whether this mediation effect was conditional upon levels of socially prescribed perfectionism. Findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past one-month later. This relationship was also found to be moderated by socially prescribed perfectionism. While longitudinal research on the EMPDS is promising, more research examining these relationships longitudinally is warranted.

### *7.1.3 Insights from an integrated model*

While prior longitudinal research on the PSDM and EMPDS is informative, it is important to integrate the PSDM and EMPDS together in a longitudinal design. This is because integrating these explanatory models may reveal key differences in the predictive ability of each model. In this regard, this integrated model may determine whether one model is superior when pitted against the other model, or whether models perform better in particular samples. If both models emerge as important, this may suggest a need for more integrated comprehensive models to build upon existing models that focus on a specific area (e.g., social disconnection or existentialism). Integrating models may also have important implications for practice, in that an integrated model may highlight which mediators are strongest and should be targeted to prevent depressive symptoms or suicide ideation.

#### 7.1.4 Advancing methodological limitations on the PSDM and EMPDS

While longitudinal studies on the PSDM (e.g., Sherry et al., 2013a; Smith et al., 2017b; Smith et al., 2018b) and the EMPDS (Graham et al., 2010; Smith et al., 2020a) exist, most studies on the PSDM and EMPDS are formed of cross-sectional or two-wave longitudinal designs (Sherry et al., 2015; Smith et al., 2020a; Smith et al., 2017b). As discussed in Chapter five, however, cross-sectional designs are limited as they cannot disentangle the direction of relationships or provide a proper test of the proposed mediation and underlying mechanisms (Cole & Maxwell, 2003). Longitudinal designs are warranted as they provide stronger inferences of causality and consider baseline levels of outcome variables. Controlling for baseline levels of outcome variables is important because future depressive symptoms are strongly predicted by past depressive symptoms (e.g., Judd et al., 2002) and future suicide ideation is strongly predicted by past suicide ideation (e.g., Joiner, 2005).

Two-wave longitudinal designs, however, are incapable of properly examining mediation because either predictor and mediator variables or mediator and outcome variables are examined concurrently and are therefore temporally confounded. In this regard, prior levels of mediator variables cannot be controlled for (Cole & Maxwell, 2003). Two-wave longitudinal tests of mediation, then, can often lead to erroneous conclusions. Given that mediation of X predicting Y is formed of two causal relations (i.e.,  $X \rightarrow M$ ,  $M \rightarrow Y$ ), three-wave longitudinal designs are warranted to examine predictor, mediator and outcome variables at separate timepoints (Cole & Maxwell, 2003). As such, the present study expands upon existing limitations by conducting a robust three-wave longitudinal design, controlling for baseline levels of depressive symptoms and suicide ideation.

Most research on the PSDM and EMPDS, to date, has been examined using short-term longitudinal designs spanning several weeks (e.g., Graham et al., 2010; Sherry et al.,

2013a; Smith et al., 2020a). Short-term longitudinal designs are considered well-suited to assessing more dynamic changes in variables (Graham et al., 2010). In the current study, a short-term longitudinal design with several waves was adopted as it is considered better suited in assessing short-term patterns of mattering, anti-mattering, difficulty accepting the past, and mental health outcomes. This short-term design may also increase reliability by assessing events closer to their occurrence, minimising recall bias (Bolger et al., 2003). Drawing on these methodological considerations, study four adopts a short-term three-wave longitudinal design with a measurement interval of three weeks between each wave.

#### *7.1.5 The present study*

Study four extends existing research on the PSDM in three respects. First, all longitudinal studies of the EMPDS focus on depressive symptoms and have overlooked suicide ideation (e.g., Graham et al., 2010). However, it is important to determine whether the EMPDS extends to include suicide ideation when examined in a more robust longitudinal design. Second, although research suggests difficulty accepting the past is an important risk factor for suicidality (e.g., Heisel et al., 2016) no research, to date, has examined the relationship between difficulty accepting the past and suicide ideation longitudinally. It is important to determine whether difficulty accepting the past emerges as a risk factor when examined in a longitudinal design. Third, to date, no research had conducted a longitudinal integrated test of the PSDM and EMPDS. Providing a longitudinal test of the integrated model may better determine the predictive ability of the PSDM and EMPDS. Study four, thus, addresses all of these limitations by examining suicide ideation as an outcome in the PSDM and EMPDS alongside depressive symptoms and mattering, anti-mattering, and difficulty accepting the past as mediators in a robust three-wave longitudinal design, controlling for baseline depressive symptoms and suicide ideation.

### 7.1.6 *The purpose of study four*

The purpose of study four was to extend research in three ways: (1) to conduct the first longitudinal test of the EMPDS which includes suicide ideation as an outcome (2) to conduct the first longitudinal test of difficulty accepting and suicide ideation and (3) to conduct the first longitudinal integrated model of the PSDM and EMPDS. The main purpose of study four was to methodologically advance research by conducting the first longitudinal test of the EMPDS with the inclusion of suicide ideation as an outcome. Study four builds upon study three by conducting a robust three-wave longitudinal design to test an integrated model of the PSDM and EMPDS. In a test of the EMPDS only, it was hypothesized that socially prescribed perfectionism (Wave 1) would indirectly predict depressive symptoms and suicide ideation (Wave 3) via difficulty accepting the past (Wave 2). In a test of the integrated model, it was hypothesized that socially prescribed perfectionism (Wave 1) will confer vulnerability to depressive symptoms and suicide ideation (Wave 3) via anti-mattering and difficulty accepting the past (Wave 2), when controlling for baseline depressive symptoms and suicide ideation. Based on inconsistent findings in studies one to three, the inclusion of self-oriented perfectionism and mattering was considered exploratory.

## **7.2 Method**

### 7.2.1 *Participants*

Study four has two samples. The first sample comprised of 240 university students (70.0% female;  $M_{\text{age}} = 20.15$  years,  $SD = 2.47$ ) recruited from sport and psychology modules at York St John University ( $N = 206$ ) and from a psychology module at the University of West of Scotland ( $N = 34$ ) in the United Kingdom. University students were predominantly White British (90.8%) and were undergraduates in their first (47.5%), second (27.5%), third (10.8%), or fourth (14.2%) year of university. The second sample comprised of 250 community adults from the United Kingdom (72.1% female; 2 undisclosed;  $M_{\text{age}} = 38.34$

years,  $SD = 12.61$ ) recruited from Prolific Academic. The community sample were also predominantly White British (87.2%).

### 7.2.2 Procedure

Preceding data collection, the study was approved by York St John university's cross-school research ethics committee (see Appendix A.4; Ethics reference code: STHEC0003). For the university sample, module leaders were contacted to gain access to the undergraduate students. Participants provided informed consent prior to participating (see Appendix B.9). The university sample completed a pen-and-paper questionnaire containing the study variables at the beginning or end of a seminar or lecture on three occasions separated by approximately three weeks. Questionnaires were distributed within seminars and took approximately 15 minutes to complete. To ensure anonymity, undergraduate students were asked to create their own unique ID based on their date of birth in the format DD/MM and the last three digits of their postcode. Students were made aware that participation in the study was voluntary and were provided with a debriefing sheet following completion of the study (see Appendix B.10).

The community sample completed an online questionnaire on Qualtrics, via Prolific Academic on three occasions separated by three weeks. For the community sample, only participants from the United Kingdom with 100 previous submissions, a 95% or above approval rate on Prolific, and who had not participated in study one, two or three were invited to partake in the study. Upon signing up to Prolific, participants were given a Prolific ID which allowed them to remain anonymous. Those who met the eligibility criteria were recruited on a first-come first-served basis. All participants provided informed consent. As a reward for their time, participants were paid £0.85 to complete the online questionnaire.

While it was possible that the lack of finding with suicide ideation in study two may have been attributed to the timeframe being too short to capture changes in suicide ideation,

the timeframe was kept the same as study two (a three-wave longitudinal design separated by three weeks). This decision was chosen for three reasons. First, this design was considered most feasible, so that data collection could fit effectively within a university semester (spanning twelve weeks) and to collect data in seminars which were the least disruptive for students. Second, the chosen timeframe was based on the majority of studies in the PSDM and EMPDS utilising a relatively short timeframe (e.g., Graham et al., 2010; Sherry et al., 2013), and the notion that mattering and anti-mattering are somewhat state-like and thus longer timeframes would miss more dynamic changes in these variables (Flett, 2018). Third, this design allows direct comparisons to be made between study two and study four in regard to the study findings and the addition of difficulty accepting the past in the integrative model.

### *7.2.3 Measures*

Measures employed in the study are identical to the measures in study three (see Chapter four for perfectionism, mattering, anti-mattering, and depressive symptoms measures; see Chapter five for the suicide ideation measure; see Chapter six for the difficulty accepting the past measure). Perfectionism was measured using the HF-MPS-SF (Hewitt et al., 2008; see Appendix C.2). Mattering was measured using the GMS (Rosenberg & McCullough, 1981; see Appendix C.3). Anti-mattering was measured using the AMS (see Flett, 2018b; Flett et al., 2022b; see Appendix C.4). Difficulty accepting the past was measured using the ACPAST (Santor & Zuroff, 1994; see Appendix C.5). Depressive symptoms were measured using the CES-D-SF (Cole et al., 2004; see Appendix C.6). Suicide ideation was measured using the ASIQ (Reynolds, 1991; see Appendix C.8).

### *7.2.4 Dropout rates*

Demographics were recorded in Wave 1. Of the 240 university students recruited at Time 1, 154 participants (64.2%) completed measures at Time 2, and 108 participants (45.0%) completed measures at Time 3. The average time lag between Time 1 and Time 2

was 21.00 days ( $SD = 0.00$ ) and between Time 2 and Time 3 was 23.65 days ( $SD = 5.71$ ). For the community sample, 250 participants (100%) completed Wave 1, 225 of 250 (90.00%) completed Wave 2, and 217 of 250 (86.80%) completed Wave 3. The average time lag between Time 1 and Time 2 was 21.08 days ( $SD = 0.32$ ) and between Time 2 and Time 3 was 21.15 days ( $SD = 0.47$ ).

#### 7.2.5 Data analytic strategy

Preliminary analysis involved examining missing data, detecting multivariate outliers and testing reliability of the measures. The primary analyses involved calculating descriptive statistics and bivariate correlations. As with prior studies of the thesis, effect sizes were determined using Cohen's (1992) guidelines for small, medium, and large effects ( $r = .10, .30, .50$ ). Following this, a series of independent samples  $t$ -tests were run to determine whether participants who completed all data points (completers) differed on the study variables at baseline from participants who dropped out of the study at Time 2 or Time 3 (non-completers). Independent samples  $t$ -tests were then conducted to determine whether study variables significantly differed across the university student and community sample.

First, a model examining the EMPDS was tested. Second, an integrated model examining the PSDM and EMPDS was tested. Both models were analysed using path analysis with full information maximum likelihood in Mplus version 8.0 (Muthén & Muthén, 1998-2017). The significance of indirect effects was determined using bias-corrected bootstrapping with 20,000 resamples (Shrout & Bolger, 2002). Bias-corrected bootstrapping was used as a non-parametric alternative as indirect effects tend to have distributions skewed away from zero (Shrout & Bolger, 2002). If the 95% bias-corrected bootstrapped confidence interval for an indirect effect does not include zero within its upper and lower bounds, it infers mediation.

### 7.2.6 Preliminary Analysis

For the university sample, 0.08% to 0.27% of data was missing across waves. Little's (1988) MCAR test provided evidence that the data was missing completely at random  $\chi^2(658) = 659.012, p = .174$ . For the university sample, missing data was handled using full information maximum likelihood. For the community sample, there was no missing data. In this study one participant was excluded from the university sample and six participants were excluded from the community sample who exhibited a Mahalanobis distance above the critical value of  $\chi^2(24) = 51.179, p < .001$ . Following the removal of multivariate outliers, the final sample comprised of 239 university students (70.0% female;  $M_{\text{age}} = 20.15$  years,  $SD = 2.47$ ) and 244 community adults (72.1% female; 1 undisclosed;  $M_{\text{age}} = 38.47$  years,  $SD = 12.68$ ).

To assess whether participants who completed all data points (completers) differed from participants who dropped out of the study at Time 2 or Time 3 (non-completers) on levels of perfectionism, mattering, anti-mattering, difficulty accept the past, depressive symptoms, and suicide ideation at baseline, a series of independent samples *t*-tests were run. Results revealed no significant differences in study variables between completers and non-completers.

## 7.3 Results

### 7.3.1 Descriptive statistics

Means, standard deviations, Cronbach's alphas, and bivariate correlations are in Table 7.1. Cronbach's alphas across the university sample ( $\alpha$  range = .83 to .98) and the community sample ( $\alpha$  range = .81 to .98) were acceptable. Three and six-week test-retest reliabilities were strong ranging from  $r = .66$  to  $.86$  in the university sample and  $r = .73$  to  $.93$  in the community sample. In the university sample, age was uncorrelated with all variables. In the community sample, age was correlated with most variables of interest, with the exception of



self-oriented perfectionism and suicide ideation at Time 1, and mattering at Time 2. For instance, age displayed a small negative correlation with socially prescribed perfectionism at Time 1 and small-to-moderate negative correlations with depressive symptoms at Time 1, anti-mattering and difficulty accepting the past at Time 2, and depressive symptoms and suicide ideation at Time 3.

In the university sample, self-oriented perfectionism at Time 1 displayed a small-to-moderate positive relationship with mattering, and a non-significant relationship with anti-mattering and difficulty accepting the past at Time 2. Socially prescribed perfectionism at Time 1 displayed a nonsignificant relationship with mattering, a moderate-to-large positive relationship with anti-mattering, and a small-to-moderate positive relationship with difficulty accepting the past at Time 2. Mattering at Time 2 displayed a small-to-moderate negative relationship with depressive symptoms and suicide ideation at Time 3, whereas anti-mattering and difficulty accepting the past at Time 2 displayed a large positive relationship with depressive symptoms and suicide ideation at Time 3. Self-oriented perfectionism at Time 1 displayed a non-significant relationship with depressive symptoms and suicide ideation at Time 3. By contrast, socially prescribed perfectionism at Time 1 displayed moderate-to-large relationships with depressive symptoms and suicide ideation at Time 3 (see Table 7.1).

In the community sample, self-oriented perfectionism at Time 1 displayed a small-to-moderate relationship with anti-mattering and nonsignificant relationships with mattering and difficulty accepting the past at Time 2. Whereas socially prescribed perfectionism at Time 1 displayed a small-to-moderate negative relationship with mattering, a moderate positive relationship with anti-mattering and small-to-moderate positive relationship with difficulty accepting the past at Time 2. Mattering at Time 2 displayed a large negative relationship with depressive symptoms and a moderate-to-large relationship with suicide ideation at Time 3. In addition, anti-mattering displayed a large positive relationship with depressive symptoms and

a moderate-to large positive relationship with suicide ideation at Time 3 and difficulty accepting the past at Time 2 displayed a large positive relationship with depressive symptoms and suicide ideation at Time 3. Self-oriented perfectionism at Time 1 displayed a nonsignificant relationship with depressive symptoms and a small negative relationship with suicide ideation at Time 3. Socially prescribed perfectionism at Time 1 displayed a small-to-moderate relationship with depressive symptoms and a nonsignificant relationship with suicide ideation at Time 3 (see Table 7.1).

Independent samples t-tests were conducted to compare samples on the key variables of interest. Compared with the university sample, the community sample exhibited significantly higher levels of suicide ideation at Time 1 ( $t(476) = -1.99, p < .05$ ). Samples did not significantly differ on any other variables of interest.

Table 7.1. *Bivariate correlations, means, standard deviations, and alpha reliabilities in the university student and community sample*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Mean	<i>SD</i>	$\alpha$
<b>Time 1</b>																												
1. Age	—	-.11	-.18*	-.02	.17**	-.17**	-.08	-.23**	-.11	-.13	-.30**	-.07	.10	-.18**	-.15*	-.19*	-.14*	-.08	-.22**	-.02	.12	-.18**	-.10	-.20**	-.14*	—	—	—
2. SOP	.06	—	.53**	.59**	-.04	.11	.03	.03	-.13*	<b>.81**</b>	.43**	.53**	-.02	.15*	-.03	-.00	-.06	<b>.80**</b>	.50**	.53**	-.05	.16*	.01	-.05	-.14*	4.27	1.43	.93
3. SPP	.01	.56**	—	.53**	-.17**	.26**	.23**	.20**	.08	.47**	<b>.80**</b>	.50**	-.15*	.29**	.20**	.21**	.17*	.47**	<b>.76**</b>	.46**	-.12	.30**	.24**	.24**	.11	3.98	1.22	.84
4. OOP	.11	.42**	.60**	—	-.03	.10	.09	.08	-.07	.51**	.47**	<b>.81**</b>	-.02	.21**	.07	.08	-.03	.59**	.57**	<b>.81**</b>	-.00	.18**	.09	.04	-.06	3.94	1.11	.81
5. MAT	.03	.14*	-.09	.08	—	-.63**	-.56**	-.59**	-.47**	-.05	-.22**	-.02	<b>.78**</b>	-.58**	-.56**	-.57**	-.47**	-.01	-.19**	-.10	<b>.78**</b>	-.56**	-.57**	-.55**	-.47**	2.71	0.73	.87
6. ANTI	.00	.05	.32**	.14*	-.45**	—	.62**	.69**	.49**	.10	.29**	.08	-.61**	<b>.80**</b>	.58**	.59**	.50**	.07	.23**	.09	-.61**	<b>.75**</b>	.57**	.56**	.46**	2.19	0.83	.92
7. DATP	.01	.02	.29**	.26**	-.37**	.58**	—	.73**	.58**	.02	.25**	.09	-.54**	.59**	<b>.90**</b>	.67**	.60**	.02	.21**	.10	-.50**	.60**	<b>.89**</b>	.69**	.58**	2.85	0.79	.92
8. DEP	.01	.02	.25**	.21**	-.50**	.70**	.72**	—	.63**	.05	.27**	.05	-.59**	.67**	.68**	<b>.84**</b>	.63**	.01	.15*	.10	-.55**	.63**	.67**	<b>.80**</b>	.60**	1.10	0.64	.89
9. SI	-.00	.02	.20**	.09	-.37**	.49**	.56**	.63**	—	-.02	.09	-.03	-.45**	.46**	.58**	.57**	<b>.90**</b>	-.05	.07	.01	-.49**	.47**	.59**	.55**	<b>.87**</b>	0.67	0.81	.98
<b>Time 2</b>																												
10. SOP	.14	<b>.80**</b>	.51**	.44**	.05	.25**	.15	.16	.13	—	.51**	.57**	.03	.09	.01	-.02	-.01	<b>.83**</b>	.51**	.54**	-.02	.15*	.03	-.05	-.05	4.31	1.50	.94
11. SPP	.13	.52**	<b>.78**</b>	.54**	-.08	.39**	.24**	.23**	.15	.67**	—	.55**	-.18**	.32**	.25**	.22**	.14*	.46**	<b>.82**</b>	.47**	-.15*	.32**	.27**	.26**	.11	3.96	1.28	.86
12. OOP	.16*	.44**	.51**	<b>.72**</b>	.04	.11	.23**	.11	.16	.51**	.60**	—	.04	.14*	.09	.00	-.01	.58**	.58**	<b>.80**</b>	.05	.09	.09	-.01	-.03	4.02	1.16	.84
13. MAT	.10	.17*	-.06	.02	<b>.75**</b>	-.36**	-.30**	-.36**	-.31**	.09	-.02	.06	—	-.62**	-.55**	-.56**	-.44**	.00	-.16*	-.04	<b>.82**</b>	-.56**	-.56**	-.55**	-.47**	2.80	0.68	.86
14. ANTI	-.04	.16	.37**	.24**	-.45**	<b>.69**</b>	.47**	.57**	.52**	.23**	.33**	.18*	-.39**	—	.58**	.65**	.46**	.11	.28**	.16*	-.60**	<b>.73**</b>	.55**	.58**	.45**	2.16	0.80	.91
15. DATP	.03	.06	.27**	.32**	-.35**	.42**	<b>.81**</b>	.58**	.45**	.13	.23**	.23**	-.36**	.45**	—	.70**	.58**	-.01	.23**	.08	-.54**	.66**	<b>.93**</b>	.72**	.62**	2.82	0.79	.92
16. DEP	.04	.05	.25**	.18*	-.44**	.57**	.60**	<b>.79**</b>	.58**	.15	.20*	.07	-.42**	.58**	.60**	—	.59**	-.06	.14*	.03	-.52**	.62**	.67**	<b>.87**</b>	.60**	1.03	0.63	.89
17. SI	-.05	.06	.27**	.19**	-.38**	.46**	.50**	.58**	<b>.86**</b>	.10	.14	.11	-.32**	.56**	.47**	.56**	—	-.01	.09	.00	-.48**	.49**	.59**	.61**	<b>.92**</b>	0.65	0.78	.98
<b>Time 3</b>																												
18. SOP	-.03	<b>.73**</b>	.56**	.46**	.07	.20*	.22*	.16	.11	<b>.79**</b>	.60**	.49**	.23*	.18	.09	.06	.10	—	.57**	.63**	.02	.12	-.02	-.07	-.05	4.29	1.49	.94
19. SPP	.00	.48**	<b>.73**</b>	.49**	-.05	.33**	.31*	.22*	.23*	.61**	<b>.79**</b>	.47**	.06	.34**	.28**	.25*	.25*	.76**	—	.59**	-.12	.34**	.25**	.19**	.09	4.00	1.29	.86
20. OOP	-.02	.37**	.50**	<b>.67**</b>	.04	.15	.20*	.09	.24*	.48	.47**	<b>.72**</b>	.13	.15	.21*	.15	.26*	.57**	.63**	—	-.04	.19**	.10	.06	.03	3.91	1.22	.86
21. MAT	.09	.10	-.15	-.02	<b>.74**</b>	-.42**	-.34**	-.42**	-.42**	-.02	-.13	.05	<b>.82**</b>	-.39**	-.27*	-.51**	-.32**	.08	-.06	.00	—	-.57**	-.56**	-.56**	-.48**	2.74	0.70	.88
22. ANTI	.02	.03	.34**	.12	-.29**	<b>.66**</b>	.43**	.56**	.46**	.24*	.37**	.01	-.30**	<b>.74**</b>	.31**	.61**	.46**	.17	.32**	.14	-.29**	—	.68**	.68**	.53**	2.17	0.80	.92
23. DATP	.08	.06	.37**	.25**	-.35**	.46**	<b>.82**</b>	.57**	.56**	.24*	.34**	.24*	-.23*	.42**	<b>.82**</b>	.56**	.53**	.28**	.42**	.29**	-.35**	.47**	—	.72**	.60**	2.81	0.86	.93
24. DEP	.11	.02	.33**	.08	-.41**	.53**	.60**	<b>.71**</b>	.59**	.17	.31**	-.08	-.23*	.53**	.52**	<b>.74**</b>	.59**	.16	.30**	.04	-.46**	.56**	.68**	—	.65**	1.02	0.68	.90
25. SI	-.10	.01	.36**	.27**	-.31**	.39**	.55**	.50**	<b>.69**</b>	.02	.16	.08	-.21*	.54**	.50**	.56**	<b>.79**</b>	.13	.31**	.29**	-.23*	.54**	.60**	.60**	—	0.71	0.90	.98
Mean ( <i>Item level</i> )	—	4.42	3.88	3.19	2.80	2.21	2.68	1.15	0.52	4.32	3.83	3.33	2.72	2.13	2.68	1.18	0.50	4.25	3.92	3.54	2.71	2.17	2.59	1.06	0.59	—	—	—
<i>SD</i>	—	1.35	1.22	1.18	0.62	0.75	0.69	0.58	0.82	1.27	1.29	1.15	0.66	0.72	0.65	0.54	0.73	1.54	1.36	1.25	0.67	0.75	0.70	0.55	0.85	—	—	—
$\alpha$	—	.93	.84	.83	.83	.87	.89	.85	.98	.93	.89	.84	.87	.90	.89	.83	.98	.95	.90	.88	.89	.90	.91	.86	.98	—	—	—

