PERFECTIONISM AND DISTRESS TOLERANCE AS PSYCHOLOGICAL VULNERABILITIES TO

TRAUMATIC IMPACT AND PSYCHOLOGICAL DISTRESS IN PERSONS WITH PSYCHOTIC ILLNESS

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ABSTRACT

Perfectionism has been linked with various indices of maladjustment but has not yet been formally investigated in persons with psychotic illness. There is also a call for more psychological formulations of psychotic illness and related interventions for assisting affected persons, particularly given the relevance of trauma in the development of psychosis. Accordingly, an exploratory study was conducted to evaluate socially prescribed perfectionism, perfectionistic self-presentation, and distress tolerance as psychological vulnerabilities associated with poorer theory of mind, stronger traumatic impact, and worse psychological distress in persons with psychotic illness. A sample of 61 persons with a diagnosed psychotic illness was recruited from a tertiary care organization in Toronto, Canada. Correlational results suggest that, as predicted, higher trait perfectionism and higher perfectionistic self-presentation were associated with lower distress tolerance, more shame, greater stress, and poorer theory of mind. Lower distress tolerance was also associated with elevated stress, shame, and poorer theory of mind. The results also support conceptual overlap among perfectionism, social anxiety, and paranoid ideation in persons with psychotic illness. A trauma-informed person-centered clinical formulation is presented, describing how perfectionism, perfectionistic self-presentation, and low distress tolerance may stem from disrupted attachment experiences and other circumstances with associated traumatic impact. Formulation-based clinical approaches that may benefit affected persons are described. The study results are also contextualized within the broader literatures on psychosis, perfectionism, trauma, and psychotherapy. Finally, future research directions are indicated.

DEDICATION

Lovingly dedicated to my family - Mom, Dad, Azar, Sara, and Noah - whose support, encouragement, understanding, and patience helped me to stay this course. This has been as much a journey for them as it has been for me.

Especially to my parents. To my mother, for the hours she spent talking with me and listening throughout the years, and for the ways she conveyed her faith in me without undue pressure, giving me space to choose things for myself. These sustained me through many of the most difficult periods, and I often slept better knowing that she was behind me no matter what. And to my father, for his investment in my education and firm belief that I could finish this degree. I always knew that no matter where you were, you were thinking of me, rooting for me, and believing in me. Mom encouraged me to think about what it meant to both of you to move to a new country, leaving behind everything and starting over, with hope that one day one of your son or daughters might become a 'doctor'. I have kept this in mind particularly over the last leg of this journey. I feel I'm only just beginning to understand how much this means to you. Thank you both for everything you've done, and everything you gave up for us.

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Introduction

The personality constructs trait perfectionism and perfectionistic self-presentation have been described as "destructive" (Blatt, 1995), based on demonstrated associations with various indices of maladjustment, including depression, anxiety disorders, eating disorders, personality disorders, suicide, difficulty with therapeutic alliance formation, and poor treatment outcome (see Hewitt, Flett, & Mikhail, 2017, for a summary). Trait perfectionism refers to three distinct yet related personality styles: maintenance of high standards for oneself, called self-oriented perfectionism; expectations of perfection in others, called other-oriented perfectionism; and belief that others hold one to very high expectations and standards, called socially prescribed perfectionism (Hewitt & Flett, 1991b). Research has established that socially prescribed perfectionism is the dimension that is associated most consistently with distress, suicidality, and psychological pain (see, for example, Flamenbaum & Holden, 2007; Flett, Hewitt, & Heisel, 2014). Perfectionistic self-presentation is an impression management style, and its facets refer to the characterological ways that trait perfectionism manifests interpersonally (Hewitt, Flett, Sherry, et al., 2003).

While trait perfectionism and perfectionistic self-presentation have been investigated in a variety of community and psychiatric populations, the relevance of these constructs among persons with psychotic illness has not been examined in prior research. Yet perfectionism is a broad and complex construct with characterological and interpersonal elements, some of which seem relevant to understanding psychotic illness. Distress tolerance, another personality construct, refers to one's capacity to experience, withstand, and accept difficult emotions (Simons and Gaher, 2005). In other words, distress tolerance is an emotion regulation capacity

that varies among individuals. Lower distress tolerance has also been linked with indices of

maladjustment, and is related to both trait perfectionism and perfectionistic self-presentation (see

Hassan, 2011, for a summary). As with trait perfectionism and perfectionistic self-presentation,

however, while distress tolerance has been investigated in a variety of populations, there are very

few studies of this construct in persons with psychotic illness. Despite the paucity of research in

this area, lower distress tolerance appears to be associated with the experience of distress in

psychotic illness (see Stanage-Becker, 2009).

Psychotic illnesses (i.e., schizophrenia, schizoaffective disorder, schizophreniform

disorder, bipolar I disorder, major depressive disorder with psychotic features, substance-induced

psychotic disorder, and psychotic disorder not otherwise specified) are serious mental illnesses

that affect 3.06-3.48% of the general population (Perälä et al., 2007), and are "among the most

burdensome and costly illnesses worldwide" (Rössler, Salize, van Os, & Riecher-Rössler, 2005,

p. 406). The prevalence rates of schizophrenia alone are even higher in Canada (Dealberto,

2013). With respect to the effect of psychotic illnesses, one Ontario report stated that the burden

of mental illness and addictions exceeds 1.5 times the burden of all cancers and seven times the

burden of all infectious diseases, with schizophrenia and bipolar disorder among the five

conditions with the highest impact on Ontarians' lives and health (Ratnasingham, Cairney,

Rehm, Manson, & Kurdyak, 2012). This impact applies to individuals' personal relationships,

educational and vocational trajectories, quality of life, and life expectancy, with additional

effects on caregivers, social assistance programs, and healthcare service utilization.

Research and theory on psychotic illnesses are already extensive, piquing practitioners'

and researchers' interests for over a century (see Ashok, Baugh, and Yeragani, 2012). While

much has been learned since Eugen Bleuler first used the term "schizophrenia" in 1908 (Ashok et al., 2012), it is still the case that psychotic illnesses continue to be associated with high personal, familial, and societal costs, described above. This suggests that some potentially important topics and themes remain to be addressed in the area of psychotic illness. The current dissertation was designed to address one of the voids in the literature. The current dissertation study sought to examine three personality factors, trait perfectionism, perfectionistic self-presentation, and distress tolerance, as psychological vulnerabilities to stronger traumatic impact and worse psychological distress in persons diagnosed with psychotic illness. One aim of this study is to contribute to the literature on psychological formulations of psychotic illness and provide avenues for psychological interventions to assist affected persons. The idea here was to further understanding of how particular ways of viewing oneself, one's worldview, and one's personal resilience may combine with the experience of challenging life events and daily stress to predispose one to, or amplify, psychological distress in those with psychotic illness.

A secondary aim of this study was to contextualize the results within the broader literatures on perfectionism, psychosis, and trauma, respectively, by examining how perfectionism relates to conceptually related factors already correlated with psychotic illness. In this study, trait perfectionism and perfectionistic self-presentation were examined in terms of their association with stress, social anxiety, paranoia, and theory of mind. Perfectionism was also examined in terms of its association to clinically relevant constructs in psychotic illness, namely shame, obsessive-compulsive disorder, and obsessive-compulsive personality disorder, and to a theoretically related construct, defeatist beliefs.

There is a prevailing biomedical view of psychotic illness that has maintained a

symptom-based focus with affected individuals. The reason for this is that psychotic illnesses are seen as biologically-based disorders, and there is a reasonably large body of scientific literature supporting this view. Furthermore, the relative success antipsychotic medications have had with controlling the positive symptoms of psychotic illnesses, has led to the prevalence and sometimes exclusive use of antipsychotic medications in the treatment of affected individuals. Until recently, relatively little scientific and clinical foci have been devoted to improving psychotherapies for psychotic illness. As a result, the development and advancement of psychological treatments for psychotic illness are not as established as biomedical treatments for the same conditions. Thus, beyond the conceptual contributions of this study, a third aim was to provide preliminary, formulation-based guidelines for clinicians working with affected individuals and directions for future research seeking to improve psychotherapies for psychotic illness.

This introduction continues with a brief summary of psychotic illness. Included in this summary are the psychiatric definition of psychotic illnesses, and the general rationale for further investigation of psychological formulations and related treatments. The summary of psychotic illness is followed by a description of the author's inspiration and rationale for the current dissertation study. This includes a brief description of the potential relevance of perfectionism and distress tolerance in psychotic illness. The next segment of the dissertation, the Background, then provides a detailed overview of theory and research on trait perfectionism, perfectionistic self-presentation, distress tolerance, and their relevance to psychotic illness. The Background segment also describes theory and research on other constructs investigated in this study, including theory of mind, paranoia, social anxiety, shame, and psychological distress.