Note. SOP = Self-oriented perfectionism; SPP = Socially prescribed perfectionism; OOP = Other-oriented perfectionism; MAT = Mattering; ANTI = Anti-mattering; DATP = Difficulty accepting the past; DEP = Depressive symptoms; SI = Suicide ideation. The university sample is presented below the diagonal and the community sample is presented above the diagonal. Test-retest correlations are in bold. Pairwise deletion. \* $p < .05$ ; \*\* $p < .01$ , two-tailed.

### 7.3.2 Path Analysis

#### 7.3.2.1 University sample – EMPDS only

Baseline levels of depressive symptoms and suicide ideation were controlled for across all results. The indirect effect of self-oriented perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.06, .01$ ],  $SE = .02$ ) was non-significant. The indirect effect of self-oriented perfectionism on suicide ideation via difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.07, .01$ ],  $SE = .02$ ) was also non-significant. The indirect effect of socially prescribed perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = .02$  [95% CI  $-.00, .07$ ],  $SE = .02$ ) was non-significant. In addition, the indirect effect of socially prescribed perfectionism on suicide ideation via difficulty accepting the past ( $\beta = .02$  [95% CI  $-.00, .10$ ],  $SE = .02$ ) was non-significant (see Figure 7.1).

#### 7.3.2.2 Community sample – EMPDS only

As with the university sample, baseline levels of depressive symptoms and suicide ideation were controlled for across all results. The indirect effect of self-oriented perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = -.03$  [95% CI  $-.07, .00$ ],  $SE = .02$ ) was non-significant. The indirect effect of self-oriented perfectionism on suicide ideation via difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.04, .00$ ],  $SE = .01$ ) was also non-significant. However, the indirect effect of socially prescribed perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = .03$  [95% CI  $.00, .08$ ],  $SE = .02$ ) was significant. In addition, the total indirect effect of socially prescribed perfectionism on suicide ideation via difficulty accepting the past ( $\beta = .02$  [95% CI  $.00, .04$ ],  $SE = .01$ ) was significant (see Figure 7.2).

#### 7.3.2.3 University sample – Integrated model (PSDM and EMPDS)

After controlling for baseline levels of depressive symptoms and suicide ideation, the following results emerged. The indirect effect of self-oriented perfectionism on depressive

symptoms via mattering ( $\beta = .02$  [95% CI  $-.02, .08$ ],  $SE = .03$ ), anti-mattering ( $\beta = .00$  [95% CI  $-.02, .04$ ],  $SE = .01$ ), and difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.06, .01$ ],  $SE = .02$ ) was non-significant. Likewise, the indirect effect of self-oriented perfectionism on suicide ideation via anti-mattering ( $\beta = .00$  [95% CI  $-.04, .07$ ],  $SE = .02$ ) and difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.07, .01$ ],  $SE = .02$ ) was also non-significant. However, the total indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = .06$  [95% CI  $.01, .18$ ],  $SE = .04$ ) was significant.

The indirect effect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = -.00$  [95% CI  $-.05, .01$ ],  $SE = .01$ ), anti-mattering ( $\beta = .02$  [95% CI  $-.01, .10$ ],  $SE = .03$ ), and difficulty accepting the past ( $\beta = .02$  [95% CI  $-.00, .07$ ],  $SE = .02$ ) was non-significant. In addition, the total indirect effect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = -.01$  [95% CI  $-.07, .02$ ],  $SE = .02$ ) and difficulty accepting the past ( $\beta = .02$  [95% CI  $-.00, .09$ ],  $SE = .02$ ) was non-significant. However, the indirect effect of socially prescribed perfectionism on suicide ideation via anti-mattering ( $\beta = .06$  [95% CI  $.01, .17$ ],  $SE = .04$ ) was significant (see Figure 7.3).

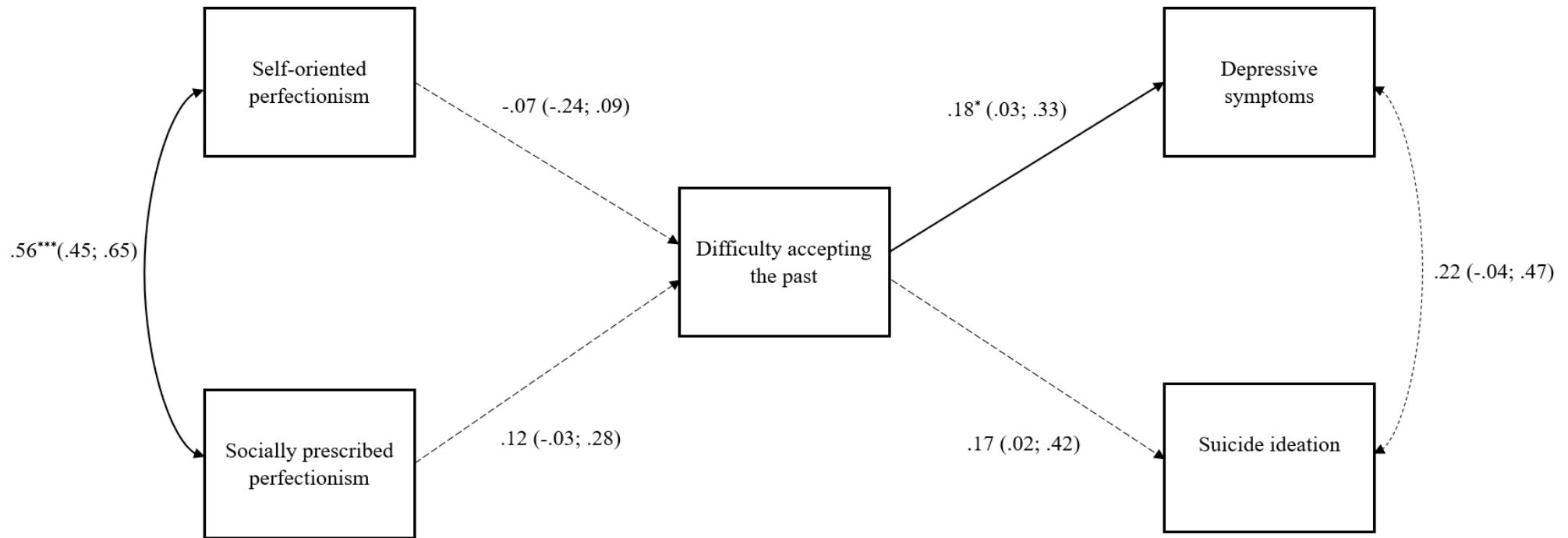
#### 7.3.2.4 Community sample – Integrated model (PSDM and EMPDS)

The indirect effect of self-oriented perfectionism on depressive symptoms via mattering ( $\beta = -.00$  [95% CI  $-.01, .00$ ],  $SE = .01$ ), anti-mattering ( $\beta = -.00$  [95% CI  $-.01, .00$ ],  $SE = .01$ ), and difficulty accepting the past ( $\beta = -.03$  [95% CI  $-.03, .00$ ],  $SE = .02$ ) was non-significant. Likewise, the indirect effect of self-oriented perfectionism on suicide ideation via mattering ( $\beta = -.00$  [95% CI  $-.01, .00$ ],  $SE = .01$ ), anti-mattering ( $\beta = -.00$  [95% CI  $-.02, .00$ ],  $SE = .01$ ), and difficulty accepting the past ( $\beta = -.01$  [95% CI  $-.02, .00$ ],  $SE = .01$ ) was also non-significant. In addition, the indirect of socially prescribed perfectionism on depressive symptoms via mattering ( $\beta = .00$  [95% CI  $-.00, .02$ ],  $SE = .01$ ), and anti-mattering ( $\beta = -.00$  [95% CI  $-.03, .01$ ],  $SE = .01$ ) was non-significant.

The indirect effect of socially prescribed perfectionism on depressive symptoms via difficulty accepting the past ( $\beta = .03$  [95% CI .01, .08],  $SE = .02$ ) was significant. The indirect of socially prescribed perfectionism on suicide ideation via mattering ( $\beta = .00$  [95% CI -.00, .02],  $SE = .01$ ) and anti-mattering ( $\beta = -.01$  [95% CI -.02, .00],  $SE = .01$ ) was non-significant. Conversely, the indirect effect of socially prescribed perfectionism on suicide ideation via difficulty accepting the past ( $\beta = .02$  [95% CI .00, .03],  $SE = .01$ ) was significant (see Figure 7.4).

#### 7.3.2.5 *The inclusion of age as a covariate*

As age was significantly correlated with most of the key variables of interest in the community sample, the same model was tested in both the university and community sample with the inclusion of age as a covariate. Models were tested for both the EMPDS only model and the integrated model combining the PSDM and EMPDS. As with all studies in the thesis, all paths were virtually identical to the previous model when including age as a covariate. Similarly to the university sample, in the community sample no findings significantly differed when age was added as a covariate.



*Figure 7.1.* Path diagram depicting associations among variables of the EMPDS for the **university sample**. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from self-oriented perfectionism to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), and socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) were omitted from the figure. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = -.15$  [95% CI -.31, .01]. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = -.11$  [95% CI -.27, .08]. The path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .20^*$  [95% CI .01, .39]. The path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = .19^*$  [95% CI .05, .34]. The path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .54^{***}$  [95% CI .38, .68]. The path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .62^{***}$  [95% CI .29, .84]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .63$ . The correlation among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .02$ . The correlation among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .26^{***}$ . The correlation among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .02$ . The correlation among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .20^*$ .  $^*p < .05$ ,  $^{**}p < .01$ ,  $^{***}p < .001$ , two-tailed.

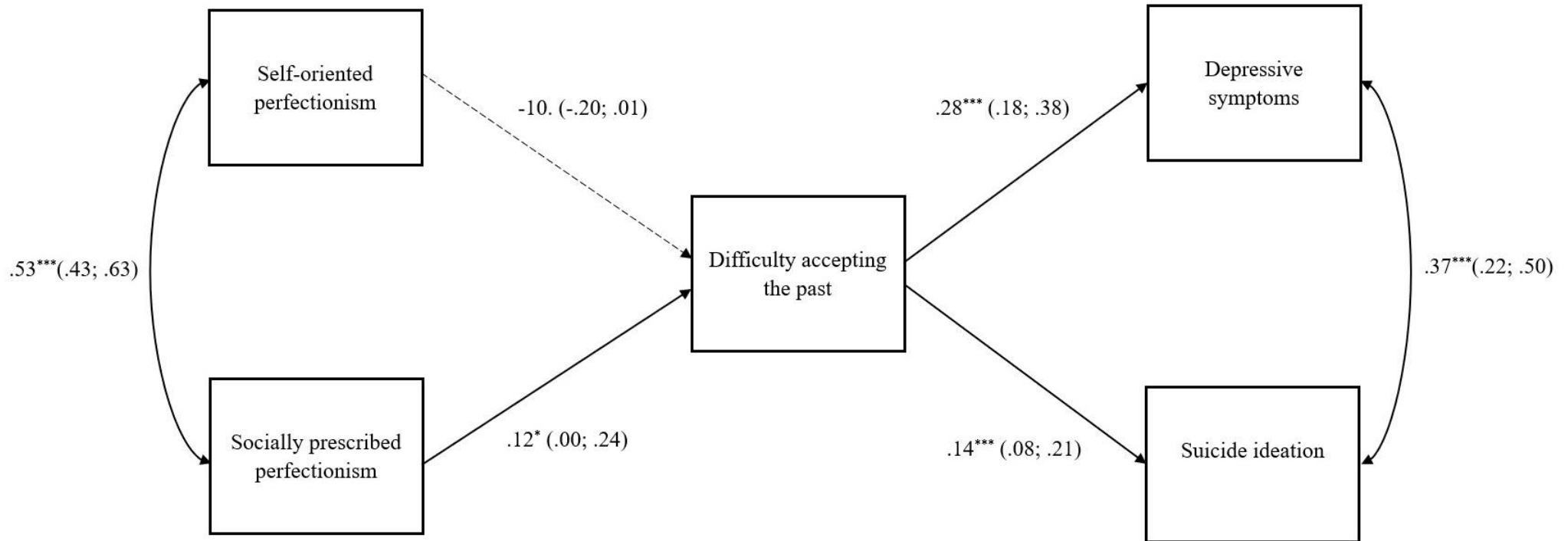


Figure 7.2. Path diagram depicting associations among variables of the EMPDS for the **community sample**. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), and socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) were omitted from the figure for clarity. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = -.12^*$  [95% CI -.21, -.02]. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = -.08$  [95% CI -.17, .01]. The path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .13^{**}$  [95% CI .04, .22]. The path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = .07$  [95% CI -.01, .15]. The path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .59^{***}$  [95% CI .48, .69]. The path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .78^{***}$  [95% CI .69, .85]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .63^{***}$ . The correlation among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .03$ . The correlation among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .20^{**}$ . The correlation among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = -.13$ . The correlation among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .08$ . \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.



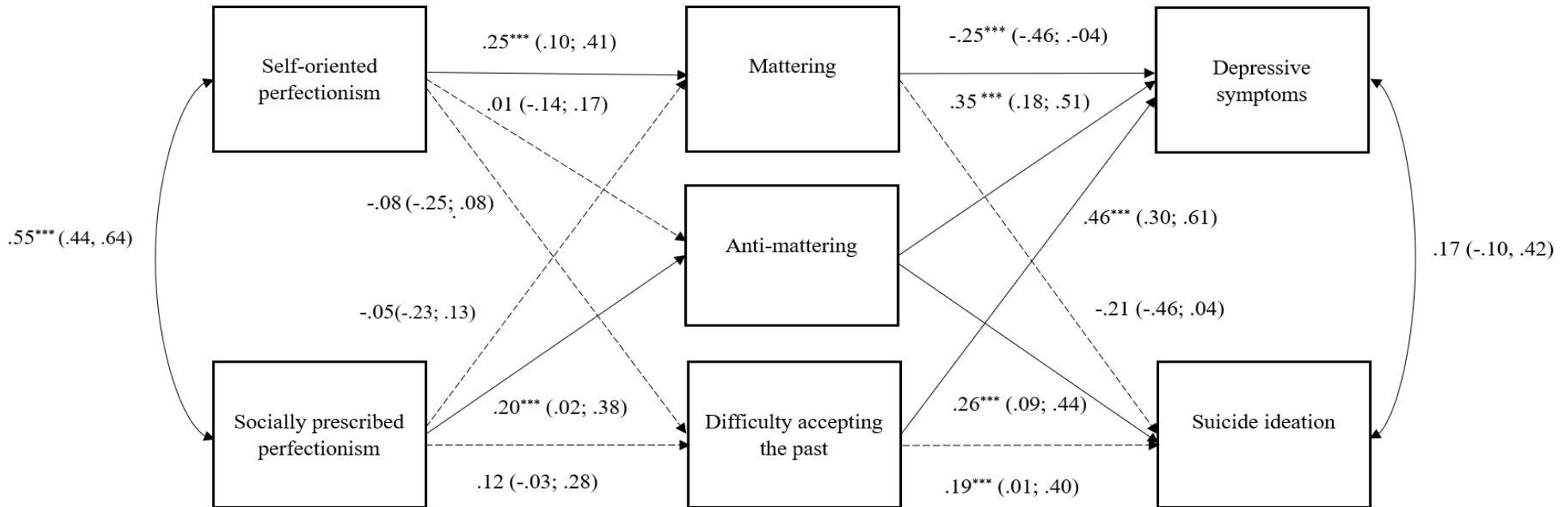
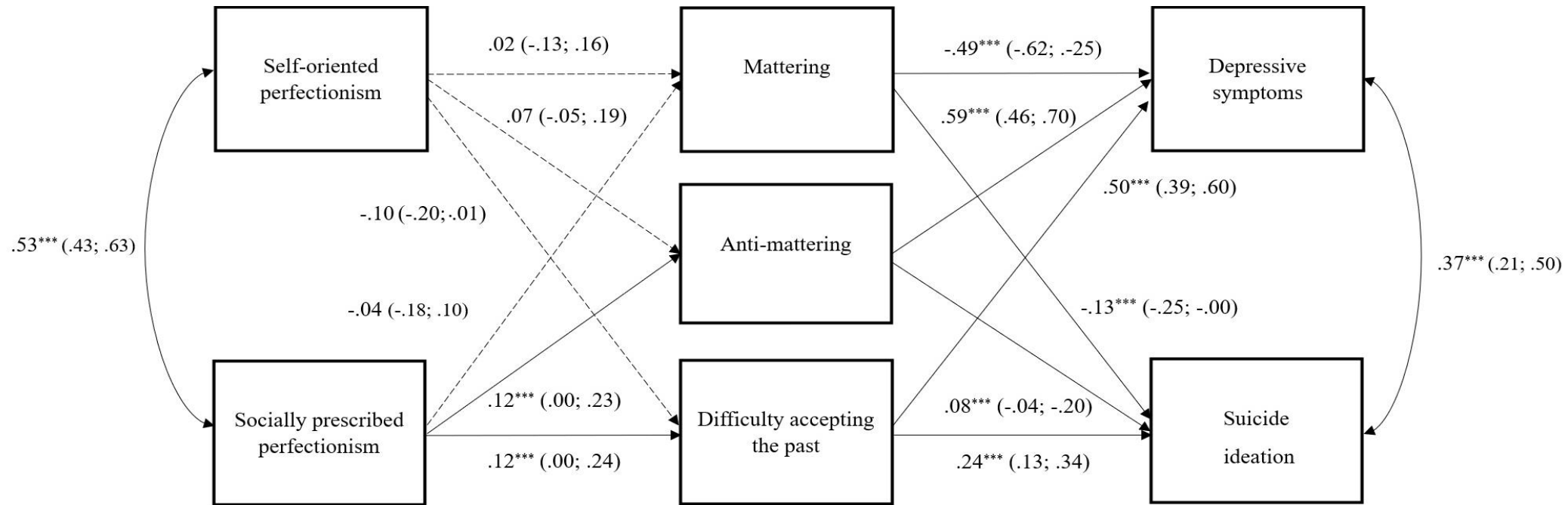


Figure 7.3. Path diagram depicting associations among variables of the integrated model for the **university sample**. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) mattering (Wave 2) and anti-mattering (Wave 2), mattering and difficulty accepting the past (Wave 2), and anti-mattering and difficulty accepting the past (Wave 2) were omitted from the figure. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = -.18^{***}$  [95% CI -.34, -.02], from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = .16^{***}$  [95% CI -.32, -.01], from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .17$  [95% CI -.03, .37], from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = .11$  [95% CI -.03, .25], from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .53^{***}$  [95% CI .31, .72], from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .61^{***}$  [95% CI .27, .81]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .63^{***}$ , among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .02$ , among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .25^{***}$ , among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .01$ , among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .20^{***}$ , among mattering (Wave 2) and anti-mattering (Wave 2) was  $r = -.24^{***}$ , among mattering (Wave 2) and difficulty accepting the past (Wave 2) was  $r = -.19^{***}$ , and among anti-mattering (Wave 2) and difficulty accepting the past (Wave 2) was  $r = .12$ . All estimates are standardized. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.