Psychotic Illness

  Psychiatric Definition of Psychotic Illness. Psychotic illnesses, including schizophrenia, schizophreniform disorder, brief psychotic disorder, schizotypal personality disorder, schizoaffective disorder, delusional disorder, substance/medication-induced psychotic disorder, psychotic disorder due to another medical condition, and other specified or unspecified schizophrenia spectrum and other psychotic disorders, are serious mental illnesses that typically involve considerable distress, functional disturbance, and cognitive impairment. These difficulties often persist over long periods of time, or recur episodically following the index episode of psychotic experiences. The fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM; 2013) describes psychotic illnesses as a spectrum of disorders due to their overlapping symptom experiences and variations in course that often take place over the lifespan.

  The DSM (2013) outlines defining features of "schizophrenia spectrum and other psychotic disorders", including delusions, hallucinations, disorganized thinking, disorganized or abnormal motor behavior, and negative symptoms. The term delusion refers to fixed beliefs that are not widely accepted by society. Hallucinations refer to perceptual experiences in the absence of external stimuli. Delusions and hallucinations are typically referred to as positive symptoms, as they are viewed as the "addition" of experiences beyond one's premorbid state. Disorganized thinking is usually inferred from verbal communication and is indicated by topic shifts, loosely related or unrelated information, or incomprehensible speech characterized by words that do not logically go together. Disorganized or abnormal motor behavior includes diminished response to environmental stimuli, as with catatonia or mutism; excessive behavior or behavior that does not

appear goal-directed; and stereotyped movements, including staring and echoing of speech. Negative symptoms refer to reduced emotional expression, diminished interest and engagement in meaningful or goal-directed activities; reduced speech output; decreased ability to experience pleasure; and reduced interest in social interactions. Regarding negative symptoms, "negative" refers to reduced capacities in specific areas required for adaptive functioning.

Psychiatric terminology has been discussed extensively elsewhere (e.g., American Psychiatric Association, 2013), as it is meritorious in its own right by providing a framework for communication among professionals. In addition, description and classification of psychotic experiences are sources of considerable philosophical and theoretical debate (see, for example, Geekie & Read, 2009). Given the person-centered formulation focus adopted in this study, the diagnosis and classification of psychotic symptoms are large topics that are relatively tangential to this dissertation and thus will not be discussed further here. For more information on the nosology of psychotic illnesses, please see the DSM (American Psychiatric Association, 2000, 2013). See also Potuzak, Ravichandra, Kewandowski, Ongür, and Cohen (2012).

Rationale for Further Investigation of Psychological Formulations of, and Related Treatments for, Psychotic Illness. A 2002 study of schizophrenia estimated the total annual cost of illness to be $62.7 billion in the United States (Wu et al., 2005); similar costs are reported for other countries around the world (Knapp, Mangalore, & Simon, 2004). The burden of psychotic illness is compounded by non-psychiatric comorbidities that threaten not only quality of life and health but also life expectancy, including obesity, cardiovascular disease, and type 2 diabetes mellitus (Ganguli & Strassnig, 2011; Pillinger et al., 2017; see also Strassnig, Brar, &

Ganguli, 2003, 2012). Thus, the need for effective intervention to reduce the burden and costs associated with psychotic illnesses is exceedingly high.

The efficacy of antipsychotic medications relative to placebo in the acute treatment of schizophrenia and related disorders is supported by over 100 double-blind research studies (Dixon, Lehman, & Levine, 1995). The strength of this evidence has led the Schizophrenia Patient Outcome Research Team (PORT; a task force jointly funded by the National Institute of Mental Health and the Agency for Health Care Policy and Research for the purpose of identifying interventions that efficaciously improve outcomes in schizophrenia) to recommend that antipsychotic medications be used as first-line treatment for acute psychotic episodes (Kreyenbuhl, Buchanan, Dickerson, & Dixon, 2010). Antipsychotics have demonstrated efficacy in reducing positive symptoms (e.g., Dixon et al., 1995), including delusions, hallucinations, thought disorder, and bizarre behavior. They are also efficacious in rapidly treating acute agitation (Wright et al., 2001) and insomnia (Miller, 2004). For many individuals, positive symptoms, sleep disturbance, and agitation are among the most distressing aspects of psychotic illness, and the relief conferred by antipsychotics is their largest benefit. Additionally, antipsychotics are efficacious in preventing relapse (Leucht et al., 2012), thus promoting stability in functioning and symptomatology. Hospitalization following psychiatric relapse is a harrowing experience for many individuals; hence, for many individuals, the potential for preventing future hospitalization due to the recurrence of positive symptoms is a further benefit of antipsychotic medications. Notably, commentary on antipsychotic efficacy in reducing negative symptoms is generally lacking in the literature and the evidence that is presented is unclear (Dixon et al., 1995).

Other studies suggest there may also be a role for psychosocial interventions in improving the lives of persons living with psychotic illnesses. While positive symptoms, sleep disturbance, and acute agitation are most distressing to affected persons in the midst of a psychotic episode and respond well to antipsychotic treatment, it is the case that negative symptoms, low self-esteem, and self-judgement regarding the experience of positive symptoms confer the most functional impairment and contribute to diminished quality of life. These difficulties are not addressed by antipsychotic treatment. Functional impairment and diminished quality of life may be pronounced in persons with earlier age of psychotic illness onset, which is associated with more negative symptoms, hospitalizations, and relapses, and poorer psychosocial functioning and global outcome (Immonen, Jääkeläinen, Korpela, & Miettunen, 2017).

Functional impairment and decreased quality of life, in turn, lead to increased healthcare utilization and social service costs. Thus, it is arguable that treatment plans for affected persons must address negative symptoms, self-esteem, functional outcome, and positive symptoms. Only in this way will it be possible to more fully address the personal toll, social burden, and economic costs associated with psychotic illness. Psychosocial interventions may improve not only negative symptoms, self-esteem, and functional outcome, but also the experience of positive symptoms. As such, psychosocial interventions may provide an additional treatment option for persons who wish to limit or avoid exposure to antipsychotic medication and medication-related comorbidities. Such comorbidities include obesity, cardiovascular disease, metabolic syndrome, and type 2 diabetes mellitus, all of which threaten health, quality of life, and life expectancy. Psychosocial interventions thus have the potential to be more comprehensive in their scope of application. They are also physically safer than antipsychotic medications.

Evidence from several randomized, controlled trials supports the efficacy and durability of cognitive behavior therapy in reducing positive and negative symptoms and improving functional outcomes (e.g., Grant, Huh, Perivoliotis, Stolar, & Beck, 2012; Rector & Beck, 2001; Tarrier, 2005; Turkington et al., 2006, 2008; Wykes, Steel, Everitt, & Tarrier, 2008). This evidence underlies the recommendation of cognitive behavior therapy as a standard of care for schizophrenia by both the Schizophrenia PORT in the United States (Dixon et al., 2010; Kreyenbuhl et al., 2010) and the National Institute for Health and Clinical Excellence (NICE) in the United Kingdom (NICE, 2009). Regarding the reduction of positive and negative symptoms and improvement of functional outcomes, emerging evidence also supports the efficacy and durability of integrative cognitive behavior therapies (Tai & Turkington, 2009), including acceptance and commitment therapy (e.g., Bach, Gaudiano, Hayes, & Herbert, 2013; Bach & Hayes, 2002; Bach, Hayes, & Gallop; 2012; Gaudiano & Herbert, 2006; Gaudiano, Herbert, & Hayes, 2010; White et al., 2011), mindfulness-based approaches such as mindfulness-based stress reduction and mindfulness-based cognitive therapy (e.g., Chadwick, Taylor, & Abba, 2005), metacognitive therapy (e.g., Harder & Folke, 2012; Hasson-Ohayon, 2012; Salvatore, Russo, Russo, Popolo, & Dimaggio, 2012; Valmaggia, Bouman, & Schuurman, 2007), compassionate mind training/compassion-focused therapy (e.g., Braehler et al., 2013; Mayhew & Gilbert, 2008), narrative therapy (e.g., France & Uhlin, 2006; Lysaker & Lysaker, 2006; Roe & Davidson, 2005), and interventions that integrate acceptance, mindfulness, and compassion (e.g., Khoury, Lecomte, Comtois, & Nicole, 2013; Martins, Castilho, Santos, & Gumley, 2016). Cognitive remediation and cognitive adaptation training have also demonstrated efficacy in improving functional outcomes in preliminary trials (e.g., Kidd et al., 2014; Maples & Velligan,

2008; Saperstein & Kurtz, 2013; Velligan et al., 2000, 2002). The evidence base underlying these newer psychosocial interventions for psychosis continues to grow, yet conclusions from these studies remain preliminary, owing to the relatively small number of randomized controlled trials in these areas, smaller sample sizes (including case study data), and lack of appropriate comparison groups, long-term follow-up data, and full intent-to-treat analyses. See Hassan (2015) for a more comprehensive review of the literature on psychotherapy interventions for psychosis, which critically summarizes theory and empirical data published between 2005 and May 2015.