*Figure 7.4.* Path diagram depicting associations among variables of the integrated model for the **community sample**. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations among depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) and mattering (Wave 2) and anti-mattering (Wave 2) were omitted for clarity. The path from self-oriented perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = -.12^{***}$  [95% CI -.21, -.02]. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = -.07$  [95% CI -.17, .01], from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .13^{***}$  [95% CI .04, .22], from socially prescribed perfectionism (Wave 1) to suicide ideation (Wave 3) was  $\beta = .08$  [95% CI -.01, .16], from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was  $\beta = .59^{***}$  [95% CI .47, .69], and from suicide ideation (Wave 1) to suicide ideation (Wave 3) was  $\beta = .77^{***}$  [95% CI .69, .85]. The correlation among depressive symptoms (Wave 1) and suicide ideation (Wave 1) was  $r = .63^{***}$ , among self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .03$ , among socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was  $r = .20^{**}$ , among self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = -.13$ , among socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was  $r = .08$ , among mattering (Wave 2) and anti-mattering (Wave 2) was  $r = -.38^{***}$ , among mattering and difficulty accepting the past was  $r = -.24^{***}$ , and among anti-mattering and difficulty accepting the past was  $r = .22^{***}$ . All estimates are standardized. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , two-tailed.

## 7.4 Discussion

Study four sought to extend existing research on the EMPDS in three respects. First, all longitudinal studies of the EMPDS have examined depressive symptoms as an outcome and have overlooked suicide ideation (e.g., Graham et al., 2010). Second, while research suggests difficulty accepting the past is an important risk factor for suicidality (e.g., Heisel et al., 2016), no research has examined the relationship between difficulty accepting the past and suicide ideation longitudinally. Third, to date, no research had conducted a longitudinal integrated test of the PSDM and EMPDS. Study four, addressed all of these limitations by examining a robust three-wave longitudinal test of the EMPDS extended to include suicide ideation as an outcome and a robust three-wave longitudinal integrated test of the PSDM and EMPDS, controlling for baseline depressive symptoms and suicide ideation.

In a test of the EMPDS only, it was hypothesized that socially prescribed perfectionism would indirectly predict depressive symptoms and suicide ideation via difficulty accepting the past. In a test of the integrated model, it was hypothesized that socially prescribed perfectionism would be indirectly associated with depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past. In the EMPDS test, findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past in the community sample, but not in the university sample. In the integrated test, findings revealed that socially prescribed perfectionism indirectly predicted suicide ideation over time via anti-mattering in the university sample. In addition, self-oriented perfectionism indirectly predicted suicide ideation via mattering in the university sample. In contrast, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation over time via difficulty accepting the past in the community sample. No other relationships emerged as significant.

*7.4.1 The mediated effects of perfectionism on depressive symptoms and suicide ideation through mattering, anti-mattering, and difficulty accepting the past.*

Anti-mattering did not mediate relationships between socially prescribed perfectionism and depressive symptoms over time across samples. Firstly, this finding contrasts against research which has found socially prescribed perfectionism to predict depressive symptoms over time (Smith et al., 2016). In addition, this finding contrasts against theory (Hewitt et al., 2017) and longitudinal research (e.g., Cox et al., 2009; Smith et al., 2017b; Smith et al., 2018b) on the PSDM and is also incongruent with the longitudinal findings from study two. Whilst unexpected, the lack of findings with the university sample may be due to a relatively small sample size at Time 3 ( $N = 108$ ), and thus it is possible the sample was underpowered. In addition, the lack of findings here may also be partly attributable to the higher rank-order stability of depressive symptoms in the university sample in the current study ( $r = .71$  to  $.79$ ), in comparison to study two ( $r = .52$  to  $.67$ ), leaving less variance to be explained. Given that depressive symptoms become decreasingly stable over time (Smith et al., 2021), future research should examine these relationships over a longer time span.

The lack of findings between socially prescribed perfectionism and depressive symptoms via anti-mattering as a mediator in the community sample was not completely unexpected. While this finding contrasts against the cross-sectional findings in study one and three and previous research of the PSDM in community samples (e.g., Flett et al., 2014; Rnic et al., 2021; Robinson et al., 2022), this finding is in line with the longitudinal findings in study two and suggest that feelings of not mattering do not sufficiently explain why perfectionism generates depressive symptoms over time in community samples. As with the university sample, one possible reason for the findings in study two and four may be due to the relatively short time frame (three waves separated by three weeks), which may not have

been long enough to detect changes in depressive symptoms. This may be particularly the case in the community sample given the notably higher rank order stability found among depressive symptoms in the community sample ( $r = .80$  to  $.87$ ) relative to the university sample ( $r = .71$  to  $.79$ ). This notion is in line with previous research which has shown depressive symptoms to be increasingly stable with age (Smith et al., 2021).

Another reason for the lack of finding here may be due to the inclusion of difficulty accepting the past. As difficulty accepting the past was included as a mediator alongside mattering and anti-mattering in the model, it is possible this mediator may have accounted for most of the variance. Despite this, the same finding emerged in the community sample in study two which did not include difficulty accepting the past as a mediating variable. Therefore, findings more likely suggest that existential mediators, such as difficulty accepting the past are more important in explaining the perfectionism-depressive symptoms relationship in community samples. Future research should focus on examining the EMPDS in community samples and should examine other existential markers as mediators (e.g., meaning in life; Steger et al., 2009) that may be important in this relationship.

The finding that socially prescribed perfectionism indirectly predicted depressive symptoms via difficulty accepting the past over time in the community sample emerged in both the EMPDS and integrated model. This finding is in line with the cross-sectional findings in study three and previous longitudinal research of the EMPDS in community adults (e.g., Smith et al., 2020a). Findings suggest that people who live their life in congruence with others' expectations struggle to form positive, satisfying, and meaningful representations of the past and in turn are prone to experiencing depressive symptoms (Graham et al., 2010). However, the lack of findings in the sample of university students contrasts against previous longitudinal research examining the EMPDS in undergraduate students (e.g., Graham et al., 2010). The presence of this relationship in the community

sample, but not the university sample, then, may be due to the community sample placing a greater focus on the past (e.g., Webster et al., 2014).

Drawing on the literature of time perspectives, temporal orientations are thought to change as people age and move into different life stages (Shipp & Aeon, 2019). Generally, younger adults focus more on the present and the future, and older adults focus more on the past (Webster et al., 2014). Research has found that as people move from younger adulthood to middle-aged adulthood, their attention becomes increasingly past oriented (in addition to remaining future oriented; see Park et al., 2017). In this regard, the community sample ( $M_{age} = 38.34$  years), were more likely to spend greater time thinking about the past, and were likely greater prone to ruminate about past life experiences, relative to the younger university sample ( $M_{age} = 20.15$  years). In line with this, the community sample exhibited greater mean levels of difficulty accepting the past in the current study. Future research should investigate whether difficulty accepting the past changes over the lifespan. In particular, research comparing young adults to old-aged adults would be particularly informative.

The finding that self-oriented perfectionism indirectly predicted suicide ideation via mattering in the university sample was unexpected. This finding, however, is in line with extant meta-analytical research which has found self-oriented perfectionism to display positive associations with suicide ideation (Smith et al., 2018a). In addition, this finding aligns with research suggesting that self-oriented perfectionism is often unrelated to social disconnection and has even been found to be positively related to social connection (Stoeber et al., 2017). Despite this, findings contrast with research which suggests that mattering can act as a protective factor against suicidality (e.g., Elliott et al., 2005). While this finding is unclear, it is possible that this finding would not have emerged had self-oriented perfectionism not been entered into the model alongside socially prescribed perfectionism. Here, it is likely that the more harmful aspects of self-oriented perfectionism were partialled

out, when controlling for the shared variance between self-oriented perfectionism and socially prescribed perfectionism. Future research is needed to investigate why on some occasions self-oriented perfectionism emerges as harmful in the PSDM, and why on other occasions it does not.

The finding that socially prescribed perfectionism indirectly predicted suicide ideation via anti-mattering in the university sample is in line with theory and research (e.g., Flett et al., 2012; Hewitt et al., 2006; Roxborough et al., 2012), yet contrasts with findings in study two. One possible reason why this indirect effect with suicide ideation was significant in the current study but not study two, may be due to a lower rank-order stability of suicide ideation at Time 3 in study four, in comparison to study two, allowing for more variance to be explained. In addition, the university sample mean scores of suicide ideation across all three waves in the current study were notably higher than the mean scores of suicide ideation in study two, suggesting that the sample in study two were a relatively healthy sample. In line with this, prior longitudinal studies indicate that the perfectionism-suicidality relationship may be more pronounced in clinical (e.g., Beevers & Miller, 2004), rather than non-clinical samples (e.g., Enns et al., 2001). Therefore, it is possible the PSDM is more adept at explaining these relationships in psychologically distressed samples experiencing greater suicide ideation. Future research is needed to test this possibility.

However, notably, this finding did not replicate in the community sample, which is congruent with findings in study two. There are several possible reasons why this finding did not emerge. For example, the community sample exhibited notably higher rank-order stability of suicide ideation ( $r = .87$  to  $.92$ ), relative to the university sample ( $r = .69$  to  $.79$ ), leaving less variance to be explained. Nevertheless, despite the high rank-order stability of suicide ideation in the community sample, findings suggest anti-mattering is not an important mediating variable in explaining *why* socially prescribed perfectionism leads to suicide

ideation in community samples. Instead, it appears that other mediating variables (e.g., difficulty accepting the past) are more adept in explaining these relationships. Future research examining the perfectionism-suicidality relationship should prioritise the EMPDS when examining these relationships among older community samples.

Socially prescribed perfectionism indirectly predicted suicide ideation via difficulty accepting the past in the community sample in both the EMPDS and the integrated test. This finding is in line with research examining the perfectionism-suicidality relationship via existential mediators (e.g., reasons for living; Dean & Range, 1996). Findings suggest that people who live life at the whim of others struggle to establish meaningful and authentic experiences, which may over time lead to distressing thoughts of ending one's life. Findings suggest suicide ideation is important within the EMPDS and suggest that the EMPDS should be refined to include suicidality as an outcome variable. Though this contention has not been examined in prior research, this finding aligns with Smith and colleagues' (2020a) suggestion that the EMPDS should extend to other forms of distress beyond depressive symptoms, such as suicidality. It is also possible that the EMPDS may extend to other forms of psychopathology. Despite this, research examining difficulty accepting the past and associated outcomes are scarce, and thus, this line of research may help infer which outcome variables are relevant to the EMPDS.

When contrasting the findings of the EMPDS and the integrated model, findings did not change across the two models in regard to the EMPDS. For instance, the finding that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past in the community sample emerged in both the EMPDS and integrated test. In addition, no significant findings emerged for the university sample in regard to the EMPDS across both the EMPDS and integrated test. Moreover, with the addition of the PSDM in the integrated test, changes in variance explained were minimal



in the community sample (0.1% for depressive symptoms and 0.2% for suicide ideation). However, changes in the variance explained in the integrated test with the university sample were larger, particularly in regard to suicide ideation (1.5% for depressive symptoms and 14.2% for suicide ideation). While findings remained unchanged in the integrated model, comparison of the models helped to determine the predictive ability and variance explained between the EMPDS and integrated model. Findings therefore advocate for other explanatory models of the perfectionism-depressive symptoms link and perfectionism-suicidality link to be integrated in future research.

The finding that the PSDM emerged as important to the university sample, but not the community sample, and the EMPDS emerged as important to the community sample, but not the university sample are noteworthy. This is because previous research has largely supported the PSDM in community samples (e.g., Flett et al., 2014; Rnic et al., 2021; Robinson et al., 2022) and the EMPDS in university samples (e.g., Graham et al., 2010; Park & Joeng, 2016; Sherry et al., 2015) in cross-sectional and longitudinal research. Alongside study two, the present study helps to determine which mediating mechanisms are strongest in explaining *why* socially prescribed perfectionism contributes to depressive symptoms and suicide ideation over time across samples. Based on tests of the PSDM, the EMPDS, and the integrated model in study two and study four, findings of the present study suggest that the PSDM may be more relevant to university samples, and the EMPDS may be more relevant to community samples.

## **7.5 Concluding remarks**

Study four methodologically advanced understanding of the relationships between perfectionism, depressive symptoms, and suicide ideation via mattering, anti-mattering, and difficulty accepting the past in a longitudinal test of the EMPDS and a longitudinal test of an integrated model combining the PSDM and the EMPDS. Findings revealed that socially

prescribed perfectionism indirectly predicted suicide ideation over time via anti-mattering in the university sample. Socially prescribed perfectionism also indirectly predicted depressive symptoms and suicide ideation over time via difficulty accepting the past in the community sample. In addition, self-oriented perfectionism indirectly predicted suicide ideation via mattering in the university sample. In the present study, the test of the EMPDS and the integrated model suggest that the link between socially prescribed perfectionism, depressive symptoms and suicide ideation is robust and observable over time. It is also possible that the PSDM may be a better explanatory model for university samples whereas the EMPDS may be a better explanatory model for community samples. Findings advocate for future research to include suicide ideation in the EMPDS. In regard to the EMPDS and integrated model, while findings did not differ when examining difficulty accepting the past as a mediator, the integrated model was still important to better determine the individual predictive ability of theoretical models. Future research, then, should continue to assess the utility of integrated models.

## Chapter 8: General discussion

*“I desire the things that will destroy me in the end”* – Sylvia Plath (Plath, 2007).

### 8.1 Purpose of the thesis.

The perfectionism-depressive symptoms and perfectionism-suicidality relationship has been well-established. However, less is known about the mechanisms underpinning these relationships. The PSDM and EMPDS are two promising theoretical models which explain why perfectionism may lead to depressive symptoms and suicide ideation (Hewitt et al., 2006; Graham et al., 2010). The PSDM posits that perfectionism leads to objective (i.e., actual impaired relationships) and subjective (i.e., perceived isolation or disconnection) social disconnection via interpersonal hostility and sensitivity, which in turn, leads to psychopathology (Hewitt et al., 2006). Whereas the EMPDS posits that perfectionism leads to depressive symptoms through difficulty accepting the past (i.e., viewing past life experiences as meaningless, dissatisfying, and incoherent; Graham et al., 2010).

Although both theoretical models are promising, several limitations are evident in existing research that have tested these models. First, research examining self-oriented perfectionism in the PSDM is equivocal (e.g., Rnic et al., 2021). Further research was needed to better understand the role of self-oriented perfectionism in the PSDM. Second, while a variety of markers of social disconnection have been examined in the PSDM (e.g., interpersonal discrepancies, negative social feedback, and social self-esteem; Nepon et al., 2011; Sherry et al., 2013a; Smith et al., 2017b), there were still markers of social disconnection (i.e., anti-mattering) yet to be examined in the PSDM. Third, very few studies have examined suicide ideation as an outcome in the PSDM (e.g., Robinson et al., 2022; Roxborough et al., 2012). Fourth, while research has begun to examine suicide ideation as an outcome in the PSDM (e.g., Robinson et al., 2022), no research had tested whether the

EMPDS extends to include suicide ideation. Fifth, to date, the PSDM and EMPDS had been studied separately, which prevents evaluations of unique contributions. An integration of the PSDM and EMPDS may improve their overall predictive utility and allow a comparison of competing explanatory models.

There are also several key limitations in existing work from a design perspective. Most studies have examined the PSDM and EMPDS using cross-sectional designs or two-wave longitudinal designs (e.g., Cha, 2016; Flett et al., 2012; Smith et al., 2020b). However, both cross-sectional and two-wave longitudinal designs are incapable of providing proper tests of mediation or underpinning mechanisms (Maxwell & Cole, 2007). Cross-sectional studies, for example, assess all variables concurrently and therefore produce biased and misleading estimates of mediation (Gollob & Reichardt, 1985). In addition, two-wave longitudinal designs either examine the contemporaneous relationship between X and M or M and Y, and are therefore temporally confounded. Instead, mediational models should utilise three waves to examine predictor, mediator and outcome variables at separate timepoints to avoid being temporally confounded. As such, three-wave longitudinal tests of the PSDM and EMPDS were warranted.

Against this background, the overarching aim of the thesis was to advance understanding of the relationships between perfectionism and depressive symptoms, and perfectionism and suicide ideation by extending, integrating, and testing the PSDM and EMPDS. In this final chapter of the thesis, the findings from each study are summarized and the contribution of the thesis to the current state of knowledge is discussed. This chapter also includes consideration of the limitations of the thesis and areas for future research.

## 8.2 *Summary of the findings*

The purpose of study one was to extend and test the PSDM to investigate *why* perfectionism leads to depressive symptoms and suicide ideation. **Study one** extended

existing research in two ways. First, though theory suggests anti-mattering plays a role in the PSDM (Flett, 2018b), no research has tested this contention. Second, although suicide ideation is a key part of the PSDM (Hewitt et al., 2006), it has largely been excluded in existing research. To address these limitations, study one included anti-mattering alongside mattering as a marker of social disconnection in the PSDM and suicide ideation alongside depressive symptoms as an outcome variable.

Study one, thus, examined the mediating role of mattering and anti-mattering in relationships between perfectionism and depressive symptoms and perfectionism and suicide ideation. Findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering in both an undergraduate and community sample. Conversely, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via mattering in a community sample (but not a university sample). This study advanced research by demonstrating that anti-mattering is an important mediator in explaining why perfectionism contributes to depressive symptoms and suicide ideation, and that suicide ideation is an important outcome in the model. Study one, thus, advocates for the inclusion of anti-mattering as a mediator and suicide ideation as an outcome in the PSDM.