The growth of the evidence body supporting a role for psychosocial interventions in the treatment of psychosis is driven by a call from clinicians, researchers, and affected individuals for development of psychosocial conceptualizations of psychosis and interventions to assist affected individuals toward recovery. This call is based, in part, on the recognition that psychosocial interventions may address aspects of psychotic illness that medications may not, such as negative symptoms, quality of life, role functioning, and self-esteem (see Grant et al., 2012; NICE, 2009; Sen, 2017; Turkington & Morrison, 2012), as described above. Moreover, preliminary evidence suggests that a potentially identifiable subset of individuals affected by the psychotic prodrome or early psychosis may fare better when treated with psychosocial interventions in the context of minimal or no pharmacologic treatment, relative to those treated via standard antipsychotic medication regimes (Bola & Mosher, 2002, 2003; Lehtinen, Aaltonen, Koffert, Räkköläinen, & Syvälahti, 2000). Additionally, research outlining problems with medication effectiveness, including non-adherence and iatrogenic medication side-effects

(Foussias & Remington, 2010), continues to provide the impetus to investigate psychosocial interventions for psychosis.

Finally, Lysaker and Roe (2012) argued that recovery may relate more to "recaptur[ing] a full sense of oneself regardless of reductions or increases in dysfunction or symptom severity" (p. 288) that are usually assessed in terms of medication efficacy. They summarized several first-person accounts of psychosis and recovery, highlighted that "symptom remission may leave persons without previous ways of meaning making" (Lysaker & Roe, 2012, p. 288), and concluded that integrative psychotherapy is needed to address certain aspects of recovery for those living with psychotic illnesses. Ronald Bassman, who has lived with schizophrenia for 40 years, echoed these sentiments, asking "Isn't there something better we can do for [those with psychotic illness] now? . . . Where are the alternatives to the one-size-fits-all-drugs-are-the-answer medical model?" (Bassman, 2012, p. 273). Strauss (1989) has similarly argued that psychological interventions have a role to play in understanding and effectively intervening with those who live with psychotic illnesses. In particular, Strauss called for attention to individuals' goals, life trajectories, and characteristic ways by which individuals experience the world and approach life.

Heeding the above, the current dissertation study examined the personality variables trait perfectionism, perfectionistic self-presentation, and distress tolerance as psychological vulnerabilities to stronger traumatic impact and worse psychological distress in a sample of persons with psychotic illness. This is a personality study that contributes to the literature on clinical psychological formulations of psychotic illness and provides avenues for psychological interventions to assist affected persons.

Rationale for the Current Study and Study Development

As part of another study supervised by Dr. R. Ganguli, the current author conducted diagnostic interviews with persons with early psychotic illness (i.e., within five years of initial diagnosis). As a way to establish the therapeutic alliance and facilitate a sense of comfort in the persons she interviewed, the current author asked participants to describe in their own words what was happening in their lives at the time that they first noticed that things were not going as well as they used to be. The author's experience with these interviews suggested that first-episodes of psychosis occur in vulnerable individuals following experiences with traumatic impact, including physical assault, abuse, neglect, significant loss, rejection, or failure in an area of considerable importance to the individual, as these themes were evident in nearly every interview conducted. There were also themes of intense fear, sadness, shame, and hopelessness. These interviews, though interesting, have not been formally studied or described in any of the published literature by Dr. Ganguli and his research team.

The author's master's thesis (Hassan, 2011) involved investigation of perfectionism and distress tolerance. While listening to participants' stories as she conducted interviews, the author wondered whether repeated or significant experiences of failure, loss, or rejection might be worse for persons who held themselves to high standards or felt others held them to high standards. In other words, the author wondered whether experiences of loss, disappointment, or rejection were worse for perfectionists. The author also considered early psychodynamic views of psychotic illness which suggest that psychosis functions to protect vulnerable individuals' psyches in the face of intolerable challenges. The author wondered whether the study participants were somehow unable to manage the intense emotions they described experiencing

prior to their first psychotic episodes or, in other words, if they were low in distress tolerance.

Thus, the current study is in some ways an extension of the author's previous research.

The author began reviewing the literature and learned that there were many studies

demonstrating links between traumatic experiences and subsequent experience of psychotic

illness (e.g., Mørkved et al., 2017; Read, van Os, Morrison, & Ross, 2005). However, she noted

that the existing literature attended more to neglect and sexual, physical, and emotional abuse,

often referred to as "Big T" traumas. The author wondered whether significant experiences of

loss, rejection, or failure might be traumatic to a person, and whether investigation of these types

of traumas in persons with psychotic illness might be instructive.

It turns out, in the trauma literature, "little t" traumas include significant or repeated

losses, rejections, or failures. This inclusive view of trauma stems from agreement among

experts that it is the subjective experience of an event, the impact and meaning of an event, that

constitutes trauma, rather than the objective experience itself (Allen, 2005; Briere, 2012;

Herman, 2015; Levine, 2015; Scaer, 2014; van der Kolk, 2014). Thus, for some, the attendant

stress may have immediate and longer-term emotional, physiological, cognitive, and

interpersonal effects, and affect how one sees oneself, others, and the world; whereas others may

experience similar events and adjust with relative ease. These differences in impact and

adjustment are based on a number of factors, for example, personality, social supports, cultural

teachings, and frequency and intensity of similar events. With this in mind, while one aspect of

the vulnerability to psychotic illness appears to be biologically or genetically based, it is possible

that there are psychological vulnerabilities to psychotic experiences, as well. Hence, the author

began developing a study with three personality factors, trait perfectionism, perfectionistic self-

presentation, and distress tolerance, as psychological vulnerabilities that may influence the experience of broadly defined traumatic experience.

Relevance of Perfectionism, Distress Tolerance, and Trauma in Psychotic Illness.
Early psychodynamic understandings of psychotic illness viewed the development of psychotic symptoms as ego-protective in the face of otherwise intolerable threats to an individual's self-concept, self-esteem, and worldview (e.g., Fromm-Reichmann, 1948; Sullivan, 1956; see also Koehler, Silver, & Karon, 2013), with those having stronger ego strength in better positions to make sense of, and maintain healthy psychological functioning in the face of, significant personal or interpersonal challenges. Bear in mind that significant challenges are often accompanied by intense and difficult emotions. Thus, one way to think about ego strength is in terms of an individual's ability to tolerate negative emotional states, which is a proxy for 'distress tolerance' as described in contemporary personality literature. A factor that may interact with distress tolerance is whether one perceives oneself to have fallen short of expectations in an area of great importance, irrespective of whether the expectations are self- or other-imposed, or merely perceived by one without any actual external pressure. These expectations can be understood in terms of perfectionism and perfectionistic self-presentation, which were defined above and are explained in more detail later in this dissertation. In this study, perfectionism and distress tolerance were conceptualized as psychological vulnerabilities to stronger traumatic impact and more psychological distress in persons with psychotic illness.

Another way of thinking about the formulation above is that three factors may contribute to the need for ego-protective psychotic symptoms, for example, delusions of grandeur (e.g., "I have been selected especially to bring the message of God to everyone on earth"). One factor is

low distress tolerance, which is diminished capacity for tolerating distress while being faced with the challenge of regulating intense emotions. The other factor is the meaning that individuals may ascribe to themselves when they have fallen short of expectations in an area of personal significance, which is indicated by varying levels of perfectionism. The third factor is how lower distress tolerance capacity and perfectionism interact with traumatic experiences. In turn, the psychological vulnerabilities of perfectionism and lower distress tolerance may contribute to additional experiences of distress, as affected individuals continue to experience loss, rejection, and failure in their lives, usually as a byproduct of positive symptomatology and functional impairment. This only serves to confirm their views of themselves. Shame and social anxiety may stem from fears that one has not only failed to meet expectations, but will also garner others' judgements and potential loss of love as a result. In extreme cases, this social anxiety (wherein others are viewed as harsh and judgmental) may manifest as paranoia.