While the findings of study one demonstrated a role for anti-mattering and suicide ideation in the PSDM, study one employed a cross-sectional design. Cross-sectional designs, however, cannot disentangle the direction of relationships or provide a proper test of the proposed mediation and underlying mechanisms (Maxwell & Cole, 2007). The purpose of **study two**, then, was to methodologically advance study one by providing a robust three-wave longitudinal test of the PSDM, examining predictor, mediator, and outcome variables at separate timepoints. Study two was the first longitudinal test of the PSDM using three waves

of data, which controlled for baseline levels of outcome variables. In addition, study two was also the first study to examine the mattering-suicidality relationship longitudinally.

Findings revealed that socially prescribed perfectionism had an indirect relationship with depressive symptoms via anti-mattering in a university sample. This test of the PSDM in the university sample is one of the most stringent test of this relationship to date and confirmed that, over time, socially prescribed perfectionism is related to depressive symptoms via feelings of not mattering. No other findings emerged as significant in this study. Notably, most of the cross-sectional findings of study one did not replicate when examined in a more robust manner longitudinally. This study ultimately sheds light on the apparent disparities between cross-sectional and longitudinal designs and affirmed the need for robust longitudinal tests of the PSDM and other models.

Study two found partial support for the predictive ability of variables in the PSDM of depressive symptoms longitudinally and no support for the predictive ability of variables in the PSDM for suicide ideation longitudinally. As such, it was considered important to consider alternative models of these relationships - the EMPDS. Though theory and research suggested that the EMPDS would extend to suicide ideation, no research had examined this contention. In addition, no research had integrated the PSDM and EMPDS to test and compare models. To address these limitations the purpose of **study three** was to test a model extending the EMPDS to include suicide ideation and to test a separate model integrating the PSDM and EMPDS. Study three first examined the mediating role of difficulty accepting the past (from the EMPDS) in the relationship between perfectionism and both depressive symptoms and suicide ideation. Next, a separate integrated model examined the mediating role of mattering and anti-mattering (from the PSDM) and difficulty accepting the past (from the EMPDS) in the relationships between perfectionism and both depressive symptoms and suicide ideation.

In a test of the EMPDS, findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via difficulty accepting the past in both the university and community sample. However, no findings emerged for self-oriented perfectionism in this model. In a test of the integrated model, findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past in the university and community sample. In addition, self-oriented perfectionism and socially prescribed perfectionism indirectly predicted suicide ideation via mattering in the community sample only. Self-oriented perfectionism also indirectly predicted depressive symptoms, via anti-mattering and difficulty accepting the past, and suicide ideation, via mattering, anti-mattering, and difficulty accepting the past, in the community sample only. Study 3 advanced understanding by establishing for the first time that difficulty accepting the past is an important mediator in the relationship between socially prescribed perfectionism and suicide ideation. Findings advocate for the inclusion of suicide ideation in the EMPDS and for further consideration and tests of integrative models, including the combination of the PSDM and EMPDS.

While study three advanced research and provided support for the EMPDS and an integrated model of the PSDM and EMPDS, like study one, this study was limited by its cross-sectional design. To address this limitation, the purpose of **study four** was to methodologically advance study three by conducting a robust three-wave longitudinal test of the EMPDS and an integrated model of the PSDM and EMPDS and, again, examining predictor, mediator, and outcome variables at separate timepoints. In a test of the EMPDS, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation over time via difficulty accepting the past in the community sample. However, no indirect relationships emerged in the university sample. When contrasted against study three, findings of the EMPDS in the university sample did not replicate when examined in a robust

longitudinal test, suggesting that the EMPDS is not as important in explaining why perfectionism leads to mental health problems in this sample. However, the test of the EMPDS in the community sample is one of the most stringent tests of this relationship to date, and confirmed that, over time, socially prescribed perfectionism is related to both depressive symptoms and suicide ideation via difficulty accepting the past.

In a test of the integrated model, findings revealed that socially prescribed perfectionism indirectly predicted suicide ideation over time via anti-mattering in the university sample. Socially prescribed perfectionism also indirectly predicted depressive symptoms and suicide ideation over time via difficulty accepting the past in the community sample. Notably, most of the findings of the integrated model did not replicate when examined in a robust longitudinal test. However, the findings that did emerge appear to be a particularly robust aspect of the PSDM and EMPDS. Study four, again, sheds lights on disparities between cross-sectional and longitudinal designs and supports the need for robust longitudinal tests of the PSDM and EMPDS. The findings of study four also highlight the need to consider whether specific theoretical models are better suited to specific samples. For instance, in the integrated model, findings revealed that the PSDM may be a better explanatory model in university samples, whereas the EMPDS may be a better explanatory model in community samples. These findings also dovetail with tests of the PSDM and the EMPDS in study two and study four.

### *8.3 Thesis contribution to current state of knowledge.*

The findings of the thesis make an important contribution to knowledge in helping to understand *why* perfectionism leads to depressive symptoms and suicide ideation. In this regard, findings advocate for researchers to consider the (1) **inclusion of self-oriented perfectionism** when identifying markers of social disconnection to include within the PSDM. In addition, findings of the thesis advocate for the (2) **inclusion of anti-mattering** as a



marker of social disconnection in the PSDM and suggest that anti-mattering is a better proxy than mattering within the PSDM. In addition, despite some inconsistencies, findings of the thesis advocate for the (3) **inclusion of suicide ideation as an outcome in the PSDM.**

Likewise, findings advocate for the (4) **inclusion of suicide ideation as an outcome in the EMPDS** and the need to refine and form a more comprehensive EMPDS. Findings also highlight the (5) **importance of integrating explanatory models with multiple samples.**

Lastly, findings of the thesis highlight the (6) **disparities between cross-sectional and longitudinal designs** and the need to examine the PSDM and EMPDS in robust longitudinal designs. Each of these issues are discussed in detail below.

### **8.3.1 The inclusion of self-oriented perfectionism in the PSDM.**

Self-oriented perfectionism was not originally included in the PSDM (Hewitt et al., 2006). However, recent expanded models advocate for its inclusion (Hewitt et al., 2017; Sherry et al., 2016). On this basis, self-oriented perfectionism was included within tests of the PSDM in the thesis. Expanded models of the PSDM suggest that self-oriented perfectionism plays a role because this dimension is characterized by compulsive striving and a narrow focus on achievements at the expense of forming meaningful relationships with others (Sherry et al., 2016). By contrast, some theorists suggest self-oriented perfectionism is not relevant to social disconnection and instead is positively related to social connection and low hostility (Stoeber et al., 2017). Likewise, to date, research examining self-oriented perfectionism in the PSDM is equivocal. For instance, some studies have found an association between self-oriented perfectionism and markers of social disconnection (e.g., Hewitt et al., 2020; Magson et al., 2019; Rnic et al., 2021), whereas others have not (e.g., Rnic et al., 2021; Sherry et al., 2003; Sherry et al., 2013a).

As research examining the role of self-oriented perfectionism in the PSDM is equivocal, it was important to reconcile contradictory findings of self-oriented perfectionism.

In regard to the thesis, across the four studies, findings principally suggest that self-oriented perfectionism does not play a role in the PSDM when tested both cross-sectionally and longitudinally. This was evident across all studies of the thesis where self-oriented perfectionism did not emerge as important in the PSDM. There was only one exception - in study three – in a community sample and with a cross-sectional design, self-oriented perfectionism indirectly predicted depressive symptoms via anti-mattering and suicide ideation via mattering and anti-mattering. As such, the case for the inclusion of self-oriented perfectionism may be limited.

The lack of findings with self-oriented perfectionism in the current studies do not necessarily suggest that self-oriented perfectionism should be excluded from future tests of the PSDM. Rather, in line with previous research (Flett et al., 2012), findings from the thesis suggest that mattering and anti-mattering are markers of social disconnection which are not of especial relevance to self-oriented perfectionism. Instead, alternative markers of social disconnection appear to be important (e.g., loneliness; social self-esteem; reassurance of worth; Chang et al., 2008; Smith et al., 2017b; Rnic et al., 2021). In particular, Rnic et al. (2021) highlighted the specificity of self-oriented perfectionism and suggested that self-oriented perfectionism is related to specific markers of social disconnection only (e.g., reassurance of worth, loneliness). Future research, then, should place less focus on whether or not self-oriented perfectionism should be included in the PSDM, but rather which specific markers of social disconnection are important to this dimension.

### **8.3.2 The inclusion of anti-mattering in the PSDM.**

While previous cross-sectional studies have examined the mediating role of mattering in the PSDM (Cha, 2016; Flett et al., 2012), no studies on the PSDM have examined its conceptual counterpart anti-mattering (Flett, 2018b). Anti-mattering is newly conceptualized construct which is deemed qualitatively distinct to mattering (see Flett et al., 2022b).

Notably, anti-mattering encapsulates feelings of not mattering, but also includes a sense of feeling marginalized (Flett, 2018b). Accordingly, anti-mattering is considered much more insidious and destructive than low feelings of mattering. This is evident in initial research which has found anti-mattering to exhibit much stronger associations with negative outcomes, such as depression and negative affect, relative to mattering (Flett, 2018b). Therefore, building on research examining mattering within the PSDM (e.g., Flett et al., 2012), it was important to examine whether anti-mattering plays a more prominent role as a marker of social disconnection in the PSDM relative to mattering.

Based on findings from all studies in the thesis, anti-mattering emerged as a more important mediator in the PSDM than mattering. This was evident in both the cross-sectional studies and robust longitudinal studies. In study one and study three, for instance, anti-mattering was found to consistently mediate relationships between socially prescribed perfectionism and both depressive symptoms and suicide ideation, however mattering inconsistently mediated these relationships. Notably, in the robust longitudinal studies (study two and study four), anti-mattering was the only marker of social disconnection to emerge as a significant mediator in the university samples, whereas neither mattering nor anti-mattering emerged as important mediators in the community samples. Collectively, findings across all studies of the thesis found anti-mattering to be a much stronger mediator in the PSDM than mattering.

While mattering did not emerge as an important mediator in the PSDM in the thesis, this was the first instance in which anti-mattering has been included alongside mattering in the PSDM. Thus, it is likely that mattering was subsumed by anti-mattering which is deemed more insidious and extreme. Anti-mattering also fits more pertinently with the negative self-views and self-schemas of people experiencing depressive symptoms and suicidal thoughts. In addition, anti-mattering captures overgeneralizations of perceptions of not mattering,

which are considered to be particularly harmful (Flett, 2018b). In this regard, it is likely that anti-mattering accounted for much of the variance across studies. Given that anti-mattering consistently emerges as a better proxy of social disconnection relative to mattering (particularly within the undergraduate population), anti-mattering should be a focus of future research and should replace mattering as a mediator within the PSDM.

By extension, the findings also suggest that universities should play a prominent role in lessening undergraduates' feelings of not mattering to reduce the prevalence of mental health problems in this population. Embedding campus-wide initiatives focused on lowering feelings of not mattering are one way to do so, however, to date all initiatives are focused on boosting perceptions of mattering, rather than reducing feelings of not mattering (i.e. anti-mattering; see Flett, 2018a). While boosting perceptions of mattering may help to reduce feelings of anti-mattering to some extent, it can be expected that boosting perceptions of mattering would not be as effective as addressing feelings of anti-mattering. This is because while these constructs are highly related, they are still qualitatively distinct (Flett et al., 2022b). Given research showing the importance of mattering as a protective factor against depressive symptoms and suicidality (e.g., Joiner et al., 2009), anti-mattering should be considered as a key risk factor of depressive symptoms and suicidality and therefore should be examined more extensively in other research and theoretical models (i.e., the Integrated Motivational-Volitional model of suicidal behaviour) evaluating the risk of depressive symptoms and suicidality.

### **8.3.3 The inclusion of suicide ideation in the PSDM.**

Despite the PSDM being originally conceptualized to explain the perfectionism-suicidality relationship, research examining suicide ideation in the PSDM is scarce. To date, only two cross-sectional studies have examined suicide ideation through the lens of the PSDM (Robinson et al., 2022; Roxborough et al., 2012). These studies found perfectionism

dimensions (i.e., socially prescribed perfectionism and perfectionistic self-presentation) to indirectly predict suicidality via markers of social disconnection (social hopelessness; being bullied; interpersonal hopelessness). However, no studies had examined whether mattering and anti-mattering mediate relationships between perfectionism and suicidality, despite research suggesting that perceptions of mattering are important in preventing suicidality (e.g., Joiner et al., 2009). In addition, all studies which had examined suicide ideation thus far have been tested cross-sectionally, and thus there is a clear need for stringent longitudinal tests examining suicide ideation within the PSDM.

Study one and study three found support for the indirect relationship of socially prescribed perfectionism and suicide ideation via anti-mattering cross-sectionally across samples. When replicated and tested longitudinally, study two did not provide support for the inclusion of suicide ideation in the PSDM in either samples. By contrast, study four did provide support for the inclusion of suicide ideation longitudinally in the PSDM in the university sample only. The discrepancy in findings with the inclusion of suicide ideation as an outcome between study two and four was surprising given the same design opted in both studies. Nevertheless, these discrepancies may be due to the lower rank-order stability of suicide ideation and higher mean levels of suicide ideation evident across waves in study four's university sample, relative to study two, allowing greater variance to be explained in suicide ideation. In addition, partial support was obtained for the inclusion of suicide ideation longitudinally in university samples, but not in community samples. It is also possible that the lack of finding of suicide ideation in the community sample may be attributed to greater stability of suicide ideation. Alternatively, findings of study four may suggest that other mediating variables (e.g., difficulty accepting the past) are more adept in explaining why perfectionism leads to suicidality in community adults, and thus the inclusion of suicide ideation in the PSDM may also depend on the sample employed.

In summary, findings from the thesis provide partial support for the inclusion of suicide ideation as an outcome in the PSDM and strongest support for its inclusion in university samples. Given the notable high rank-order stabilities found for suicide ideation, study two and study four suggest that suicide ideation in the PSDM may need to be examined over longer timeframes (e.g., months vs. weeks) to allow for relationships to unfold. In addition, given the healthy samples recruited, low mean levels of suicide ideation, and lower variability in suicide ideation, future research should re-examine the inclusion of suicide ideation longitudinally in the PSDM in clinical samples. Collectively, findings of study two and study four suggest that the inclusion of suicide ideation is nuanced and may only emerge as important under certain conditions: longer timeframes, clinical samples, and with particular markers of social disconnection (e.g., anti-mattering). With this in mind, findings of the thesis provide partial support for the inclusion of suicide ideation and suggest that future research is needed to examine suicidality in the PSDM using different methodological designs, samples, and alternative markers of social disconnection.

#### **8.3.4 Extending suicide ideation as an outcome within the EMPDS.**

No research had examined suicidality as an outcome variable in the EMPDS. However, both theory and research suggest that the EMPDS may extend to suicidality. Butler (1963), for instance, proposed that an obsessive preoccupation with the past may lead to suicidality. In addition, research has found existential markers (i.e., reasons for living, presence of and search for meaning in life) to be protective factors against suicide ideation over time (Heisel et al., 2016; Kleiman & Beaver, 2013). Further evidence for the inclusion of suicide ideation is found in earlier studies examining the perfectionism-suicidality relationship. For example, studies have found socially prescribed to interact with existential markers (i.e., reasons for living, future positive thinking, and overgeneral recall of positive and negative memories) to predict both suicide ideation and suicide behaviours (Dean and

Range, 1996; O'Connor et al., 2007; Rasmussen et al., 2008). In summary, both theory and evidence suggest that suicide ideation should be included in the EMPDS.

Study three and study four were the first studies in this area to include suicide ideation within the EMPDS. Study three first found support for the inclusion of suicide ideation in the EMPDS cross-sectionally, where socially prescribed perfectionism indirectly predicted suicide ideation via difficulty accepting the past in both the university sample and the community sample. Study four found support for the inclusion of suicide ideation in the EMPDS within the three-wave longitudinal test, however this relationship emerged in the community sample only. Findings from study four, in particular, demonstrated that the perfectionism-suicidality relationship survived a particularly stringent test in the community sample when couched within the EMPDS. Findings from the thesis therefore provide strong support for the inclusion of suicide ideation in the EMPDS. However, the inclusion of suicide ideation within the EMPDS may be specific to particular samples only, in this case – older community samples rather than students.

Findings of the thesis suggest that suicidality has an important role within the EMPDS and advocate for the EMPDS to be extended to include suicidality as an outcome and potentially renamed (e.g., “The Existential Model of Perfectionism and Distress”). Study three and study four were the first to include suicide ideation in the EMPDS. While these findings demonstrate that suicidality is indeed an important component of the EMPDS, future research is needed to test the extent to which findings replicate with suicidality as an outcome in the EMPDS using different methodological designs, measures, and samples. Furthermore, findings also advocate for future research to examine difficulty accepting the past as a risk factor for suicidality particularly among older community samples. In addition, difficulty accepting the past should be examined more generally in other models of suicidality, such as the Integrated Motivational-Volitional model (O'Connor, 2011a).

### 8.3.5 The importance of integrating explanatory models

So far, the PSDM and EMPDS have been tested individually (e.g., Smith et al., 2018b; Smith et al., 2017b; Smith et al., 2020a). However, integrating theoretical models are important to compare and contrast competing models and to test the predictive ability of models, particularly across different samples. Integrating the PSDM and EMPDS also combines both present (social disconnection) and past (difficulty accepting the past) sources of self-worth to help form a more complete understanding of the perfectionism-depressive symptom relationship and the perfectionism-suicidality relationship. Studies three and four addressed this limitation and were the first to integrate the PSDM and EMPDS. Specifically, study three conducted a cross-sectional test of the EMPDS then an integrated test combining the PSDM and EMPDS examining mattering and anti-mattering as markers of social disconnection (from the PSDM) and difficulty accepting the past as an existential marker (from the EMPDS). Study four then re-examined the EMPDS and the integrated test in a robust three-wave longitudinal design.

When tested cross-sectionally in study three, both the PSDM and EMPDS emerged as important and demonstrated good predictive ability in explaining why perfectionism predicts depressive symptoms and suicide ideation across samples. However, when examined in a robust longitudinal design, the PSDM demonstrated greater predictive ability within the university sample, whereas the EMPDS demonstrated greater predictive ability within the community sample. For instance, in study two's robust longitudinal test of the PSDM, findings were significant in the university sample (but not the community sample), whereas in study four's longitudinal test of the EMPDS, findings were significant in the community sample (but not the university sample). Furthermore, when both explanatory models were integrated together in study four, significant findings emerged with the PSDM in the university sample (but not the community sample) and significant findings with the EMPDS



emerged in the community sample (but not the community sample), supporting the earlier relationship found in study two and four.

While prior longitudinal research has found the EMPDS to be relevant in university students (e.g., Sherry et al., 2015), findings from the thesis suggest that university students may be more sensitive in regard to their interpersonal relationships. Here, the PSDM emerges as a better explanatory model in this sample. By contrast, while extant longitudinal research has shown the PSDM to be important within community adults (e.g., Cox et al., 2009), findings suggest that existential factors situated within the EMPDS may be more important in older adults who may place greater importance on their past (Santor & Zuroff, 1994). Future research, then, may wish to prioritise testing the EMPDS within older adult samples, and the PSDM in university samples. In addition, findings also highlight the importance of future research to integrate other explanatory models to determine which models demonstrate greater predictive ability when pitted against other models. In particular, findings advocate for explanatory models to be integrated and compared across diverse samples.

### **8.3.6 The importance of robust tests of the PSDM and EMPDS.**

To date, no studies have examined feelings of mattering or not mattering longitudinally in the PSDM or suicide ideation longitudinally in the PSDM and EMPDS. In addition, most research on the PSDM and the EMPDS has relied on cross-sectional designs or longitudinal designs consisting of only two waves of data (e.g., Flett et al., 2014a; Rnic et al., 2021; Smith et al., 2020b). In this regard, almost all prior studies of the PSDM and EMPDS have been temporally confounded and have not conducted a proper test of mediation. Instead, three-wave longitudinal designs are necessary to examine predictor, mediator, and outcome variables at separate timepoints (Cole & Maxwell, 2003). Study two and four, then, were the first to examine mattering and anti-mattering longitudinally in the

PSDM and suicide ideation longitudinally in the PSDM and EMPDS, in addition to conducting a methodologically robust three-wave longitudinal test of the PSDM and EMPDS.