In this study, trait perfectionism, perfectionistic self-presentation, low distress tolerance, and difficult life events were examined in persons identified as having a psychotic illness, to assess whether low distress tolerance and stronger perfectionistic tendencies may constitute a psychological vulnerability to stronger traumatic impact and worse psychological distress in those with psychotic illness. In consideration of the fact that there may be no way to objectively determine what constitutes "trauma" from one individual to another, particularly given the broad definition of trauma adopted in this study and that even experiences of sexual or physical trauma may be relatively well-integrated into the psyche of those who are more psychologically resilient, perceived stress was assessed as a quantifiable proxy of each individual's experience of stressful life events. Additionally, some research suggests that daily stressors have more

significant negative impact than singular traumatic events on persons with psychotic illness, and

are thus greater predictors of perceived stress (e.g., Norman & Malla, 1991; Tessner, Mittal, &

Walker, 2011).

Thus, the primary model proposed was one in which psychological vulnerability

comprised of stronger perfectionistic tendencies and lower distress tolerance leads to stronger

traumatic impact vis-à-vis the experience of difficult life events, more daily stresses, and more

perceived stress, which produces higher levels of psychological distress vis-à-vis shame, social

anxiety, and paranoia, which are all prominent clinical correlates of psychotic illnesses. Of

course, as part of this examination, correlational relationships were examined to determine if in

fact stronger perfectionistic self-presentation and socially prescribed perfectionism and lower

distress tolerance were associated with more psychological distress in this sample of persons

diagnosed with psychotic illness. These relationships confer specific clinical recommendations

and, while they have been established in other psychiatric populations, relatively few studies to

date have included persons with psychotic illness. Further theoretical and empirical support for

the relevance of perfectionism, distress tolerance, and trauma in psychotic illness, along with a

more detailed rationale for this primary model, are described in the Background section below.

Identification of Additional Constructs of Interest. A related aim of this study was to

contextualize the results within the broader literatures on each of psychosis, perfectionism, and

trauma, by examining how perfectionism relates to conceptually related factors that have

empirically established links with psychotic illness. The author's literature review, clinical

experience, and feedback from colleagues led to identification of several relevant constructs for

investigation. The factors that were considered included paranoid ideation, social anxiety, and

poor theory of mind, as these are often demonstrated by persons with psychotic illness and have strong conceptual overlap with perfectionism. Other factors that were considered included shame, obsessive-compulsive disorder, and obsessive-compulsive personality disorder, as these are clinical constructs that are often seen in persons with psychotic illness and may be explained in part by perfectionism. Finally, defeatist beliefs have an empirically demonstrated role in psychotic illness. Defeatist beliefs are also theoretically related to perfectionism and yet have never been acknowledged as such. To address this void, the current study assessed the relationship between defeatist beliefs and perfectionism in persons with psychotic illness. The rationales for including each of these constructs in this study are described below, and elaborated further in the Background section.

If perfectionistic self-presentation and socially prescribed perfectionism are, in fact, associated with lower distress tolerance and higher psychological distress in persons with psychotic illness, it would be theoretically and clinically relevant to understand to what extent perfectionism overlaps with common, conceptually-related correlates of psychotic illness, including paranoia, theory of mind deficits, and social anxiety.

Social cognition predicts functioning in those with schizophrenia (Harvey & Penn, 2010; Horan et al., 2012; see also Mancuso, Horan, Kern, & Green, 2011, and Couture, Penn, & Roberts, 2006). A facet of social cognition is theory of mind, which is the ability to infer the mental states of others. Theory of mind and paranoid ideation are conceptually related to the social aspects of perfectionism, namely socially prescribed perfectionism and perfectionistic self-presentation. To further understand how perfectionism may contribute to or interfere with social cognition, the relationships among theory of mind, paranoid beliefs, socially prescribed

perfectionism, and perfectionistic self-presentation were also examined. A model was proposed wherein higher levels of the social aspects of perfectionism, namely socially prescribed perfectionism and perfectionistic self-presentation, predict poorer performance on theory of mind tasks, which in turn predict higher levels of paranoia. This aspect of the study contributes conceptually to the literature and understanding of social cognition in psychotic illnesses, connects the broader perfectionism and psychosis literatures, and enhances psychological formulations of psychotic illness.

If stronger perfectionistic self-presentation is associated with more psychological distress in persons with psychotic illness, it would also be theoretically and clinically significant to understand associations with shame given its relevance to perfectionism in psychiatric samples and to stigma in psychotic illness. Shame figures prominently into the subjective experience of perfectionistic individuals, based on research with non-psychotic psychiatric samples, which is summarized below. Shame may also be particularly relevant to the clinical understanding of psychotic illness, given the problematic roles stigma and self-stigma play in the experience of affected persons (see, for example, Pyle & Morrison, 2017; Vass, Sitko, West, & Bentall, 2017), which some say is often worse than the illness experience itself. In this study, several variables were examined to understand how shame may interact with perfectionistic tendencies and contribute to the experience of psychological distress in persons with psychotic illness. A model was proposed wherein higher levels of socially prescribed perfectionism and perfectionistic self-presentation predict higher levels of shame which, in turn, predict higher levels of psychological distress. This aspect of the study sheds light on the phenomenological experience of persons living with psychotic illnesses and guides clinical recommendations for working with individuals

who are experiencing high levels of shame and psychotic symptoms.

Similarly, if stronger perfectionistic self-presentation were associated with more psychological distress in persons with psychotic illness, it would be theoretically and clinically relevant to understand differential associations between perfectionism and each of obsessive-compulsive disorder and obsessive-compulsive personality disorder in this sample of persons with psychotic illness. This rationale is based on the established association between psychotic illness and obsessive-compulsive disorder, and established association between perfectionism and obsessive-compulsive personality disorder. This aspect of the study enhances clinical conceptualizations of psychotic illness and adds to the literature on psychosis and perfectionism. This aspect of the study also helps to clarify the relationships among psychosis, perfectionism, obsessive-compulsive disorder, and obsessive-compulsive personality disorder, which are a source of confusion among clinicians, researchers, and even persons with psychotic illness.

In a related vein, if persons with psychotic illness are characterized by stronger perfectionistic tendencies, there is theoretical import in examining relationships between perfectionism and defeatist beliefs in the current sample, given conceptual relationships between perfectionism and defeatist beliefs. To the author's knowledge, this conceptual relationship has not yet been established in any population the literature. Evidence of an association between perfectionism and defeatist beliefs among persons with psychotic illness may improve the clinical formulation for the psychological treatment of psychotic illness (e.g., by proposing avenues for intervention, such as use of cognitive restructuring strategies to change problematic defeatist beliefs).

Finally, the third aim of this study is to provide preliminary guidelines for clinicians and

directions for future research seeking to improve psychotherapies for psychotic illness. It was anticipated that the study results would help to clarify the phenomenology of those living with psychotic illnesses. Clinicians and affected individuals may get a sense of how a person's intrinsic capacity to manage difficult experiences involving traumatic impact, including loss, rejection, and/or failure, particularly experiences which contribute to a view of oneself as having failed to meet expectations in an area of personal importance, may facilitate the development of psychotic symptoms in an attempt at ego-preservation. Clinicians may similarly be helped to recognize that the cognitive biases of these affected individuals, vis-à-vis perfectionistic tendencies, may sensitize them to others' judgement and result in heightened levels of social anxiety, shame, and paranoia.

When working with affected persons, clinicians may strive to facilitate meaning-making around traumatic experiences and how these experiences may have resulted in psychotic symptoms. Such meaning-making may assist with ego-repair and assist affected individuals with self-compassion, self-understanding, and moving forward in their lives. Teaching distress tolerance and emotion regulation skills may help affected individuals to manage future experiences with potential traumatic impact, including loss, rejection, and failure, perhaps minimizing the risk for full episodic relapse or recurrence of psychotic symptoms. Finally, when clinicians offer nonjudgement, acceptance, and facilitate clients' self-compassion in the therapy setting, the effects of perfectionism and experience of shame may be mitigated, in the clinical context and in affected individuals' lives.

With the above rationale and core facets of the study in mind, key terms are explicated and relevant literatures are summarized below. A central focus is how people with psychotic

illness who vary in levels of perfectionism and distress tolerance experience traumatic stress.

Background

Trait Perfectionism and Perfectionistic Self-Presentation

Persons who demonstrate perfectionistic tendencies are typically seen as striving intensely to meet extreme standards. Internally, they are characterized by a special type of anxiety, driven by a (sometimes subconscious) need for others' approval and a related need to avoid others' rejection and judgement. As such, they are not simply conscientious, they are hyper-conscientious in their behaviors. Accordingly, they go beyond striving for excellence and instead seek absolute perfection, in service of their interpersonal needs (see Hewitt et al., 2017, for a discussion).

There is a lot of confusion among laypersons and professionals about the nature of perfectionism. For example, perfectionism is often mistaken for obsessive-compulsive disorder or related constructs. Obsessive-compulsive disorder (see American Psychiatric Association, 2013) is characterized by specific anxieties and sometimes related behaviors aimed at reducing these anxieties, which can sometimes reflect highly unlikely possibilities (e.g., needing to perform tasks in a specific sequence or ritual in order to prevent – and reduce anxiety regarding – harm that might otherwise come to a loved one). However, trait perfectionism stems from understandable relational concerns that develop out of a person's life experiences. This formulation of perfectionism, and the evolution of the perfectionism construct, are described below.

Several views of perfectionism have evolved over time. Historically, perfectionism has been viewed by some scholars through a positive lens, as a contributor to things like high

achievement, strong work ethic, and admirable personal standards. Blatt (1995) described

"normal perfectionism", wherein individuals derive a sense of satisfaction from striving for

perfection while maintaining flexibility in their striving as appropriate to a given situation (see

also Hamachek, 1978). Individuals with realistic goals and expectations are able to enjoy their

strengths and well-being and to improve and grow. The behaviors that Hamachek and Blatt

described may be better understood as facets of conscientiousness and achievement striving

rather than perfectionism. Blatt (1995) also distinguished "normal perfectionism", or

conscientiousness and achievement striving, from a more destructive form of self-critical

perfectionism.

Hewitt and Flett (2007) clarified that perfectionism is distinct from conscientiousness and

achievement striving in that perfectionism is characterized by lack of satisfaction with any

performance, fear of failure as motivation, inability to reward oneself for any performance, focus

on flaws as an indicator of self-worth, and an inability to modify expectations when things are

not going well. On the other hand, conscientiousness and achievement striving include

satisfaction from and ability to reward oneself and others for good performance and effort, desire

for success as motivation, less focus on and more acceptance of flaws, and the ability to modify

expectations following failure (see Hewitt & Flett, 2007, for a more complete discussion). Ellis

(2002) highlighted that perfectionism reflects an internal (and sometimes external) imperative to

be perfect, rather than wanting to be perfect or liking to be perfect. Blasberg, Hewitt, Flett,

Sherry, and Chen (2016) tested measures of high personal standards (e.g., the Almost Perfect

Scale-Revised; see Slaney, Rice, Mobley, Trippi, & Ashby, 2001) against modified versions of

these same measures, with original items changed to reflect more perfectionistic themes. They

found that inclusion of the word "perfect" in modified scale items mattered with respect to the negative and positive outcomes each measure predicted. Blasberg and colleagues (2016) concluded that striving for excellence, which was associated with positive affect and life satisfaction, differs substantially and significantly from perfectionism, which was associated with depression, anxiety, shame, and suicidal ideation.

Initial theory and research treated perfectionism as a unidimensional construct. For example, in studying depression, Burns (1983) focused on perfectionism as a type of dysfunctional attitude. In his study, perfectionism was assessed using a single-factor 10-item measure designed to assess dysfunctional attitudes with themes such as, "If I am perfect, other people will love and respect me". Perfectionism has also been treated as unidimensional in studies of eating disorders. For example, Garner, Olmstead, and Polivy (1983) included a unidimensional six-item perfectionism subscale in their Eating Disorder Inventory.

Now, perfectionism is largely understood as a multidimensional construct (see Hewitt, Flett, Besser, Sherry, & McGee, 2003, for a review). Frost, Marten, Lahart, and Rosenblate (1990) outlined a conceptualization of perfectionism with six dimensions. The first dimension is concern over mistakes, which reflects negative reactions to mistakes, the tendency to interpret mistakes as failures, and the belief that failure will result in the loss of others' respect. The second factor is personal standards, which reflects the adoption of extremely high standards and the importance of these standards in self-evaluation. The third dimension is parental expectations, defined as the belief that one's parents set very high goals. The fourth dimension is parental criticism, defined as the perception that one's parents are/were excessively critical. The fifth factor is doubts about actions, which is the extent to which an individual doubts his or her

ability to accomplish tasks. The sixth factor is organization, which centers around excessive importance placed on order and organization.

The current study focuses on Hewitt and Flett's (1991b) model of perfectionism, as their model offers the most clinical utility, with a strong evidence base providing an understanding of perfectionistic thoughts and behaviors, associated feelings and problems of living, interpersonal style, developmental origins, and treatment recommendations (see Hewitt et al., 2017). Hewitt and Flett (1991b) established trait perfectionism as a construct with three dimensions. Self-oriented perfectionism is the maintenance of perfectionistic standards for oneself. Other-oriented perfectionism is the expectation of perfection from others. Socially prescribed perfectionism is the perception that significant others have "unrealistic standards for [one], evaluate [one] stringently, and exert pressure on [one] to be perfect" (Hewitt & Flett, 1991b, p. 457). As noted earlier, research has established that socially prescribed perfectionism is the dimension that is associated most consistently with distress, suicidality, and psychological pain (see, for example, Flamenbaum & Holden, 2007; Flett et al., 2014). Other results are discussed in more detail below.

Hewitt, Flett, Sherry, and colleagues (2003) expanded work on trait perfectionism to delineate perfectionistic self-presentation as the characterological ways people express perfectionism in social situations. Perfectionistic self-presentation is a construct unto itself, representing variance over and above trait perfectionism, and is conceptualized as wanting to appear flawless in order to avoid negative evaluations from others (Hewitt, Flett, Sherry, et al., 2003). Empirical evidence supports perfectionistic self-presentation as comprised of three factors. Perfectionistic self-promotion refers to asserting and displaying one's perfection. Non-

display of imperfection refers to hiding behavioral imperfections and missteps. Non-disclosure of imperfection refers to avoiding discussion of difficulties or shortcomings (Hewitt, Flett, Sherry, et al., 2003). Thus, perfectionistic self-presentation is distinguished from trait perfectionism in one key respect: people with high trait perfectionism feel that they must *be perfect*, whereas people with high levels of perfectionistic self-presentation are more focused on their public image and want to *seem perfect*.

Trait perfectionism and perfectionistic self-presentation are characteristics that develop in childhood (Herman, Wang, Trotter, Reinke, & Ialongo, 2013; Hewitt et al., 2011; Hewitt et al., 2017) and remain stable and pervasive across time and contexts (see Hewitt & Flett, 1991b; Hewitt, Flett, Sherry, et al., 2003). In addition, numerous studies suggest trait perfectionism and perfectionistic self-presentation are associated with significant personal and interpersonal difficulties. Empirical research suggests it is specifically the interpersonal aspects of perfectionism, namely socially prescribed perfectionism and perfectionistic self-presentation, that are most deleterious (e.g., Hassan, 2011). Socially prescribed perfectionism and other-oriented perfectionism have been linked consistently with maladjustment (Flett, Hewitt, & De Rosa, 1996) and psychopathology (Hewitt & Flett, 1991b; Sherry, Hewitt, Flett, Lee-Baggley, & Hall, 2007). This includes personality disorders, anxiety, drug and alcohol abuse (Hewitt & Flett, 1991b), depression (Flett, Hewitt, Garshowitz, & Martin, 1997; Hewitt & Flett, 1991a; Hewitt, Flett, Ediger, Norton, & Flynn, 1998), and suicide (Blatt, 1995; Hewitt, Flett, & Turnbull-Donovan, 1992; Hewitt, Flett, & Weber, 1994; Smith et al., 2017). Non-disclosure of imperfection negatively impacts individuals' seeking, maintaining, and benefiting from treatment, resulting in greater psychological distress (Hewitt & Flett, 2002; Hewitt, Flett, Sherry,

et al., 2003; Kawamura & Frost, 2004). Additionally, individuals high in perfectionistic self-presentation may have difficulty establishing and sustaining a therapeutic alliance, which is critical for positive treatment outcome (Hewitt, Flett, Sherry, et al., 2003; Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). Perfectionistic individuals may also have difficulty engaging in treatment and early termination may preclude subsequent therapeutic benefits.

The current study included a focus on how perfectionism and distress tolerance relate to indices of stress. There is a clear rationale for focusing on the link between perfectionism and stress. Bear in mind that trauma can be viewed as extreme stress. When Hewitt and Flett (1991b) first introduced perfectionism as a multidimensional construct, they described perfectionism and distress from a diathesis-stress perspective. The perfectionism-stress link has also been the subject of an extensive conceptual model and associated empirical work (see Hewitt & Flett, 2002). Other studies have demonstrated that socially prescribed perfectionism in particular is associated with reports of higher frequencies of negative social interactions, daily hassles, and perceived stress (Flett et al., 1997; Sherry, Hewitt, Flett, & Harvey, 2003).