Notably, the thesis highlights a number of disparities in the findings between the cross-sectional tests and the robust longitudinal tests of the PSDM. For instance, many findings which emerged in study one did not replicate when examined longitudinally over three timepoints. This was evident in study two, where all bar one finding in study one, did not replicate longitudinally. Similarly in study four, only three findings from study three emerged as significant when replicated longitudinally. For instance, study three and four provided strong support for the relationship between socially prescribed perfectionism and suicide ideation via anti-mattering in the university sample both cross-sectionally and longitudinally. In addition, the relationship between socially prescribed perfectionism and both depressive symptoms and suicidality via difficulty accepting the past in the community sample emerged as significant both cross-sectionally and longitudinally.

The disparities in findings between the cross-sectional studies and robust longitudinal studies in the thesis demonstrated which mediating mechanisms are particularly strong and which mechanisms are weak when examined in stringent tests of the PSDM and EMPDS. Those which were weak and not robust should be the focus of future research. In addition, the use of robust longitudinal designs also elucidated which mechanisms and theoretical models are strongest among samples. When replicated longitudinally, the PSDM did not emerge longitudinally in the community sample and the EMPDS did not emerge longitudinally in the university sample. Findings suggest future research should place particular focus on examining the PSDM in university samples and the EMPDS in community samples. More broadly, given the number of disparities that are evident between the cross-sectional and longitudinal designs, findings allude to the need for existing cross-sectional studies on the PSDM and the EMPDS to be re-examined in robust longitudinal tests

to ascertain whether effects are evident over time. More routine use of these designs are warranted in future research.

#### **8.4 Avenues for future research**

The previous section of the thesis highlights how studies of the thesis expand existing knowledge on the relationship between perfectionism and depressive symptoms and perfectionism and suicide ideation. Whilst much has been learnt from the thesis, it is clear there is still much to learn. The present section looks more broadly beyond the findings of the thesis and highlights a number of avenues for future research. For instance, the present section advocates for future research to integrate the PSDM with other explanatory models, in particular the diathesis-stress model, to include perfectionistic self-presentation in future tests of the PSDM, to examine the PSDM in clinical samples, to examine alternative mediators in the EMPDS, to produce a comprehensive model of perfectionism and suicidality, and to produce a perfectionism-mattering intervention for higher education institutions. Each of these issues are discussed in detail below.

##### **8.4.1 Integrating the PSDM and the diathesis-stress model.**

Building upon study three and study four which integrates the PSDM and EMPDS, future research may consider integrating the PSDM with other explanatory models, in particular the diathesis-stress model (Hewitt & Flett, 1993). Models of depression and suicidality are often grounded in diathesis-stress models (e.g., Hammen, 1991, 2006; O'Connor, 2011; Wenzel & Beck, 2008). These models emphasize how personal vulnerabilities (e.g., perfectionism) interact with negative life events to predict depressive symptoms and suicide ideation. Specifically, diathesis-stress models infer that personal vulnerabilities alone are not sufficient to cause the onset of depressive symptoms or suicide ideation. Rather, the co-occurrence of personal vulnerabilities and the onset of negative or stressful life events are necessary to instigate depressive symptoms and/ or suicide ideation

(Ingram et al., 2009). In particular, negative life events concerning interpersonal stress reactivity appear to be particularly predictive of depressive symptoms (e.g., Sheets & Armev, 2020; Sheets & Craighead, 2014; Stroud et al., 2011).

Personal vulnerabilities (e.g., socially prescribed perfectionism) are likely to interact and exacerbate exposure to negative life events. Models of depression also acknowledge how life events are interpreted and responded to may determine vulnerability (and severity) to depressive symptoms (Ingram et al., 2009). Drawing on Hammen's (1991, 2006) stress generation model, research suggests that personality traits (e.g., perfectionism) and characteristics may increase or generate stress reactivity to negative life events. However, the PSDM does not currently address the co-occurrence of situational and contextual factors (e.g., life events) in combination with personal vulnerabilities in the onset of depressive symptoms and suicide, and thus future research examining situational and contextual influences alongside the PSDM will be extremely informative.

In line with this suggestion, Sherry et al. (2016) advocate for future research to combine the PSDM with the diathesis-stress model by integrating personality-dependent mediators and personality-independent moderators via moderated-mediation. Personality-dependent interpersonal problems capture the stress generation people high in perfectionism may create or magnify themselves (e.g., extreme interpersonal sensitivity towards interpersonal encounters) and help explain why people high in perfectionism might experience interpersonal problems. Conversely, personality-independent problems are events that happen which are not under one's control (e.g., being marginalized). Examining both personality-dependent and personality-independent problems are important to understand *why* and *under what conditions* people high in perfectionism experience depressive symptoms and/or suicide ideation (Sherry et al., 2016). Given the lack of acknowledgement of negative

life events (particularly of an interpersonal nature) in the PSDM, an integration of the PSDM and the diathesis-stress model is an important avenue for future research.

#### **8.4.2 The inclusion of perfectionistic self-presentation in the PSDM.**

Future research on the PSDM may wish to examine interpersonal public manifestations of perfectionism, namely perfectionistic self-presentation (Hewitt et al., 2003). Perfectionistic self-presentation involves promoting one's perfection and concealing one's imperfections (Hewitt et al., 2003). In this regard this dimension is largely concerned with how one is perceived by others (Hewitt, 2020). Given the interpersonal nature of this dimension, recent expanded models of the PSDM have advocated for the inclusion of PSDM (Hewitt et al., 2017; Sherry et al., 2016). Theoretical accounts suggest that perfectionistic self-presentation behaviours are elicited as a means to secure connection with others (Hewitt et al., 2017). These behaviours, however, form a neurotic paradox as they foster greater disconnection from others, whereby others view them as cold, distant, or inauthentic. In turn, people exhibiting such perfectionistic behaviours view others as rejecting, which results in psychological distress and generates the very behaviours these individuals try to avoid (Hewitt et al., 2017).

Despite overlap with trait perfectionism, perfectionistic self-presentation has been found to be empirically distinct (e.g., Hewitt et al., 2003). Research has found perfectionistic self-presentation to predict unique variance in various mental health outcomes beyond trait dimensions of perfectionism, such as self-esteem (i.e., general, academic, and appearance self-esteem), generalized anxiety, and depressive symptoms (e.g., Casale et al., 2020b; Hewitt et al., 2003; Newby et al., 2017). In addition, perfectionistic self-presentation has predicted unique variance in mental health outcomes concerning social interactions with others. For instance, this interpersonal dimension has been found to predict unique variance in social self-esteem, social phobia, social interaction anxiety, and social performance anxiety (e.g.,

Hewitt et al., 2003). The role of perfectionistic self-presentation as a unique predictor of mental health outcomes and in particular more social mental health outcomes (e.g., social phobia), provide strong evidence for the need to consider the distinct role of perfectionistic self-presentation in the PSDM.

Perfectionistic self-presentation is thought to play a unique role in predicting suicidal behaviour, too. For example, Roxborough et al. (2012) found perfectionistic self-presentation to predict unique variance in suicide risk, beyond the influence of trait dimensions of perfectionism. Perfectionistic self-presentation, in particular, is thought to play a unique role in predicting suicide ideation due to an inability to reveal any signs of imperfections and distress (Flett et al., 2014b). This self-concealment component of perfectionistic self-presentation could be particularly harmful in the sense that self-concealment may prevent others from noticing apparent warning signs and precludes help-seeking, alongside generating greater disconnection from others (Friedlander et al., 2012). In line with this, research has found both self-concealment and perfectionistic self-presentation to predict suicide ideation (D'Agata & Holden, 2018). These findings provide further evidence to include perfectionistic self-presentation in the PSDM, particularly when examining suicidality as an outcome.

Research has found perfectionistic self-presentation to positively relate to a range of markers of social disconnection, too. Across various studies, for instance, perfectionistic self-presentation is positively related to bullying victimization, social hopelessness, interpersonal hopelessness, negative social feedback, interpersonal rumination, insecure attachment styles, relationship dissatisfaction, the need to belong, and feelings of not mattering (e.g., Casale et al., 2020a; Chen et al., 2012; Chen et al., 2015; Flett et al., 2012; Nepon et al., 2011; Robinson et al., 2022; Roxborough et al., 2012). More direct evidence comes from extant tests of the PSDM which have included perfectionistic self-presentational facets. To date,

research has found perfectionistic self-presentation to play a unique role in extant tests of the PSDM, examining various mental health outcomes, including depressive symptoms (e.g., Flett et al., 2012; Rnic et al., 2021; Smith et al., 2017b), social anxiety (e.g., Nepon et al., 2011) and suicidality as outcomes (e.g., Robinson et al., 2022; Roxborough et al., 2012). When perfectionistic self-presentation is included in tests of the PSDM, this dimension has emerged as just as important or, in some instances, more important than socially prescribed perfectionism (e.g., Roxborough et al., 2012). Collectively, research suggests that perfectionistic self-presentation play a key role in the PSDM and should continue to be included in future tests of the PSDM.

To date, almost all research which has included perfectionistic self-presentation in the PSDM has examined relationships cross-sectionally (e.g., Flett et al., 2014a; Nepon et al., 2011; Roxborough et al., 2012). A recent longitudinal study by Rnic et al. (2021), however, provides support for the inclusion of perfectionistic self-presentation longitudinally in the PSDM, by which perfectionistic self-presentation dimensions conferred vulnerability for depressive symptoms via social disconnection markers (social hopelessness, loneliness, and reassurance of worth). Notably, the authors also found specific sequential indirect effects to emerge with perfectionistic self-presentation and social disconnection. For instance, self-oriented perfectionism and socially prescribed perfectionism predicted dimensions of perfectionistic self-presentation, which in turn, led to greater social disconnection, and thus generated greater depressive symptomology. As such, future research examining perfectionistic self-presentation sequentially alongside trait perfectionism and various markers of social disconnection as mediators is warranted, in addition to more longitudinal tests of the PSDM with the inclusion of perfectionistic self-presentation.

#### **8.4.3 Examining the PSDM in clinical samples**

To date, most studies on the PSDM have been examined in non-clinical populations (e.g., Cha, 2016; Rnic et al., 2021; Smith et al., 2017b). In contrast, relatively little research on the PSDM has been examined in clinical samples (e.g., Dunkley et al., 2006; Hewitt et al., 2020; Roxborough et al., 2012). So far, only two studies exist examining depressive symptoms as an outcome in the PSDM in a clinical sample (Dunkley et al., 2006; Hewitt et al., 2020). Dunkley et al. (2006) found perfectionism to indirectly predict depressive symptoms three years later via negative social interactions and perceived social support. More recently, Hewitt et al. (2020) found self-oriented perfectionism, socially prescribed perfectionism, and other-oriented perfectionism to indirectly predict lower symptom reductions in depression post-treatment via perceived lack of quality friendships in psychiatric outpatients. In addition, while two studies have examined suicide ideation cross-sectionally as an outcome in the PSDM among clinical populations (Robinson et al., 2022; Roxborough et al., 2012), no longitudinal studies on the PSDM have examined suicide ideation in clinical populations.

It is important to note that studies measuring mental health outcomes (e.g., suicide ideation) in non-clinical populations typically report low base rates in these samples, producing a floor effect (e.g., Wetherall et al., 2019). A floor effect occurs when a large proportion of a sample report low mean scores on a scale. This is problematic because a floor effect attenuates relationships and suppresses variability in study variables (Lewis-Beck et al., 2003). A floor effect makes it difficult to differentiate among participants within a sample. In addition, data exhibiting floor effects are skewed and are found to produce biased estimates (Vogt & Johnson, 2015). For these reasons and given the lack of research in clinical samples in the PSDM, future research should investigate the extent to which findings generalize to clinical populations.



Clinical populations typically exhibit higher rates of mental health outcomes (e.g., suicide ideation) and greater variability in measures. As such, it would be expected that relationships within the PSDM would be more pronounced in clinical populations. It is possible, then, that relationships which have not emerged in previous studies in the PSDM in non-clinical populations, may emerge in clinical populations. There are, however, no studies on the PSDM and very few studies examining the relationship between perfectionism and depressive symptoms, and perfectionism and suicide ideation which have contrasted findings between a clinical and non-clinical sample (e.g., Hewitt et al., 1994; Sherry et al., 2003). In studies which have, there is some indication that some relationships are more pronounced in clinical samples (e.g., Sherry et al., 2003). Given the relatively limited research, future research examining the PSDM in clinical samples and contrasting the PSDM relationships in clinical vs. non-clinical populations may be particularly informative.

#### **8.4.4. The inclusion of alternative mediators in the EMPDS.**

The EMPDS currently pertains to a narrow set of variables with difficulty accepting the past conceptualized as the only mediator in the EMPDS (Graham et al., 2010). This contrasts with research on the PSDM which has examined a range of markers of social disconnection as mediators (e.g., interpersonal discrepancies, loneliness, social self-esteem; Rnic et al., 2021; Smith et al., 2017b; Smith et al., 2018b) While research on the EMPDS has substantiated theory suggesting difficulty accepting the past is an important mediator in the EMPDS (e.g., Sherry et al., 2015; Smith et al., 2020a; Smith et al., 2020b), research has exclusively examined difficulty accepting the past as markers of existentialism with exception of one study which examined search for and presence of meaning in life (Park & Jeong, 2016). There are, however, other important existential mediators that have not been examined in the EMPDS and, to date, research on the EMPDS has provided a very narrow representation of manifestations of existentialism. Clearly, the inclusion of a broader range of

existential markers in the EMPDS (e.g., search for and presence of meaning in life, reasons for living) is warranted.

In particular, the EMPDS conceptualizes meaning in life as central to understanding why people higher in socially prescribed perfectionism are prone to experiencing depressive symptoms (Graham et al., 2010). However, surprisingly most research on the EMPDS has not directly tested meaning in life as a mediator (e.g., Graham et al., 2010; Sherry et al., 2015; Smith et al., 2020a). People higher in socially prescribed perfectionism, for instance, are thought to interrupt the process of meaning making due to a sense of compliance and conformity with others' expectations (Graham et al., 2010). Likewise, the occurrence of compulsive behaviours and overstriving often leads to rigid and narrow life experiences which impede opportunities for personal growth and meaningful relationships and experiences (Graham et al., 2010). In addition, existential theorists propose that people who are unable to find meaning and purpose in one's life are prone to depressive symptoms (Frankl, 1984). Empirical evidence also suggests meaning in life is important within the EMPDS. Heisel and Flett (2014), for instance, found in meaning in life to significantly protect against suicide ideation, controlling for risk factors and resiliency factors. Likewise, research suggests that the presence of meaning in life and the search for meaning in life predicts decreased suicide ideation over time (Heisel et al., 2016; Kleiman & Beaver, 2013).

While theory and evidence support the inclusion of meaning in life within the EMPDS, to date, only one study has examined meaning in life within the EMPDS (Park & Jeong, 2016). Specifically, Park and Jeong (2016) examined the moderating role of the search for meaning in life and presence of meaning in life cross-sectionally within the EMPDS. The authors found support for the moderating role of search for meaning in life in relationships between maladaptive perfectionism (formed of discrepancy, standards, and order), and both depression and psychological distress in undergraduate students. Nevertheless, future

research is warranted to advance limitations of this study. For example, building on Park and Jeong's (2016) study, future research should examine the *mediating* role of the search for meaning of life in the EMPDS with the inclusion of suicide ideation as an outcome in the EMPDS. These relationships should also be replicated longitudinally as in study four of the thesis and should utilise other more widely used measures of perfectionism (e.g., HF-MPS; Hewitt & Flett, 1991b). In addition, given findings from thesis demonstrated that the EMPDS emerges as more significant within older populations, alongside research which found the search for meaning to be more strongly associated with poorer wellbeing in later life (Steger et al., 2009), research examining the search for meaning in life in the EMPDS in older adults is warranted.

Evidence suggests other existential variables are also important in the EMPDS. Socially prescribed perfectionism, in addition to other more maladaptive measures of perfectionism, for instance, have been examined in relation to various other markers of existentialism. Research examining socially prescribed perfectionism has found this dimension to be positively related to negative future thinking, negative future expectations, and reasons for living (e.g., Dean & Range, 1996; O'Connor et al., 2004; Stoeber & Corr, 2017). In addition, studies have found markers of existentialism to emerge as risk and protective factors for both depressive symptoms and suicide ideation. For instance, lack of positive expectations hopelessness and overgeneralized autobiographical memory recall have also emerged as risk factors for depressive symptoms (Horwitz et al., 2017; Gibbs & Rude, 2004) and reasons for living has emerged as a protective factor for suicidality (e.g., Heisel et al., 2016).

Research also exists which have examined markers of existentialism as mediating or intervening variables in relationships between perfectionism and mental health outcomes (Dean & Range, 1996; Dean et al., 1997; O'Connor et al., 2007; Rasmussen et al., 2008).

However, these studies have not examined the EMPDS directly. Dean and Range (1996), for instance, found socially prescribed perfectionism to indirectly predict suicidal behaviours through reasons for living. Rasmussen et al. (2008) found socially prescribed perfectionism to interact with overgeneral recall of positive and negative memories to predict depression and suicide ideation. In addition, O'Connor et al. (2007) found lower socially prescribed perfectionism to interact with greater future positive thinking to predict lower hopelessness and suicide ideation. Here, collective evidence suggests that alternative existential mediators, such as reasons for living, overgeneralized memory recall, and future positive thinking, among others, may be important in explaining why socially prescribed perfectionism leads to depressive symptoms and suicide ideation within the EMPDS.

#### **8.4.5 A need for a comprehensive perfectionism-suicidality model.**

The PSDM is a valuable theoretical model, which has provided notable contributions on the perfectionism-suicidality relationship so far (Hewitt et al., 2006). The PSDM, for instance, recognises the vital role of social disconnection in the relationship between perfectionism and suicide ideation. Despite this, the PSDM fails to acknowledge other important risk factors in the perfectionism-suicide ideation relationship and does not consider the complex interplay of risk factors which predispose individuals to experience suicidality (O'Connor & Nock, 2014). Research, for instance, has found a range of risk factors to play a role in the onset of suicidality (e.g., stressful life events, depression, hopelessness, defeat, internal entrapment; Howarth et al., 2020; Ribeiro et al., 2018; Wetherall et al., 2021) that should be considered alongside social disconnection when examining the perfectionism-suicide ideation relationship. Research would therefore benefit from a more comprehensive model of perfectionism and suicidality combining the many risk factors of suicidality.

The Integrated Motivational-Volitional model (O'Connor, 2011a; O'Connor & Kirtley, 2018) is the most comprehensive model of suicidality to date and could provide a

useful basis in forming a comprehensive model of perfectionism and suicidality. Specifically, the first phase of the Integrated Motivational-Volitional model captures the background context which renders individuals more susceptible to suicidality. For instance, this phase posits that vulnerability factors (e.g., socially prescribed perfectionism) interact with stressful life events (pre-motivational phase), which increase suicide risk. This phase highlights the importance of examining the onset of stressful life events in combination with vulnerability factors. However, importantly the PSDM does not acknowledge the role of stressful life events alongside perfectionism as a vulnerability factor (see also 7.4.1 Integrating the PSDM and the diathesis-stress model). Consequently, forming a comprehensive model of perfectionism and suicidality with the inclusion of perfectionism and diathesis-stress contexts as background factors for the onset of suicide ideation is an important step for future research.

The second phase of the Integrated Motivational-Volitional model, termed the motivational phase, focuses on the emergence of suicide ideation. This phase posits that feelings of defeat lead to entrapment in the presence of threat to self-moderators (e.g., rumination). In turn, feelings of entrapment contribute to suicide ideation in the presence of motivational moderators (e.g., perceived burdensomeness; see 1.6 Models of suicidality). The relationship between defeat, entrapment, and suicide ideation is conceptualized as the backbone of the motivational phase. Notably, however, the PSDM, does not consider feelings of defeat in regard to social disconnection, despite research which suggests that defeat does play an important role in response to socially prescribed perfectionism and interpersonal behaviours (Mushquash & Sherry, 2012). Given that socially prescribed perfectionism involves a sense of never being able to please others, feelings of failure and defeat are common (Wyatt & Gilbert, 1998). In support of these ideas, Wetherall et al. (2019) found socially prescribed perfectionism to indirectly predict defeat through negative social

comparisons. Furthermore, Wetherall et al. (2019) also found negative social comparisons to predict feelings of entrapment through defeat. In addition, according to the Integrated Motivational-Volitional Model, markers of social disconnection may also have the potential to moderate the relationship between entrapment and suicide ideation. In summary, future research forming a comprehensive model integrating the PSDM alongside feelings of defeat and entrapment in relation to suicidality is warranted.

While models of suicidality are informative in improving aspects of the PSDM, findings from the PSDM also highlight notable advances for research examining contemporary models of suicidality, such as the Integrated Motivational-Volitional model (O'Connor, 2011a). While it should be noted that the Integrated Motivational-Volitional Model does not integrate an exhaustive number of variables to understand suicidality and is suggested to be modelled as a framework to integrate other psychological factors (O'Connor, 2011b), at present limited markers of social disconnection have been acknowledged and tested within the Integrated Motivational-Volitional model (e.g., thwarted belongingness, perceived burdensomeness, loneliness, social support, and negative social comparisons; Branley-Bell et al., 2019; Dhingra et al., 2015; McClelland et al., 2021; Wetherall et al., 2019). Research from the PSDM suggests that many other markers of social disconnection (e.g., social hopelessness, bullying, interpersonal hopelessness; Robinson et al., 2022; Roxborough et al., 2012) are important when examining the perfectionism-suicidality relationship and should be examined in future research on the Integrated Motivational-Volitional model.

In addition, to date research examining perfectionism within the Integrated Motivational-Volitional model is limited (Branley-Bell et al., 2019; Wetherall et al., 2019), some of which has not included perfectionism as a key focus (Branley-Bell et al., 2019). Furthermore, research has also only focused on socially prescribed perfectionism as a

vulnerability factor for suicide ideation (e.g., Wetherall et al., 2019). As such, no research has examined the role of other dimensions of perfectionism, such as perfectionistic self-presentation in the Integrated Motivational-Volitional model of suicidal behaviour.

Perfectionistic self-presentation, however, is considered to play an important role in the onset of suicide ideation beyond the role of trait dimensions of perfectionism (e.g., Roxborough et al., 2012). This dimension is particularly important in regard to the self-concealment aspect of perfectionistic self-presentation, which can prevent help-seeking or the emergence of warning signs (Flett et al., 2014b; see also 7.4.2 The inclusion of perfectionistic self-presentation in the PSDM). Future research examining the Integrated Motivational-Volitional model of suicidal behaviour should include other forms of perfectionism beyond socially prescribed perfectionism (e.g., perfectionistic self-presentation) as vulnerability factors for suicide ideation.

#### **8.4.6 A perfectionism-mattering intervention in higher education**

Given the mental health problems associated with perfectionism and feelings of not mattering, it is important to develop interventions and initiatives in higher education institutions. Interventions and initiatives can be implemented across campus in both learning environments and within student counselling. University staff should be educated on identifying perfectionism, feelings of not mattering, and mental health problems among students. Learning environments, too, should be adapted in ways which minimise perfectionism and reduce feelings of not mattering. Student counsellors can also play a role in identifying and challenging students perfectionistic thoughts and behaviours and feelings of not mattering. In addition, counsellors must be aware of the potential impact of students' perfectionism and feelings of not mattering on the therapeutic process (see Flett et al., 2019). These issues are discussed in more detail below.

Across campus, university staff that come into contact with students (e.g., lecturers and personal tutors) should be educated on how to better identify students' perfectionism, feelings of not mattering, and mental health problems. The learning environment should act as a focal point in which staff can aim to reduce perfectionism and feelings of not mattering, and instead reinforce to students that they are worthy and they matter, irrespective of their performance (Flett et al., 2019; Hill & Grugan, 2020). While reducing feelings of not mattering may seem idealistic, theory suggests that implementing small changes in interactions with students has the potential to make a big difference. Therefore, an intervention to reduce students' perceptions of not mattering should comprise of small, but realistic acts that indicate to students that they do matter (Flett et al., 2019). These acts are easier to implement in smaller classes, such as seminars and can include: increasing one-on-one or small group interactions between the student and teacher, providing roles and creating opportunities for students, showing interest in students, remembering small details about them and acting as the first point of contact for students who are struggling.

Treatment should also be provided for students struggling with perfectionism and/or feelings of not mattering, and associated mental health problems. Specifically, student counsellors must challenge students' perfectionistic thoughts, feelings of not mattering and other unmet interpersonal needs. In regards to perfectionism, cognitive behavioural therapy is found to be effective in reducing both perfectionism and mental health problems, by altering thoughts and behaviours and ought to be a key focus of treatment (Galloway et al., 2022). Counsellors should also equip students with the necessary coping and self-regulation skills to implement in interpersonal situations that reinforce to students that they do not matter (Flett, 2018). Finally, counsellors must recognise that perfectionism and feelings of not mattering can hinder the therapeutic process and that students will respond more effectively to treatment if they feel valued by their counsellor (e.g., Dixon Rayle, 2006; Flett et al., 2019;



Zuroff et al., 2000). In this regard, counsellors should aim to foster a good therapeutic relationship by verbally reminding students that they matter and by expressing care and compassion to reinforce feelings of worth (Flett et al., 2019). In summary, future research should implement a higher education institution intervention to support student populations experiencing mental health problems associated with perfectionism and mattering.

### **8.5 Limitations and other future directions**

This thesis must be considered in the context of its limitations. Firstly, across all studies, study variables were assessed using self-report measures, which may not accurately depict actual behaviour (Cook & Cook, 2008). Because self-report data also relies on participants to answer honestly, it is subject to response biases, such as social desirability (Paulhus & Vazire, 2007; Podsakoff et al., 2003). This is important given that trait dimensions of perfectionism are highly correlated to perfectionistic self-presentation, which involves engaging in self-concealment (Hewitt et al., 2003; see D'Agata & Holden, 2018). In this regard, it is likely that participants exhibiting high levels of perfectionism avoided disclosing or displaying signs of mental distress and underreported their experiences of depressive symptoms and suicide ideation (see Flett et al., 2014b). While it is possible that significant others could also be unaware of distress, the addition of informant reports may help overcome these biases (Smith et al., 2022).

A further methodological limitation was the non-experimental design of studies. No studies in the thesis involved random assignment or manipulation of variables, and instead relied upon interpretation and observation (Belli, 2009). Experimental research is necessary as it can infer causality (MacKinnon & Pirlott, 2015). In addition, observational mediation studies are often biased as they do not consider the presence of unobserved variables (e.g., other potential mediators) and alternative causal models (Fielder et al., 2011). Despite this, observational research is still important to determine relationships among variables, which

can later guide experimental research (MacKinnon & Pirlott, 2015). In addition, experimental research examining the PSDM and EMPDS raises ethical concerns which prevent research from being carried out in this area (e.g., manipulating feelings of not mattering). For this reason, an observational, non-experimental design was deemed the most appropriate approach for the thesis.

Moreover, the longitudinal timeframe in study two and study four may have been too short (three-waves separated by three weeks). Timelags between measurement occasions, for instance, have the potential to affect observed results (Gollob & Reichardt, 1991; Maxwell & Cole, 2007). It is possible, then, that nonsignificant findings, such as the indirect effect of socially prescribed perfectionism on suicide ideation over time via anti-mattering in study two may have become significant had these relationships had longer to unfold. With only six weeks between Time 1 and 3 and the related high rank-order stability, the elapsed time lag may have been too short to capture changes in suicide ideation. It is worth noting, however, that study two and study four of the thesis did still demonstrate significant effects within this timeframe. Likewise, previous studies on the PSDM and EMPDS have found a number of significant effects to emerge when utilising similar or even shorter timeframes (e.g., Graham et al., 2010; Mackinnon et al., 2012; Sherry et al., 2013a). In summary, future research would benefit from examining the PSDM and EMPDS using varying timeframes. In particular, research examining suicide ideation longitudinally in the PSDM and EMPDS using longer-term measurement designs may be particularly informative.

A quantitative design was adopted for each study in the thesis. While there are numerous advantages to quantitative research including the ability to quantify a phenomenon and examine relationships between variables, quantitative designs often oversimplify data and do not acknowledge the idiosyncrasies of participants' experiences (O'Dwyer & Bernauer, 2013). Employing qualitative methods, however, is necessary to capture richer and

more comprehensive understanding, in addition to acknowledging an individuals' social context. In particular, future research employing a purposeful sample of participants (e.g., those reporting higher levels of perfectionism and social disconnection) to complete semi-structured interviews using interpretative phenomenological analysis would be particularly informative (Pietkiewicz & Smith, 2014). This approach could be used to identify individuals in which the research question would be salient and to advance understanding of how people higher in perfectionism make sense of their feelings of not mattering or thoughts regarding their past, and mental health problems.

An additional limitation are the dropout rates of the university samples in study two and study four. For example, in study two the dropout rate of the university sample from Time 1 to 2 was 17.1%, and from Time 2 to Time 3 was 39.8%. Similarly, in study four, the dropout rate of the university sample from timepoint 1 to timepoint 2 was 35.8% and from Time 2 to Time 3 was 55.0%. Resulting from the high dropout rates, the university sample size at Time 3 were relatively low in study two ( $N = 109$ ) and study four ( $N = 108$ ). The high dropout rates in the student samples may be partly attributed to the declining attendance rates in lectures and seminars across the semester. While it is also possible that participants who dropped out of the study may have been experiencing elevated perfectionism, depressive symptoms or suicide ideation, t-tests revealed no statistical differences in variables between completers and non-completers in study two and four, aside from levels of socially prescribed perfectionism in study two. Here, it is possible that in line with Kline's (1998) suggestion of an  $N:q$  ratio of 10 to 20 participants per parameter, it is possible the university sample in study two and study four may have lacked adequate statistical power. Future research should recruit more participants than required (determined by power analysis) and build in strategies to help minimise dropout (McKnight et al., 2007).

Study two and study four tested a specific sequence of relationships based on theory and research of the PSDM (e.g., Flett et al., 2012; Hewitt et al., 2006; Hewitt et al., 2017) and the EMPDS (e.g., Graham et al., 2010). However, different sequences are possible. For instance, depressive symptoms and suicide ideation may generate heightened social disconnection, greater difficulty accepting the past or perfectionistic behaviours (e.g., Mushquash & Sherry, 2012; Steger & Kashdan, 2009; Smith et al., 2021). In particular, theory and research suggest that depressive symptoms are characterized by adverse interpersonal behaviours (e.g., hostility, reassurance-seeking, social withdrawal), which in turn generates greater social disconnection (e.g., Coyne, 1976; Sacco & Vaughan, 2006; Steger & Kashdan, 2009). In addition, a recent meta-analysis demonstrated that the relationship between perfectionistic strivings and depressive symptoms was unidirectional, whereas the relationship between perfectionistic concerns and depressive symptoms was reciprocal (Smith et al., 2021). Future research should also examine complication/scar effects or reciprocal effects to fully understand the directionality of these relationships.

All studies in the thesis focused on self-oriented perfectionism and socially prescribed perfectionism within the PSDM and did not focus on other-oriented perfectionism. Although other-oriented perfectionism is included in more recent expanded models of the PSDM (Hewitt et al., 2017; Sherry et al., 2016), research has typically found other-oriented perfectionism to be related to more objective forms of social disconnection (e.g., relationship dissolution arising from hostile and dominant behaviours; see Sherry et al., 2016), than subjective forms of social disconnection (e.g., feelings of not mattering; e.g., Flett et al., 2012). In addition, research suggests that people high in other-oriented perfectionism do not themselves suffer distress (e.g., Chen et al., 2017), but rather they generate social disconnection and distress in other people (e.g., Smith et al., 2017b; Smith et al., 2019a). In this regard, research on the PSDM has largely examined trait dimensions of perfectionism in

relation to subjective forms of social disconnection (e.g., Flett et al., 2012; Robinson et al., 2022; Rnic et al., 2021), but not objective social disconnection. Future tests of the PSDM, then, would benefit from examining the role of other-oriented perfectionism in relation to more objective forms of social disconnection (e.g., conflict).

Lastly, all studies in the thesis consisted of homogenous samples of university students and community adults from the United Kingdom, who were predominantly White British. As such, this thesis did not test differences in the study relationships cross-culturally. While cross-cultural differences in feelings of mattering are largely unknown (Flett, 2018b), prior research has found cross-cultural differences to exist in perfectionism (e.g., Smith et al., 2017a). Smith et al. (2017a) for instance, found significant differences in levels of self-oriented perfectionism and socially prescribed perfectionism between collectivistic and individualistic cultures. In addition, recent data shows that prevalence rates of depression and suicide differ across countries (Organisation Economic Co-operation and Development, 2019; World Health Organization, 2017). Therefore, in order to establish generalizability of the findings, future research should test the study relationships in other ethnicities and cultures (e.g., non-Western) to determine the extent to which findings replicate cross-culturally.

## **8.6 Thesis Conclusion**

The broad aim of this thesis was to advance understanding of the relationships between perfectionism, depressive symptoms, and suicide ideation by extending, integrating, and rigorously testing the PSDM and EMPDS. To achieve this aim, study one extended research by conducting a cross-sectional test of the PSDM which included anti-mattering as a mediator alongside mattering, and suicide ideation as an outcome alongside depressive symptoms. Study one, for the first time, demonstrated that socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation via anti-mattering (in both

university and community samples) and indirectly predicted depressive symptoms and suicide ideation via mattering (in a community sample only). Study two then addressed the limitations of study one by conducting one of the most robust longitudinal tests of the PSDM to date and found that socially prescribed perfectionism indirectly predicted depressive symptoms via anti-mattering over time (in a university sample only). Together, study one and two demonstrated the importance of the inclusion of anti-mattering as a mediator and provided partial support for the inclusion of suicide ideation within the PSDM.

Study three was also the first to extend the EMPDS to include suicide ideation as an outcome. In addition, this was the first study to integrate the PSDM and EMPDS into a novel model that included mattering and anti-mattering (from the PSDM) and difficulty accepting the past (from the EMPDS). Examining the EMPDS only, study three found socially prescribed perfectionism to predict both depressive symptoms and suicide ideation via difficulty accepting the past (in both a university and community sample). When examined in the integrated test, socially prescribed perfectionism was found to indirectly predict depressive symptoms and suicide ideation via anti-mattering and difficulty accepting the past in a university and community sample. Self-oriented perfectionism also indirectly predicted suicide ideation over time via mattering (in a university sample only).

Study four replicated relationships of study three by examining suicide ideation in the EMPDS longitudinally and conducting a robust longitudinal test of the integrated model. When the EMPDS was replicated in a more robust longitudinal design, socially prescribed perfectionism was found to indirectly predict both depressive symptoms and suicide ideation over time via difficulty accepting the past (in a community sample). In the integrated model, findings revealed that socially prescribed perfectionism indirectly predicted suicide ideation over time via anti-mattering (in a university sample only). In contrast, socially prescribed perfectionism indirectly predicted depressive symptoms and suicide ideation over time via

difficulty accepting the past (in a community sample only). The latter studies of the thesis support the inclusion of suicide ideation in the EMPDS and advocate for future research to continue integrating explanatory models. Study four was also the first to demonstrate the specificity of samples, where the PSDM emerged as most relevant to undergraduate samples and the EMPDS emerged as most relevant to community samples.

Collectively, findings of the thesis highlight three important advancements for future research. First, while anti-mattering had not previously been examined in the PSDM, findings advocate for anti-mattering to replace feelings of low mattering in future tests of the PSDM and in other research examining the mattering-depressive symptoms and mattering-suicide ideation relationship. In line with the notion that anti-mattering is more destructive than low feelings of mattering (Flett, 2018b; Flett, 2022; Flett et al., 2022b), anti-mattering emerged as a much stronger and more consistent marker of social disconnection throughout all studies of the thesis. Anti-mattering therefore provides a better understanding of why people high in perfectionism are vulnerable to mental health problems and should be the focus of future research.

Second, findings advocate for suicide ideation to be included as a key outcome in both the PSDM and EMPDS. While consistent, but imperfect support was found when examining suicide ideation in the PSDM and EMPDS, suicide ideation is clearly a key aspect of both models. Previously, suicide ideation had largely been overlooked in the PSDM and had not been examined in the EMPDS. However, findings of the thesis demonstrated that suicide ideation is an equally important outcome alongside depressive symptoms. Given these findings and the lack of research examining suicide ideation in the PSDM and EMPDS, future tests of these models should continue to examine suicide ideation as a key outcome.

Third, when contrasting the PSDM, the EMPDS, and the integrated model (combining the PSDM and EMPDS), it is apparent that all models play their own unique part in

understanding relationships between perfectionism and both depressive symptoms and suicide ideation. Notably, so far studies examining the PSDM and EMPDS have not considered that these theoretical models may be better suited to specific samples, and instead have generalized explanatory models across various samples. The thesis, then, makes an important advancement in identifying that the PSDM should primarily be utilised in university samples, whereas the EMPDS should primarily be utilised in older community adults. This was evident in the longitudinal test of the PSDM, the EMPDS, and the integrated model. Future research, then, should continue to contrast explanatory models and integrate explanatory models in various samples.



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**List of abbreviations**

AMS	Anti-Mattering Scale
ASIQ	Adult Suicide Ideation Questionnaire
ACPAST	Accepting the Past Scale
BSS	Beck Scale for Suicide Ideation
CES-D-SF	Centre for Epidemiological Depression Scale – Short form
DSM-5	Diagnostic and Statistical Manual for mental disorders, 5 <sup>th</sup> edition
EMPDS	Existential Model of Perfectionism and Depressive Symptoms
GMS	General Mattering Scale
HF-MPS	Hewitt and Flett's Multidimensional Perfectionism Scale
HF-MPS-SF	Hewitt and Flett's Multidimensional Perfectionism Scale – Short form
PSDM	Perfectionism Social Disconnection Model

## Appendix A

### A.1 Study 1 ethical approval letter

York St John University,  
Lord Mayors Walk,  
York,  
YO31 7EX

04/06/2018

**York St John University Cross School Research Ethics Committee**  
(Health Sciences, Sport, Psychological and Social Sciences and Business)

Dear Marianne,

**Title of study:** A test of the Perfectionism Social Disconnection Model  
**Ethics reference:** 000016116/04062018  
**Date of submission:** 18/04/2018

I am pleased to inform you that the above application for ethical review has been reviewed by the Cross School Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Ethics form	31/05/2018
Study 1 Questionnaire	31/05/2018
Consent form	31/05/2018
Debriefing	31/05/2018
Participant information sheet	31/05/2018
Responses to feedback	31/05/2018

The committee recommend you include a date by when participants can no longer withdraw their data, or consider extending the time period to approximately four weeks. In addition, a brief explanation of what is meant by social disconnection would be useful.

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study.

Yours sincerely,



Nathalie Noret

## A.2 Study 2 ethical approval letter

York St John University,  
Lord Mayors Walk,  
York,  
YO31 7EX

26<sup>th</sup> April 2019

**York St John University Cross School Research Ethics Committee**  
(Health Sciences, Sport, Psychological and Social Sciences and Business)

Dear Marianne,

**Title of study:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection.  
**Ethics reference:** Etherson\_26/04/2019  
**Date of submission:** 12/02/2019

I am pleased to inform you that the above application for ethical review has been reviewed by the Cross School Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Research Ethics Form	12/02/2019
Debrief	12/02/2019
Questionnaire	25/04/2019
Responses to Feedback	25/04/2019

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study.

Yours sincerely,



Nathalie Noret

### A.3 Study 3 ethical approval letter

Email sent to  
UREC

UREC Ø3

Est.  
1841 | YORK  
ST JOHN  
UNIVERSITY

York St John University  
Lord Mayor's Walk  
York YO31 7EX

+44(0)1904 624 624  
www.yorks.ac.uk

#### University Research Ethics Committee

#### Chair's Action

Ethical Approval has been considered and approved in line with the committee's terms of reference:

<b>Title of Research</b>	An integrated approach to the Existential Model of Perfectionism and Perfectionism Social Disconnection Model.
<b>Researcher</b>	Marianne Etherson
<b>School</b>	School of Sport
<b>Internal Collaborations</b>	Prof Andrew Hill
<b>External Collaborations</b>	Dr Simon Sherry
<b>Start Date of Project</b>	04 September 2019
<b>Duration of Project</b>	18 Months

Signed: Ronald Andrew Smith

Chair University Research Ethics Committee

Date: 21 / 11 / 19

N.B. Signed after circulation to uni  
com / conversation with school  
of sport ethics / looking at  
previous applications /



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#### A.4 Study 4 Ethical approval letter

Est.  
1841 | YORK  
ST JOHN  
UNIVERSITY

York St John University,  
Lord Mayors Walk,  
York,  
YO31 7EX

13/01/20

#### School of Science, Technology, and Health Research Ethics Committee

Dear Marianne,

**Title of study:** An integrated approach to the Existential Model of Perfectionism and Perfectionism Social Disconnection Model.