A more recent study has established that socially prescribed perfectionism is associated with self-reports of prolonged stress reactivity and reactivity to social evaluation (Flett, Nepon, Hewitt, & Fitzgerald, 2016). As yet, there has been relatively little investigation of the association between perfectionistic self-presentation and stress. That said, there is evidence suggesting that people with elevated perfectionistic self-presentation tend to be highly sensitive to rejection (see Flett, Besser, & Hewitt, 2014). Flett and colleagues (2014) thus provide some evidence that elevated levels of this impression management style (i.e., perfectionistic self-presentation) might contribute to heightened sensitivity to perceived criticism and rejection in

persons with psychotic illness. This heightened sensitivity to perceived criticism and rejection may result in higher levels of stress manifested by social anxiety or paranoid ideation in persons with psychotic illness. There is also a more specific rationale for focusing on the link between psychotic illness and stress, which is described below.

Trait Perfectionism and Psychotic Illness

As noted earlier, the potential link between multifaceted perfectionism and psychotic illness has not been a focus of previous research. However, the potential relevance of perfectionism in psychotic illness was suggested in the original article by Hewitt and Flett (1991b), where they introduced their conceptualization of multidimensional perfectionism. Hewitt and Flett (1991b) described a sample of students who completed the Multidimensional Perfectionism Scale and the Symptom Checklist-90-Revised (SCL-90-R; see Derogatis, 1983). In their study, socially prescribed perfectionism was significantly associated with SCL-90-R subscales assessing paranoia, psychoticism, and phobias (Hewitt & Flett, 1991b). Additionally, Hewitt and Flett (1991b) found that socially prescribed perfectionism was associated with the psychotic thinking subscale of Millon Clinical Multiaxial Inventory (see Millon, 1983) in a heterogeneous sample of psychiatric patients. This initial evidence points to the need for further inquiry.

Since Hewitt and Flett's (1991b) original study, there have been a few preliminary studies that examined multifaceted perfectionism in psychotic illness. Hassan, Ganguli, Flett, and Hewitt (2013a, 2013b; see also 2012b, 2012c, 2012d, 2012e) found that socially prescribed perfectionism and perfectionistic self-presentation were associated with more severe illness and impairment in social and occupational functioning at both baseline and follow-up 16 weeks later

in a sample of 30 persons with schizophrenia spectrum disorders. Additionally, lower baseline levels of perfectionistic self-presentation, particularly perfectionistic self-promotion, and decreases in perfectionistic self-presentation, particularly perfectionistic self-promotion, over 16 weeks, appeared to protect against psychiatric relapse. Lower levels of self-oriented perfectionism at baseline were associated with psychiatric relapse measured 16 weeks later, and decreases in self-oriented perfectionism over 16 weeks appeared to protect against such relapse. The results suggested that even small levels of self-oriented perfectionism may be deleterious in psychotic illness, and persons who do not put themselves forth as perfect may be better able to elicit and access needed social and professional supports.

One published case study illustrates the potentially lethal impact of perfectionistic self-presentation. Hassan, Flett, Ganguli, and Hewitt (2014) described a case study of a woman who was experiencing a major depressive episode with mood-congruent psychotic features. She completed abbreviated versions of the Multidimensional Perfectionism Scale and the Perfectionistic Self-Presentation Scale two weeks before she died by suicide. Compared to published norms, this woman's scores on five of the six perfectionism dimensions were relatively low, suggesting she was not a perfectionist. She scored 13/35 on other-oriented perfectionism, 12/35 on self-oriented perfectionism, 11/35 on socially prescribed perfectionism, 14/28 on non-disclosure of imperfections, and 16/28 on perfectionistic self-promotion. However, on the non-display of imperfections subscale, this woman scored an exceptional 24/28, suggesting she was very concerned about her imperfect behaviors being observable to others.

In another study of perfectionism in persons with psychotic illness, Hassan, Ganguli, Flett, Suleiman, and Hewitt (2014a, 2014b, 2014c, 2014d) found that higher self-oriented

perfectionism, socially prescribed perfectionism, and perfectionistic self-promotion were associated with greater weight loss in a study of a cognitive behavior intervention for weight loss in 29 persons with psychotic illness. In this study, it appears perfectionism operated more like conscientiousness, whereby individuals' high standards for themselves and/or their perceptions that others expect perfection from them may have promoted weight loss behaviors. Similarly, individuals' desire to present themselves well may have promoted weight loss behaviors. The relationships among perfectionism, perfectionistic self-presentation, and weight loss from this study are consistent with another study by Hassan, Ganguli, Flett, and Hewitt (2012a).

Perhaps more importantly, Hassan and colleagues (2014a, 2014b, 2014c, 2014d) also found that working alliance was generally not associated with treatment outcome, in contrast to other literature suggesting that positive treatment outcome is associated with strong working alliance. In addition, there was a consistent and robust link between non-disclosure of imperfections and working alliance facets, indicating that when there is more reticence to disclose difficulties and flaws, the working alliance is poorer. These findings, in addition to expanding the limited literature on perfectionism and psychotic illness, are the first to link poor working alliance with multidimensional perfectionism and perfectionistic self-presentation, and are consistent with theory on perfectionism in the therapeutic context (see Hewitt, Flett, Sherry, et al., 2003; Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). These findings suggest that without knowing what clients are experiencing, therapists may have difficulty engaging with clients and limited in their ability to convey compassion and offer guidance.

Other Studies Relevant to Perfectionism in Psychotic Illness. Before perfectionism and perfectionistic self-presentation were better understood, Demerath (1943) investigated a

sample of 20 youths diagnosed with schizophrenia and concluded that fears of social rejection and inferiority were associated with striving for academic superiority, an inability to become close to peers, moral perfection, and criticism directed at school instructors and oneself. Furthermore, these fears and resultant compensatory behaviors were associated with a weariness, inability to enjoy things, and diminished self-esteem. Demerath's (1943) results are in keeping with the perfectionism social disconnection model which posits that socially prescribed perfectionism and perfectionistic self-presentation may be linked with maladjustment by way of disrupted interpersonal relationships (Chen, Hewitt, & Flett, 2015; Chen et al., 2012; Sherry, Law, Hewitt, Flett, & Besser, 2008).

While multidimensional perfectionism has not been formally examined in individuals with psychotic illness, perfectionistic dysfunctional attitudes have been evaluated vis-à-vis the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978). Factor analyses of the DAS have established that the DAS has a perfectionistic beliefs factor focused on themes of performance evaluation, and another factor that reflects dependency beliefs and need for others' approval (see Cane, Olinger, Gotlib, & Kuiper, 1986). Research has examined trait perfectionism and perfectionistic dysfunctional attitudes. For example, Sherry and colleagues (2003) found that socially prescribed perfectionism predicted dysfunctional attitudes and depression. However, dysfunctional attitudes did not predict additional variance in depression beyond perfectionism dimensions, in both a sample of undergraduate students and a heterogeneous sample of psychiatric in- and outpatients including persons with psychotic illness.

Work with the Dysfunctional Attitudes Scale (DAS) is important to note because it contains a perfectionism subscale and provides theoretical and empirical support for a role of

perfectionism in psychotic illness. Rector (2004) investigated the perfectionism subscale of the DAS in 56 persons with schizophrenia and found that DAS-perfectionism significantly predicted negative symptoms, which include diminished interest in goal-directed or pleasurable activities, diminished emotional expression, and reduced speech output. In Rector's (2004) study, DAS-perfectionism accounted for 15% of the variance in negative symptoms, even after depressive symptoms were statistically controlled. DAS-perfectionism was also associated with greater symptom severity in this sample of persons with schizophrenia (Rector, 2004).

Subsequent studies found that defeatist beliefs, which are negative beliefs about task performance as assessed by a subset of Dysfunctional Attitudes Scale items (hereafter referred to DAS-defeatist beliefs or defeatist beliefs), were endorsed to a higher degree by individuals independently identified as being at ultra-high risk for psychosis relative to controls, and associated with more severe negative symptomatology (Perivoliotis, Morrison, Grant, French, & Beck, 2009). Examples of defeatist beliefs include, "People will probably think less of me if I make a mistake"; "If I do not do well all the time, people will not respect me"; "Taking even a small risk is foolish because the loss is likely to be a disaster"; and "If I don't set the highest standards for myself, I am likely to end up a second-rate person". Notably, on the scale assessing DAS-defeatist beliefs, item content reflects perfectionistic themes yet the DAS-defeatist beliefs subscale is not the same as the DAS-perfectionism subscale. Furthermore, the overlap between DAS-defeatist beliefs and trait perfectionism has not been acknowledged in the literature.