**Ethics reference:** STHEC0003

**Date of submission:** 11/11/2019

I am pleased to inform you that the above application for ethical review has been reviewed by the School of Science, Technology, and Health Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Application for ethical approval form (incl. questionnaire, consent form, information sheet, debrief)	11/11/2019
Updated rumination scale (also for UREC03)	05/12/2019

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study. You are now free to begin data recruitment and collection for the above approved study.

Yours sincerely,



Dr Daniel Madigan  
Chair of the School of Science, Technology, and Health Research Ethics Committee



## Appendix B

### B.1 Study 1 Information sheet



#### INFORMATION SHEET

Title of the research study: A test of the Perfectionism Social Disconnection Model  
 Principal Investigator: Marianne E. Etherson, Ph.D. student, York St John University  
 Email: [m.etherson@yorksja.ac.uk](mailto:m.etherson@yorksja.ac.uk)  
 Faculty Supervisor: Dr. Martin M. Smith, Ph.D., York St John University  
 Email: [m.smith3@yorksja.ac.uk](mailto:m.smith3@yorksja.ac.uk)

#### **Introduction**

We invite you to take part in a research study being conducted by Marianne E. Etherson, who is a Ph.D. student at York St John University, and Dr Martin M. Smith who is a lecturer in Research Methods at York St John University. Your participation in this study is completely voluntary and you can withdraw from the study at any time, prior to anonymization of the data, without any negative consequences occurring. The study is described below. Please ask the principal investigator, who will be present during data collection, if you have any questions.

#### **Purpose of this study**

The main purpose of this study is to understand the link between perfectionism and mental health outcomes via social disconnection.

#### **Who can participate in the study?**

Anyone who is an undergraduate student can participate in the study.

#### **What will you be asked to do?**

You will be asked to complete a questionnaire, requiring approximately 15 minutes to complete, on one occasion only. This questionnaire will be completed in a classroom setting.

#### **Right to withdraw**

Your participation in the study is strictly voluntary. This means you are free to withdraw from this study at any time. There are no repercussions for withdrawing from the study.

#### **Possible risks and discomforts**

It is possible that some people might find responding to some of the questions sensitive or upsetting. We will advise them that if this is the case they might not want to take part. We have also provided details of other sources of information regarding the topics covered and organisations that can provide support if you become upset.

#### **To learn more about perfectionism:**

<https://www.adavic.org.au/files/cms/Fact%20Sheets/Tip%20Sheet%20-%20Perfectionism%20-%20ADAVIC%20-%202014%20-%20Nov.pdf>

**Possible Benefits**

There are no direct benefits from participating in the study. However, this study may provide indirect benefits by increasing knowledge on how perfectionism may influence mental health outcomes.

**Results of the study**

No individual results will be provided in the summary. All results presented will be in aggregate form only.

**Confidentiality and anonymity**

**Anonymity:** You will remain anonymous during the study. The consent form you sign will be removed from the questionnaire. Your individual data will not be reported in the study. All data will be presented in aggregate form only.

**Confidentiality:** All information obtained is strictly confidential. You will be provided with an ID number at the beginning of participation. Data provided will only contain this ID number. Thus, your personal information (name or contact information) will not be part of the study data files. This list linking ID numbers to your contact information will be kept in a locked filing cabinet. Office computers are password protected, thereby restricting access to study data files. The only individuals who will have access to your data are the Principal Investigator and the Principal Investigator's supervisor. However, there is a possibility that the data may be shared with colleagues outside of York St John University. Shared data will NOT include your name or contact information. All identifiable information will be removed before data is shared.

Hardcopies of research materials will be stored securely (i.e., in a locked cabinet) during the project. Following completion of the data collection, questionnaires and consent forms will be separated (anonymising the questionnaires/raw data). All hardcopies of research materials will be digitised and destroyed. Digital research materials will be stored on a password protected computer at YSJU. If the data is to be used as part of a publication, digitised research materials and data will be stored in accordance with standard recommendations (e.g., at least 5 years post publication, APA). If not, digitised materials will be destroyed within 12 months of the completion of the study.

**Problems or concerns**

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may wish to contact Nathalie Noret, who is a member of the Cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

**Thank you for participating in the study.**

## B.2 Study 1 Informed consent



### CONSENT FORM

Please feel free to address any questions you may have about the study to the principal investigator either now, or after you have participated.

**Study Title:** A test of the Perfectionism Social Disconnection Model

**Name of Principal Investigator:** Marianne E. Etherson

**Research Supervisor:** Martin M. Smith

**Address:** School of Sport, York St John University, Lord Mayors Walk, YO31 7EX

**Telephone:** 01904 876513

**Email:** [m.etherson@yorks.ac.uk](mailto:m.etherson@yorks.ac.uk)

**Please tick all boxes and date and sign where indicated below (X):**

**A.** I confirm that I have read and understood the information sheet for the above study and understand what is expected of me

**B.** I confirm that I have been given the opportunity to ask questions regarding the study and, if asked, my questions were answered to my full satisfaction

**C.** I understand that my participation is voluntary. I also understand that I may withdraw at any time (prior to anonymising the data) without giving a reason for my withdrawal and without penalty

**D.** I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

**E.** I give my consent for the analysis of my answers from the questionnaire

**F.** I understand that data collected about me during my participation in this study will be stored on a password-protected computer and that any files containing information about me will be made anonymous.

### Data Sharing

I consent to allow my data (which will not include my name or contact information) to be shared with colleagues of the Principal Investigator outside of York St John University.

Individuals with specific ethical concerns should contact the Research supervisor or a member of the Cross-school research ethics committee – email [n.noret@yorks.j.ac.uk](mailto:n.noret@yorks.j.ac.uk).

Please sign below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are confidential, that participation is voluntary and you may withdraw from the study at any time.

Participants' signature \_\_\_\_\_

Date: \_\_\_\_\_

### B.3 Study 2 Information sheet



#### INFORMATION SHEET

Title of the research study: Understanding the relationship between perfectionism and mental health outcomes via social disconnection.

Principal Investigator: Marianne E. Etherson, Ph.D. student, York St John University

Email: [m.etherson@yorksja.ac.uk](mailto:m.etherson@yorksja.ac.uk)

Faculty Supervisor: Dr. Martin M. Smith, Ph.D., York St John University

Email: [m.smith3@yorksja.ac.uk](mailto:m.smith3@yorksja.ac.uk)

#### **Introduction**

We invite you to take part in a research study being conducted by Marianne E. Etherson, who is a Ph.D. student at York St John University, and Dr Martin M. Smith who is a lecturer in Research Methods at York St John University. Your participation in this study is completely voluntary and you can withdraw from the study at any time, prior to anonymization of the data (up to 4 weeks after data collection), without any negative consequences occurring. The study is described below. Please ask the principal investigator, who will be present during data collection, if you have any questions.

#### **Purpose of this study**

The main purpose of this study is to understand the relationship between perfectionism and mental health outcomes via social disconnection. Perfectionism is a personality trait where individuals set extremely high standards and are very self-critical. Social disconnection refers to the feeling of being disliked and rejected by others. The project involves you (the participant) completing a questionnaire which addresses invasive and sensitive topics and may be psychologically distressing. The project includes scales measuring perfectionism, social disconnection, depressive symptoms, binge-drinking and suicide ideation. Some example questions are 'I felt that my life had been a failure', 'I have a weak wish to die' and 'My reasons for living outweigh my reasons for dying'.

#### **Who can participant in the study?**

Anyone who is an undergraduate student (from Sport Psychology or Research Methods modules) can participate in the study.

#### **What will you be asked to do?**

You will be asked to complete a questionnaire, requiring approximately 15 minutes to complete on three occasions, each separated by three weeks. The questionnaire will be completed in a classroom setting.

#### **Right to withdraw**

Your participation in the study is strictly voluntary. This means you are free to withdraw from this study at any time during data collection and up to 4 weeks after data collection has been carried out (prior to anonymization of the data). There are no repercussions for withdrawing from the study.

#### **Possible risks and discomforts**

It is possible that some people might find responding to some of the questions sensitive or upsetting. We will advise them that if this is the case they might not want to take part. We have also provided details of other sources of information regarding the topics covered and organisations that can provide support if you become upset.

### **Possible Benefits**

There are no direct benefits to participating in the study. However, this study may provide indirect benefits by increasing knowledge on how perfectionism may influence mental health outcomes.

### **Results of the study**

No individual results will be provided in the summary. All results presented will be in aggregate form only.

### **Confidentiality and anonymity**

**Anonymity:** You will remain anonymous during the study. The consent form you sign will be removed from the questionnaire. Your individual data will not be reported in the study. All data will be presented in aggregate form only.

**Confidentiality:** All information obtained is strictly confidential. Prior to participating, you will create a participant ID, which will be your date of birth (DD/MM) and the first three letters of your mother's maiden name. Data provided will only contain this ID number. Thus, your personal information (name or contact information) will not be part of the study data files. This list linking ID numbers to your contact information will be kept in a locked filing cabinet. Office computers are password protected, thereby restricting access to study data files. The only individuals who will have access to your data are the Principal Investigator and the Principal Investigator's supervisor. However, there is a possibility that the data may be shared with colleagues outside of York St John University. Shared data will NOT include your name or contact information. All identifiable information will be removed before data is shared.

Hardcopies of research materials will be stored securely (i.e., in a locked cabinet) during the project. Following completion of the data collection, questionnaires and consent forms will be separated (anonymising the questionnaires/raw data). All hardcopies of research materials will be digitised and destroyed. Digital research materials will be stored on a password protected computer at YSJU. If the data is to be used as part of a publication, digitised research materials and data will be stored in accordance with standard recommendations (e.g., at least 5 years post publication, APA). If not, digitised materials will be destroyed within 12 months of the completion of the study.

### **Problems or concerns**

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may wish to contact Nathalie Noret, who is a member of the Cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

**Thank you for participating in the study.**

## B.4 Study 2 Informed consent



### CONSENT FORM

Please feel free to address any questions you may have about the study to the principal investigator either now, or after you have participated.

**Study Title:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection.

**Name of Principal Investigator:** Marianne E. Etherson

**Research Supervisor:** Martin M. Smith

**Address:** School of Sport, York St John University, Lord Mayors Walk, YO31 7EX

**Telephone:** 01904 876513

**Email:** [m.etherson@yorks.j.ac.uk](mailto:m.etherson@yorks.j.ac.uk)

**Please tick all boxes and date and sign where indicated below (X):**

**A.** I confirm that I have read and understood the information sheet for the above study and understand what is expected of me

**B.** I confirm that I have been given the opportunity to ask questions regarding the study and, if asked, my questions were answered to my full satisfaction

**C.** I understand that my participation is voluntary. I also understand that I may withdraw at any time (prior to anonymising the data) without giving a reason for my withdrawal and without penalty

**D.** I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

**E.** I give my consent for the analysis of my answers from the questionnaire

**F.** I understand that data collected about me during my participation in this study will be stored on a password-protected computer and that any files containing information about me will be made anonymous.

### Data Sharing

I consent to allow my data (which will not include my name or contact information) to be shared with colleagues of the Principal Investigator outside of York St John University.

Individuals with specific ethical concerns should contact the Research supervisor or a member of the cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

Please sign below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are confidential, that participation is voluntary, and you may withdraw from the study at any time.

Participants' signature \_\_\_\_\_

Date: \_\_\_\_\_



## B.5 Study 1 and 2 Debrief sheet



### School of Sport

#### RESEARCH SUBJECT DEBRIEFING

**Study Title:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection.

**Researchers:**

Marianne E. Etherson, Principal Investigator

Email: [m.etherson@yorks.ac.uk](mailto:m.etherson@yorks.ac.uk)

Phone: 01904 876513

Dr. Martin M. Smith, Ph.D., Supervisor

Email: [m.smith3@yorks.ac.uk](mailto:m.smith3@yorks.ac.uk)

Phone: 01904 876761

Thank you for participating in our study. By completing the questionnaires, you have provided valuable information for our research project.

Our study examines how the personality trait, perfectionism, influences mental health outcomes via social disconnection. Perfectionism is a personality trait in which individuals set high standards and are very self-critical. Social disconnection refers to feeling disliked and rejected by others. Previous research suggests those higher in perfectionism are prone to experiencing mental health outcomes, such as depression and suicide ideation. One reason for this may be because of a greater sense of social disconnection those high in perfectionism experience, in comparison to those low on the trait.

If you are interested in finding out more, below are some references:

Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. (2006). Trait perfectionism dimensions and suicidal behavior. In T. E. Ellis (Ed.), *Cognition and Suicide: Theory, Research, and Therapy* (pp. 215-235). American Psychological Association.

Sherry, S. B., Mackinnon, S. P., & Gaudreau, C. G. (2016). Perfectionists don't play nicely with others: Expanding the social disconnection model. In F. M. Sirois & D. Molnar (Eds.), *Perfectionism, health, and well-being* (pp. 225-243). Springer.

Flett, G. L., Galfi-Pechenkov, I., Molnar, D. S., Hewitt, P. L., & Goldstein, A. L. (2012). Perfectionism, mattering, and depression: A mediational analysis. *Personality and Individual Differences*, 52, 828-832.

**If you feel any distress by issues addressed in the study and concerns about your mental health, please contact:**

**Mental Health Advice at York St John**

Mental Health Advisers at York St John can support students with already existing, or emerging, mental health diagnoses. Drop-in sessions are available for students. For further information:

Access the webpage:

<https://www.yorks.ac.uk/student-services/health-and-wellbeing-/access-wellbeing-support/mental-health-support/>

or email: [wellbeing@yorks.ac.uk](mailto:wellbeing@yorks.ac.uk)

**Improving Access to Psychological Therapies (IAPT)**

IAPT is an NHS service for Improving Access to Psychological therapies. It offers a range of evidence-based psychological therapies for common mental health problems.

If you have registered with a GP in York or Selby, you can access IAPT without a GP referral. Please email [tewv.iaptyorkselby@nhs.net](mailto:tewv.iaptyorkselby@nhs.net) or call 01904 556820.

**Samaritans**

Call 01904 655 888 (local call charges apply) or 116 123 (this number is free to call).

Alternatively email: [jo@samaritans.org](mailto:jo@samaritans.org).

**Young Minds**

Call 02070895050 or email <https://youngminds.org.uk/>

If you have any further questions on the study, please contact 01904 876513 or email [m.etherson@yorks.ac.uk](mailto:m.etherson@yorks.ac.uk).

**Thank you for your contribution to this research project – It is greatly appreciated.**

## B.6 Study 3 Information sheet



### INFORMATION SHEET

Title of the research study: Understanding the relationship between perfectionism, depressive symptoms, and suicide ideation.

Principal Investigator: Marianne E. Etherson, Ph.D. student, York St John University

Email: [m.etherson@yorks.j.ac.uk](mailto:m.etherson@yorks.j.ac.uk)

Faculty Supervisor: Dr. Martin M. Smith, Ph.D., York St John University

Email: [m.smith3@yorks.j.ac.uk](mailto:m.smith3@yorks.j.ac.uk)

#### **Introduction**

We invite you to take part in a research study being conducted by Marianne E. Etherson, who is a Ph.D. student at York St John University. Participation in this study is completely voluntary and you can withdraw from the study at any time, prior to anonymization of the data (up to 4 weeks after data collection), without any negative consequences occurring. The study is described below. Please ask the principal investigator, who will be present during data collection, if you have any questions.

#### **Purpose of this study**

The main purpose of this study is to understand the relationship between perfectionism and mental illness via social disconnection and difficulty accepting the past. Perfectionism is a personality trait where individuals set extremely high standards and are very self-critical. Social disconnection refers to the feeling of being disliked and rejected by others. The project involves you (the participant) completing a questionnaire which addresses invasive and sensitive topics and may be psychologically distressing. The project includes scales measuring perfectionism, social disconnection, difficulty accepting the past, depressive symptoms, and suicide ideation.

#### **Who can participate in the study?**

Anyone who is an undergraduate student can participate in the study.

#### **What will you be asked to do?**

You will be asked to complete a questionnaire, requiring approximately 15 minutes to complete, on one occasion only. This questionnaire will be completed in a lecture or seminar setting.

#### **Right to withdraw**

Your participation in the study is strictly voluntary. This means you are free to withdraw from this study at any time during data collection and up to 4 weeks after data collection has been carried out (prior to anonymization of the data). There are no repercussions for withdrawing from the study.

#### **Possible risks and discomforts**

It is possible that some people might find responding to some of the questions sensitive or upsetting. We will advise them that if this is the case they might not want to take part. We have also provided details of other sources of information regarding the topics covered and organisations that can provide support if you become upset.

**Possible Benefits**

There are no direct benefits from participating in the study. However, this study may provide indirect benefits by increasing knowledge on how perfectionism may influence mental health outcomes.

**Results of the study**

No individual results will be provided in the summary. All results presented will be in aggregate form only.

**Confidentiality and anonymity**

**Anonymity:** You will remain anonymous during the study. The consent form you sign will be removed from the questionnaire. Your individual data will not be reported in the study. All data will be presented in aggregate form only.

**Confidentiality:** All information obtained is strictly confidential. Prior to participating, you will be given a participant ID. Data provided will only contain this ID number. Thus, your personal information (name or contact information) will not be part of the study data files. This list linking ID numbers to your contact information will be kept in a locked filing cabinet. Office computers are password protected, thereby restricting access to study data files. The only individuals who will have access to your data are the Principal Investigator and the Principal Investigator's supervisor. However, there is a possibility that the data may be shared with colleagues outside of York St John University. Shared data will NOT include your name or contact information. All identifiable information will be removed before data is shared.

Hardcopies of research materials will be stored securely (i.e., in a locked cabinet) during the project. Following completion of the data collection, questionnaires and consent forms will be separated (anonymising the questionnaires/raw data). All hardcopies of research materials will be digitised and destroyed. Digital research materials will be stored on a password protected computer at YSJU. If the data is to be used as part of a publication, digitised research materials and data will be stored in accordance with standard recommendations (e.g., at least 5 years post publication, APA). If not, digitised materials will be destroyed within 12 months of the completion of the study.

**Problems or concerns**

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may wish to contact Nathalie Noret, who is a member of the Cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

**Thank you for participating in the study.**

## B.7 Study 3 Informed consent



### CONSENT FORM

Please feel free to address any questions you may have about the study to the principal investigator either now, or after you have participated.

**Study Title:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection and difficulty accepting the past.

**Name of Principal Investigator:** Marianne E. Etherson

**Research Supervisor:** Martin M. Smith

**Address:** School of Sport, York St John University, Lord Mayors Walk, YO31 7EX

**Telephone:** 01904 876513

**Email:** [m.etherson@yorks.j.ac.uk](mailto:m.etherson@yorks.j.ac.uk)

**Please tick all boxes and date and sign where indicated below (X):**

**A.** I confirm that I have read and understood the information sheet for the above study and understand what is expected of me

**B.** I confirm that I have been given the opportunity to ask questions regarding the study and, if asked, my questions were answered to my full satisfaction

**C.** I understand that my participation is voluntary. I also understand that I may withdraw at any time (prior to anonymising the data) without giving a reason for my withdrawal and without penalty

**D.** I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

**E.** I give my consent for the analysis of my answers from the questionnaire

**F.** I understand that data collected about me during my participation in this study will be stored on a password-protected computer and that any files containing information about me will be made anonymous.

**Data Sharing**

I consent to allow my data (which will not include my name or contact information) to be shared with colleagues of the Principal Investigator outside of York St John University.

Individuals with specific ethical concerns should contact the Research supervisor or a member of the cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

Please sign below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are confidential, that participation is voluntary, and you may withdraw from the study at any time.

Participants' signature \_\_\_\_\_

Date: \_\_\_\_\_

## B.8 Study 4 Information sheet



### INFORMATION SHEET

Title of the research study: Understanding the relationship between perfectionism and mental illness.

Principal Investigator: Marianne E. Etherson, Ph.D. student, York St John University

Email: [m.etherson@yorks.j.ac.uk](mailto:m.etherson@yorks.j.ac.uk)

Faculty Supervisor: Dr. Martin M. Smith, Ph.D., York St John University

Email: [m.smith3@yorks.j.ac.uk](mailto:m.smith3@yorks.j.ac.uk)

#### **Introduction**

We invite you to take part in a research study being conducted by Marianne E. Etherson, who is a Ph.D. student at York St John University. Participation in this study is completely voluntary and you can withdraw from the study at any time, prior to anonymization of the data (up to 4 weeks after data collection), without any negative consequences occurring. **You will be asked to generate a unique ID consisting of your birthday in the format DD/MM and the last 3 digits of your postcode e.g., 14121JP.** The study is described below. Please ask the principal investigator, who will be present during data collection, if you have any questions.

#### **Purpose of this study**

The main purpose of this study is to understand the relationship between perfectionism and mental illness via social disconnection and difficulty accepting the past. Perfectionism is a personality trait where individuals set extremely high standards and are very self-critical. Social disconnection refers to the feeling of being disliked and rejected by others. The project involves you (the participant) completing a questionnaire which addresses invasive and sensitive topics and may be psychologically distressing. The project includes scales measuring perfectionism, social disconnection, difficulty accepting the past, depressive symptoms, and suicide ideation.

#### **Who can participate in the study?**

Anyone who is an undergraduate student can participate in the study.

#### **What will you be asked to do?**

You will be asked to complete a questionnaire, requiring approximately 15 minutes to complete on three occasions (each separated by three weeks). This questionnaire will be completed in a lecture or seminar setting.

#### **Right to withdraw**

Your participation in the study is strictly voluntary. This means you are free to withdraw from this study at any time during data collection and up to 4 weeks after data collection has been carried out (prior to anonymization of the data). There are no repercussions for withdrawing from the study.

#### **Possible risks and discomforts**

It is possible that some people might find responding to some of the questions sensitive or upsetting. We will advise them that if this is the case they might not want to take part. We have also provided details of other sources of information regarding the topics covered and organisations that can provide support if you become upset.

### **Possible Benefits**

There are no direct benefits from participating in the study. However, this study may provide indirect benefits by increasing knowledge on how perfectionism may influence mental health outcomes.

### **Results of the study**

No individual results will be provided in the summary. All results presented will be in aggregate form only.

### **Confidentiality and anonymity**

**Anonymity:** You will remain anonymous during the study. The consent form you sign will be removed from the questionnaire. Your individual data will not be reported in the study. All data will be presented in aggregate form only.

**Confidentiality:** All information obtained is strictly confidential. Prior to participating, you will be given a participant ID. Data provided will only contain this ID number. Thus, your personal information (name or contact information) will not be part of the study data files. This list linking ID numbers to your contact information will be kept in a locked filing cabinet. Office computers are password protected, thereby restricting access to study data files. The only individuals who will have access to your data are the Principal Investigator and the Principal Investigator's supervisor. However, there is a possibility that the data may be shared with colleagues outside of York St John University. Shared data will NOT include your name or contact information. All identifiable information will be removed before data is shared.

Hardcopies of research materials will be stored securely (i.e., in a locked cabinet) during the project. Following completion of the data collection, questionnaires and consent forms will be separated (anonymising the questionnaires/raw data). All hardcopies of research materials will be digitised and destroyed. Digital research materials will be stored on a password protected computer at YSJU. If the data is to be used as part of a publication, digitised research materials and data will be stored in accordance with standard recommendations (e.g., at least 5 years post publication, APA). If not, digitised materials will be destroyed within 12 months of the completion of the study.

### **Problems or concerns**

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may wish to contact Nathalie Noret, who is a member of the cross-school research ethics committee – email [n.noret@yorks.j.ac.uk](mailto:n.noret@yorks.j.ac.uk).

**Thank you for participating in the study.**



**B.9 Study 4 Informed consent****CONSENT FORM**

Please feel free to address any questions you may have about the study to the principal investigator either now, or after you have participated.

**Study Title:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection and difficulty accepting the past.

**Name of Principal Investigator:** Marianne E. Etherson

**Research Supervisor:** Martin M. Smith

**Address:** School of Sport, York St John University, Lord Mayors Walk, YO31 7EX

**Telephone:** 01904 876513

**Email:** [m.etherson@yorks.j.ac.uk](mailto:m.etherson@yorks.j.ac.uk)

**Please tick all boxes and date and sign where indicated below (X):**

**A.** I confirm that I have read and understood the information sheet for the above study and understand what is expected of me

**B.** I confirm that I have been given the opportunity to ask questions regarding the study and, if asked, my questions were answered to my full satisfaction

**C.** I understand that my participation is voluntary. I also understand that I may withdraw at any time (prior to anonymising the data) without giving a reason for my withdrawal and without penalty

**D.** I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

**E.** I give my consent for the analysis of my answers from the questionnaire

**F.** I understand that data collected about me during my participation in this study will be stored on a password-protected computer and that any files containing information about me will be made anonymous.

### **Data Sharing**

I consent to allow my data (which will not include my name or contact information) to be shared with colleagues of the Principal Investigator outside of York St John University.

Individuals with specific ethical concerns should contact the Research supervisor or a member of the cross-school research ethics committee – email [n.noret@yorks.ac.uk](mailto:n.noret@yorks.ac.uk).

Please sign below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are confidential, that participation is voluntary, and you may withdraw from the study at any time.

Participants' signature \_\_\_\_\_

Date: \_\_\_\_\_

## B.10 Study 3 and Study 4 Debrief sheet

### School of Science, Technology, & Health

#### RESEARCH SUBJECT DEBRIEFING

**Study Title:** Understanding the relationship between perfectionism and mental health outcomes via social disconnection, and difficulty accepting the past.

**Researchers:**

Marianne E. Etherson, Principal Investigator

Email: [m.etherson@yorksj.ac.uk](mailto:m.etherson@yorksj.ac.uk)

Phone: 01904 876513

Dr. Martin M. Smith, Ph.D., Supervisor

Email: [m.smith3@yorksj.ac.uk](mailto:m.smith3@yorksj.ac.uk)

Phone: 01904 876761

Thank you for participating in our study. By completing the questionnaires, you have provided valuable information for our research project.

Our study examines how the personality trait, perfectionism, influences mental health outcomes via social disconnection, and difficulty accepting the past. Perfectionism is a personality trait in which individuals set high standards and are very self-critical. Social disconnection refers to feeling disliked and rejected by others. Previous research suggests those higher in perfectionism are prone to experiencing mental health outcomes, such as depression and suicide ideation. One reason for this may be because of a social disconnection, and difficulty accepting the past. This study aims to find out if this is the case.

If you are interested in finding out more, below are some references:

Smith, M. M., Smith, M. M., Sherry, S. B., Ray, C. M., Lee-Baggley, D. L., Hewitt, P. L., & Flett, G. L. (accepted). The existential model of perfectionism and depressive symptoms: Test of unique contributions and mediating mechanism in a sample of depressed individuals. *Journal of Psychoeducational Assessment*.

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.

Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. (2006). Trait perfectionism dimensions and suicidal behavior. In T. E. Ellis (Ed.), *Cognition and Suicide: Theory, Research, and Therapy* (pp. 215-235). Washington, DC: American Psychological Association.

**If you feel any distress by issues addressed in the study and concerns about your mental health, please contact:**

**Mental Health Advice at York St John**

Mental Health Advisers at York St John can support students with already existing, or emerging, mental health diagnoses. Drop-in sessions are available for students. For further information:

Access the webpage:

<https://www.yorks.ac.uk/student-services/health-and-wellbeing-/access-wellbeing-support/mental-health-support/>

or email: [wellbeing@yorks.ac.uk](mailto:wellbeing@yorks.ac.uk)

**Improving Access to Psychological Therapies (IAPT)**

IAPT is an NHS service for Improving Access to Psychological therapies. It offers a range of evidence-based psychological therapies for common mental health problems.

If you have registered with a GP in York or Selby, you can access IAPT without a GP referral. Please email [tewv.iaptyorkselby@nhs.net](mailto:tewv.iaptyorkselby@nhs.net) or call 01904 556820.

**Samaritans**

Call 01904 655 888 (local call charges apply) or 116 123 (this number is free to call). Alternatively email: [jo@samaritans.org](mailto:jo@samaritans.org).

**Young Minds**

Call 02070895050 or email <https://youngminds.org.uk/>

If you have any further questions on the study, please contact 01904 876513 or email [m.etherson@yorks.ac.uk](mailto:m.etherson@yorks.ac.uk).

**Thank you for your contribution to this research project – It is greatly appreciated.**

## Appendix C

### C.1 Demographics

#### ABOUT YOU:

1. Your gender (please tick)

Male       Female       I prefer to self-describe \_\_\_\_\_

2. Your age (in years) \_\_\_\_\_

3. Your ethnicity (**please circle**):

- Arab
- Asian or Asian British – Indian
- Asian or Asian British – Pakistani
- Asian or Asian British – Bangladeshi
- Asian or Asian British – any other Asian background
- Black or Black British – Caribbean
- Black or Black British – African
- Black or Black British – any other Black background
- Chinese
- Mixed – White and Black Caribbean
- Mixed – White and Black African
- Mixed – White and Asian
- Mixed – Any other mixed background
- White – British
- White – Irish
- White – any other White background... please state \_\_\_\_\_
- Any other ethnic origin group.... please state \_\_\_\_\_
- Prefer not to say

4. What is your current year of study? (e.g., 1st year, 2<sup>nd</sup> year)

\_\_\_\_\_

## C.2 Multidimensional perfectionism (Study 1 to 4)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4. These questions are about the kind of person you generally are, that is, how you usually have felt or behaved over the past several years.

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
One of my goals is to be perfect in everything I do.	1	2	3	4	5	6	7
I strive to be as perfect as I can be.	1	2	3	4	5	6	7
It is very important that I am perfect in everything I attempt.	1	2	3	4	5	6	7
I demand nothing less than perfection of myself.	1	2	3	4	5	6	7
I must work to my full potential at all times.	1	2	3	4	5	6	7
The better I do, the better I am expected to do.	1	2	3	4	5	6	7
Success means that I must work even harder to please others.	1	2	3	4	5	6	7
My family expects me to be perfect.	1	2	3	4	5	6	7
People expect nothing less than perfection from me.	1	2	3	4	5	6	7
People expect more from me than I am capable of giving.	1	2	3	4	5	6	7
Everything that others do must be of top-notch quality.	1	2	3	4	5	6	7
I have high expectations for the people who are important to me.	1	2	3	4	5	6	7
I can't be bothered with people who won't strive to better themselves.	1	2	3	4	5	6	7
If I ask someone to do something I expect it to be done flawlessly.	1	2	3	4	5	6	7
I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7

### C.3 Mattering (Study 1 to 4)

Listed below are a number of statements related to how much you feel you matter to others. Choose the rating you feel is best for you and circle the number provided. Please rate each answer in terms of how you have felt over the past MONTH.

	Not at all	A little	Some what	A lot
How important do you feel you are to other people?	1	2	3	4
How much do you feel other people pay attention to you?	1	2	3	4
How much do you feel others would miss you if you went away?	1	2	3	4
How interested are people generally in what you have to say?	1	2	3	4
How much do other people depend on you?	1	2	3	4

### C.4 Anti-mattering (Study 1 to 4)

Listed below are a number of statements related to how much you feel you matter to others. Choose the rating you feel is best for you and circle the number provided. Please rate each answer in terms of how you have felt over the past MONTH.

	Not at all	A little	Some what	A lot
How much do you feel like you don't matter?	1	2	3	4
How often have you been treated in a way that makes you feel like you are insignificant?	1	2	3	4
To what extent have you been made to feel like you are invisible?	1	2	3	4
How much do you feel like you will never matter to certain people?	1	2	3	4
How often have you been made to feel by someone that they don't care about what you think or what you have to say?	1	2	3	4

### C.5 Difficulty accepting the past (Study 3 and 4)

Listed below are a number of statements related to feelings of accepting the past. Please rate each answer based on your past. Please read each item and decide whether you agree or disagree and to what extent.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Thinking about the past brings more pain than pleasure.	1	2	3	4	5
I feel comfortable talking about the things I've done in the past.	1	2	3	4	5
Sometimes I have the feeling that I've never had the chance to live.	1	2	3	4	5
There are things from the past I will have to set right before I will be truly happy.	1	2	3	4	5
All in all, I am comfortable with the choices I have made in the past.	1	2	3	4	5
There are some disappointments in life that I will never be able to accept.	1	2	3	4	5
Some personal experiences from earlier on are still too difficult to think about.	1	2	3	4	5
Generally, I feel contented with the way my life has turned out.	1	2	3	4	5
There are things about my life that I have difficulty accepting.	1	2	3	4	5
I have not led a very meaningful life.	1	2	3	4	5
I look back on things I have done with a sense of satisfaction.	1	2	3	4	5
There are things from my past that frighten me.	1	2	3	4	5
When I look back on my past, I have a feeling of fulfilment.	1	2	3	4	5
I still feel angry about certain childhood experiences.	1	2	3	4	5
I don't worry about things that happened a long time ago.	1	2	3	4	5
I generally feel contented with what I have done so far in my life.	1	2	3	4	5



### C.6 Depressive symptoms (Study 1 to 4)

Listed below are a number of statements relating to depressive symptoms. Please rate each answer in terms of how you have felt over the past MONTH.

	Rarely or none of the time	Some or little of the time	Moderately or much of the time	Most or all of the time
I felt my life had been a failure.	0	1	2	3
I felt fearful.	0	1	2	3
I felt that I was just as good as other people.	0	1	2	3
People were unfriendly.	0	1	2	3
I felt that I could not shake off the blues even with the help from my friends or family	0	1	2	3
I was bothered by things that usually don't bother me.	0	1	2	3
I felt that everything I did was an effort.	0	1	2	3
I felt hopeful about the future.	0	1	2	3
I felt lonely.	0	1	2	3
I had trouble keeping my mind on what I was doing.	0	1	2	3

### C.7 Suicide ideation (Study 1)

Please carefully read each group of statements below. Circle the one statement of each group that **best** describes how you have been feeling for the **past MONTH, including today**. Be sure to read all of the statements in each group before making a choice.

#### Question 1

I have a moderate to strong wish to live. 0

I have a weak wish to live. 1

I have no wish to live. 2

#### Question 2

I have no wish to die. 0

I have a weak wish to die. 1

I have a moderate to strong wish to die. 2

#### Question 3

My reasons for living outweigh my reasons for dying. 0

My reasons for living or dying are about equal. 1

My reasons for dying outweigh my reasons for living. 2

#### Question 4

I have no desire to kill myself. 0

I have a weak desire to kill myself. 1

I have a moderate to strong desire to kill myself. 2

#### Question 5

I would try to save my life if I found myself in a life-threatening situation. 0

I would take a chance on life or death if I found myself in a life-threatening situation. 1

I would not take the steps necessary to avoid death if I found myself in a life-threatening situation. 2

**IF YOU HAVE CIRCLED THE ZERO STATEMENTS IN GROUPS 4 AND 5 SKIP DOWN TO GROUP 20.**

**Question 6**

I have brief periods of thinking about killing myself which pass quickly. 0

I have periods of thinking about killing myself which last for moderate amounts of time. 1

I have long periods of thinking about killing myself. 2

**Question 7**

I rarely or only occasionally think about killing myself. 0

I have frequent thoughts about killing myself. 1

I continuously think about killing myself. 2

**Question 8**

I do not accept the idea of killing myself. 0

I neither accept nor reject the idea of killing myself. 1

I accept the idea of killing myself. 2

**Question 9**

I can keep myself from committing suicide. 0

I am unsure that I can keep myself from committing suicide. 1

I cannot keep myself from committing suicide. 2

**Question 10**

I would not kill myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc. 0

I am somewhat concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc. 1

I am not or only a little concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc. 2

**Question 11**

My reasons for wanting to commit suicide are primarily aimed at influencing other people, such as getting even with people, making people happier, making people pay attention to me, etc. 0

My reasons for wanting to commit suicide are not only aimed at influencing other people, but also represent a way of solving my problems. 1

My reasons for wanting to commit suicide are primarily based upon escaping from my problems. 2

### Question 12

I have no specific plan about how to kill myself. 0

I have considered ways of killing myself but have not worked out the details. 1

I have a specific plan for killing myself. 2

### Question 13

I do not have access to a method or an opportunity to kill myself. 0

The method I would use for committing suicide takes time, and I really do not have a good opportunity to use this method. 1

I have access or anticipate having access to the method that I would choose for killing myself and also have or shall have the opportunity to see it. 2

### Question 14

I do not have the courage or ability to commit suicide. 0

I am unsure that I have the courage or the ability to commit suicide. 1

I have the courage and the ability to commit suicide. 2

### Question 15

I do not expect to make a suicide attempt. 0

I am unsure that I shall make a suicide attempt. 1

I am sure that I shall make a suicide attempt. 2

**Question 16**

I have made no preparations for committing suicide.	0
I am unsure that I shall make a suicide attempt.	1
I have almost finished or completed my preparations for committing suicide.	2

**Question 17**

I have not written a suicide note.	0
I have thought about writing a suicide note or have started to write one but have not completed it.	1
I have completed a suicide note.	2

**Question 18**

I have made no arrangements for what will happen after I have committed suicide.	0
I have thought about making some arrangements for what will happen after I have committed suicide.	1
I have made definite arrangements for what will happen after I commit suicide.	2

**Question 19**

I have not hidden my desire to kill myself from people.	0
I have held back telling people about wanting to kill myself.	1
I have attempted to hide, conceal, or lie about wanting to commit suicide.	2

### C.8 Suicide ideation (Study 2 to Study 4)

Listed below are a number of statements relating to suicide ideation/ suicidal thoughts. Please read each statement carefully and rate in terms of how often this thought was in your mind.

This thought was in my mind:	I never had this thought	I had this thought before but not in the past month	About once a month	Couple of times a month	About once a week	Couple of times a week	Almost every day.
I thought it would be better if I was not alive	0	1	2	3	4	5	6
I thought about killing myself.	0	1	2	3	4	5	6
I thought about how I would kill myself.	0	1	2	3	4	5	6
I thought about when I would kill myself.	0	1	2	3	4	5	6
I thought about what to write in a suicide note.	0	1	2	3	4	5	6
I thought about telling people I plan to kill myself.	0	1	2	3	4	5	6
I thought that people would be happier if I was not around.	0	1	2	3	4	5	6
I thought about how people would feel if I killed myself.	0	1	2	3	4	5	6
I wished I were dead.	0	1	2	3	4	5	6
I thought about how easy it would be to end it all.	0	1	2	3	4	5	6
I thought that killing myself would solve my problems.	0	1	2	3	4	5	6
I thought that others would be better off if I was dead.	0	1	2	3	4	5	6
I wished I had the nerve to kill myself.	0	1	2	3	4	5	6
I wished that I had never been born.	0	1	2	3	4	5	6
I thought that if I had the chance I would kill myself.	0	1	2	3	4	5	6

I thought about ways people kill themselves.	0	1	2	3	4	5	6
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I thought about killing myself but I would not do it.	0	1	2	3	4	5	6
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I thought about having a bad accident.	0	1	2	3	4	5	6
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I thought that life was not worth living.	0	1	2	3	4	5	6
---	---	---	---	---	---	---	---

I thought that my life was too rotten to continue.	0	1	2	3	4	5	6
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I thought that the only way to be noticed was to kill myself.	0	1	2	3	4	5	6
---	---	---	---	---	---	---	---

I thought that if I killed myself people would realize I was worth caring about.	0	1	2	3	4	5	6
--	---	---	---	---	---	---	---

I thought that no one cared if I lived or died.	0	1	2	3	4	5	6
---	---	---	---	---	---	---	---

I wondered if I had the nerve to kill myself.	0	1	2	3	4	5	6
---	---	---	---	---	---	---	---

I thought that if things did not get better I would kill myself.	0	1	2	3	4	5	6
--	---	---	---	---	---	---	---