Grant and Beck (2009b) investigated evaluation sensitivity, or beliefs about the consequences of being rejected as assessed by a subset of Dysfunctional Attitudes Scale items,

and found that evaluation sensitivity moderated the association between cognitive impairment and communication disorder symptoms in a sample of 74 individuals with schizophrenia or schizoaffective disorder. They also found that DAS-defeatist performance beliefs mediated the relationship between cognitive impairment and both negative symptoms and functioning (Grant & Beck, 2009a).

DAS-defeatist beliefs have been assessed in relation to negative expectancy appraisals, which are pessimistic beliefs about the likelihood of future pleasure, success, acceptance, and having the resources to perform tasks well (see Beck, Rector, Stolar, & Grant, 2009). Both defeatist beliefs and negative expectancy appraisals were significantly associated with avolition, asociality, and anhedonia in persons with schizophrenia (Couture, Blanchard, & Bennett, 2011; see also Beck, Grant, Huh, Perivoliotis, & Chang, 2013).

More recently, Campellone, Sanchez, and Kring (2016) conducted two meta-analyses. The first meta-analysis included 10 studies that examined negative symptoms in persons with schizophrenia. This meta-analysis found that there was a small but significant relationship between defeatist performance beliefs and negative symptoms. The second meta-analysis focused on eight studies that examined functional outcomes in people with schizophrenia. This analysis confirmed another small but significant relationship between defeatist performance beliefs and functional outcome, although this relationship was moderated by the manner in which functional outcome was assessed (Campellone et al., 2016). The authors concluded that their meta-analytic results suggest that there may be value in targeting defeatist beliefs in psychological interventions with persons living with schizophrenia.

At present, it appears that no published study has considered DAS-defeatist beliefs and

multidimensional perfectionism in persons with psychotic illness. Indeed, researchers studying

defeatist beliefs have not yet considered their results in relation to theory and research on

perfectionism. The current study sought to address this void by examining the correlations

among DAS-defeatist beliefs, socially prescribed perfectionism, and perfectionistic self-

presentation. This focus was incorporated into the current study with the hope of elaborating

psychological formulations of psychosis. This aspect of the study was also intended to connect

the vast literature on perfectionism with the literature on dysfunctional attitudes in psychotic

illness in such a way as to open additional research avenues.

Perfectionism, Obsessive-Compulsive Disorder, and Obsessive-Compulsive Personality Disorder in Psychotic Illness. Many clinicians and researchers confuse some

psychotic experiences with symptoms of obsessive-compulsive disorder and view the two

conditions as highly comorbid (see, for example, Boxill, Shapiro, & Dougherty, 2002; Cunill,

Castells, & Simeon, 2009). Yet previous research involving non-psychotic populations suggests

that perfectionism is more strongly related to obsessive-compulsive personality disorder than to

obsessive-compulsive disorder (e.g., Halmi et al., 2005). Obsessive-compulsive disorder

involves intense, uncontrollable, and recurring thoughts, with urges to engage specific behaviors

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

disorder is characterized by concerns over orderliness, perfectionism, details, and control

(American Psychiatric Association, 2013). Thus, there is more conceptual overlap between

perfectionism and obsessive-compulsive personality disorder, as both of these refer to

personality dynamics. Regarding psychotic illness, the anxious rigidity that often gets confused

for obsessive-compulsive disorder may more likely reflect perfectionism and obsessive-

compulsive personality traits. For purposes of clinical utility and in response to questions posed at several academic conferences, it would be helpful to understand the extent to which perfectionism and perfectionistic self-presentation are indeed more strongly correlated with obsessive-compulsive personality disorder than with obsessive-compulsive disorder. These correlational relationships were thus investigated in the current study.

As mentioned earlier, this study involves perfectionism, distress tolerance, and trauma as central foci in the overall investigation. The literature on distress tolerance and trauma will now be summarized.

Distress Tolerance and Difficult Life Events

Characterological distress tolerance is conceptualized as one's capacity to experience and withstand negative emotional states (Simons & Gaher, 2005). Simons and Gaher (2015) created a 15-item self-report inventory that assesses the four factors of distress tolerance. The tolerance factor involves items such as, "I can't handle feeling distressed or upset". The appraisal factor involves items such as, "My feelings of distress or being upset scare me". The absorption factor involves items such as, "When I feel distressed or upset, all I can think about is how bad I feel". The fourth factor, regulation, involves items such as, "I'll do anything to avoid feeling distressed or upset". Distress tolerance has been implicated in the development and maintenance of various psychopathologies, including mood disorders, personality disorders, and substance use disorders (see Leyro, Zvolensky, & Bernstein, 2010). In the current study, characterological distress tolerance is a focus due to its potential relevance to both psychotic illness and perfectionism.

Distress tolerance is likely to interact with experience of life events and daily stresses, and affect levels of psychological distress in persons with psychotic illness. While both major

life events and daily stressors or hassles have been implicated in the formation and maintenance of psychotic symptoms, there is some evidence that everyday stressors better predict perceived stress and psychiatric symptomatology (see, for example, Norman & Malla, 1991; Tessner et al., 2011). It was previously mentioned that perfectionism and psychosis may share a common developmental pathway via expressed emotion and criticism in the home. It appears stress related to expressed emotion at home is better captured by measures of daily hassles rather than major life events and, again, daily hassles appear to better predict perceived stress and psychiatric symptomatology (Norman & Malla, 1991).

Other clinicians and researchers, including some with lived experience of psychosis, have suggested that psychosis is an often life-saving response to major life events, particularly those involving trauma and loss (e.g., Bebbington et al., 2004; Boevink, 2006; Kilcommons & Morrison, 2005; Larkin & Read, 2012; Read et al., 2005; Sullivan, 1956). Some of the literature establishing the link between trauma and subsequent psychotic experiences, and the psychodynamic underpinnings of this link, was described in the Rationale for the Current Study and Study Development section of this dissertation presented earlier. Additional literature indicates strong association between traumatic experiences and subsequent experience of psychotic illness, particularly neglect and sexual, physical, and emotional abuse in childhood (e.g., Geekie & Read, 2009; Mørkved et al., 2017; Read, 2012, 2013). Some estimates suggest that rates of childhood trauma are elevated as much as 50% in persons with psychotic illness (e.g., Read, Fink, Rudegeair, Felitti, & Whitfield, 2008).

A meta-analysis by Cunningham, Hoy, and Shannon (2016) suggested that experiences of being bullied in childhood predict later psychotic symptomatology. Rhodes, Parrett, and Mason

(2016) conducted a qualitative analysis and described the worsened experience of psychotic symptoms in refugees who had experienced at least one significant trauma (e.g., torture, war, political killing) in their home countries. Marius Romme, Sandra Escher, Eleanor Longden, and colleagues have conducted several studies in which the strong association between voice hearing and traumatic life events has been demonstrated, with voice content often thematically related to lived experience (see, for example, Beavan, 2012; Longden, Madill, & Waterman, 2012; Romme, 2012). Finally, Varese, Tai, Pearson, and Mansell (2016) conducted a study that suggested that content of voices is related to personal concerns, specifically desired goals of personal significance, whereas another study by Westermann, Moritz, Caspar, and Cavelti (2017) found that discrepancies between psychological needs and actual experiences (i.e., unmet psychological needs) were associated with paranoid ideation and negative symptoms in a sample of 83 diagnosed with schizophrenia spectrum disorders. To date, however, the mechanisms underlying the relationships among life events, daily stressors, and psychosis remain unclear. One possible explanatory variable is distress tolerance.

A 2009 study by Stanage-Becker investigated distress tolerance and daily hassles in psychotic illness using an experience-sampling method and found that daytime stressors were significantly related to elevated psychotic symptoms at night, with distress tolerance moderating this relationship. Furthermore, poorer distress tolerance was associated with greater psychotic symptomatology and dysphoria (Stanage-Becker, 2009). Other studies have investigated conceptually related constructs, including emotional reactivity to stress (e.g., Myin-Germeys & van Os, 2007; Myin-Germeys, van Os, Schwartz, Stone, & Delespaul, 2001), and found that individuals with psychotic illnesses demonstrate higher levels of emotional reactivity vis-à-vis

reacting more intensely to perceived stress in their lives. This increased arousal in response to daily stressors is associated with both increased negative affect and decreased positive affect (Myin-Germeys et al., 2001), and is consistent with expected sequelae of traumatic experiences (Allen, 2005).

As mentioned earlier, distress tolerance is also of interest in the current study because of its interaction with perfectionism. Perfectionism and distress tolerance have been linked in one study (see Anestis, Selby, Fink, & Joiner, 2007), although the assessment of this association was limited by use of the unidimensional perfectionism subscale of the Eating Disorder Inventory. Hassan (2011) used measures of multidimensional perfectionism and found that trait perfectionism and perfectionistic self-presentation were associated with lower levels of distress tolerance in a sample of 140 undergraduate students. Poor distress tolerance has also been linked with other indices of maladjustment, for example, compulsive hoarding behavior (Timpano, Buckner, Richey, Murphy, & Schmidt, 2009), substance use disorders (Buckner, Keough, & Schmidt, 2007), borderline personality (Linehan, 1993), and pathological gambling (Daughters et al., 2005).

The current study extended previous studies and examined socially prescribed perfectionism, perfectionistic self-presentation, and characterological distress tolerance as potential mechanisms underlying the relation between psychosis and both daily stressors and traumatic life events. This aspect of the study was intended to clarify whether higher levels of perfectionism and lower distress tolerance may represent, either separately or in conjunction with each other, psychological vulnerabilities within persons with psychotic illness. Flett, Hewitt, Blankstein, and Mosher (1995) found support for trait perfectionism as a moderator in the

relationship between life events and depressive symptoms. Other research has supported this relationship, demonstrating that perfectionism not only predicted depressive symptomatology but anxiety and self-harm behavior, as well (O'Connor, Rasmussen, & Hawton, 2010). In the face of difficult life events or highly stressful daily hassles, high levels of perfectionism and low levels of distress tolerance may create sensitivity to stronger traumatic impact and worse psychological distress, including psychotic symptoms, in certain individuals (see Hewitt & Flett, 2002, for a discussion of perfectionism as a diathesis factor in diathesis-stress models of distress).

To account for individual differences in appraisals of life events and everyday stressors, perceived stress was also measured in this study. Thus, a model is proposed wherein psychological vulnerability comprised of stronger perfectionistic expectations and lower distress tolerance predicts stronger traumatic impact of difficult life events alongside experience of more daily stresses and more perceived stress, which then produce higher levels of psychological distress vis-à-vis shame, social anxiety, and paranoia, which are all prominent clinical correlates of psychotic illnesses. In the current study, the well-known 18-item Brief Symptom Inventory (BSI-18; Derogatis, 2001) also assessed psychological distress given its acceptance among experts and widespread use in the psychosis literature as an effective measure for this purpose. This model is presented in Figure 1.

Theory of Mind, Paranoia, and Social Anxiety

Social cognition impairments are well documented in schizophrenia (e.g., Brüne, 2005; Harrington, Siegert, & McClure, 2005; Sprong, Schothorst, Vos, Hox, & Van Engeland, 2007) and predict functional outcome (e.g., Harvey & Penn, 2010; Horan et al., 2012; see also Mancuso et al., 2011). One aspect of social cognition, theory of mind (ToM), is the ability to
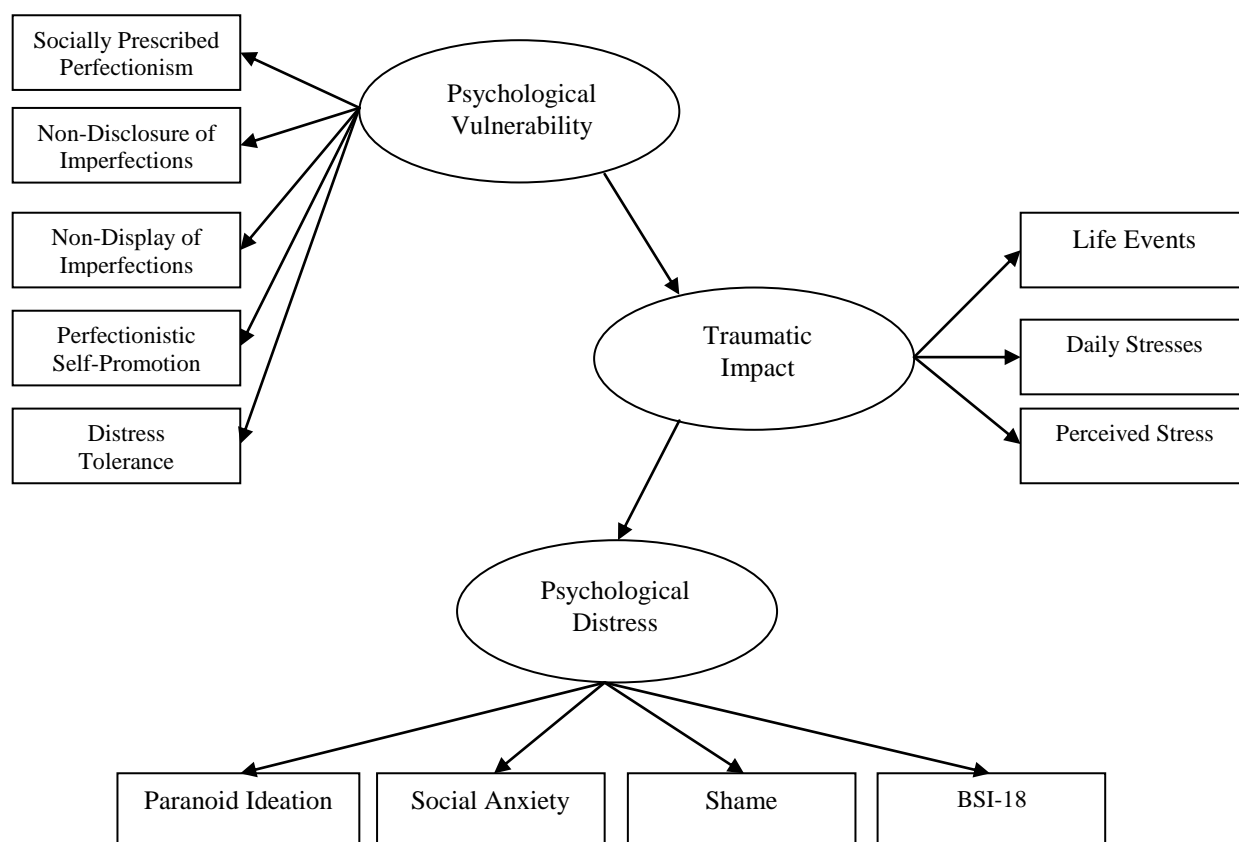
Figure 1. Path diagram of the hypothesized psychological vulnerability factors, perfectionism and distress tolerance, predicting the experience of stronger traumatic impact, which predicts more distress.

infer the mental states of oneself and others in order to understand past and predict future behaviors (Harrington, Siegert, et al., 2005), by attending to and interpreting ambiguous verbal and visual cues. ToM can be tested using false-belief tasks. For example, a boy puts a box of chocolates on a shelf and leaves the room. His mother places the box of chocolates in the fridge. To pass the task, the examinee must understand that, upon returning to the room, the boy in the example will hold the false belief that the chocolates are still on the shelf.

Given that theory of mind is a relatively abstract concept, it may be helpful to get a concrete sense of how it is actually studied. In the current research, two measures were used to

assess the theory of mind construct. One measure, the hinting task, assesses individuals' ability to infer people's intentions based on conversation. Each item involves a brief vignette that ends with one character dropping a relatively obvious but indirect hint to another character (e.g., "Paul has to go to an interview and he's running late. While he is cleaning his shoes, he says to his wife, Jane, 'I want to wear that blue shirt but it's very creased'".) The interviewee is then asked what the character really meant by what was said (e.g., Paul wants Jane to iron his shirt). The other measure, the comic strip task, involves four-part comics that depict a character performing a simple task in logical sequence. The first three parts of each comic are provided in sequence. Interviewees must infer the intention of the character and select which of three possible options completes the sequence based on the character's depicted behavior.

Poorer performance on ToM tasks predicts impairments in social functioning (e.g., Couture, Granholm, & Fish, 2011; Kosmidis, Giannakou, Garyfallos, Kiosseoglou, & Bozikas, 2011; Roncone et al., 2002) and has been associated with higher rates of suicide (Duñó et al., 2009) in persons with schizophrenia. While most studies have investigated ToM in schizophrenia specifically, ToM impairments have been demonstrated in bipolar I disorder and major depression with psychotic features (Marjoram et al., 2005), and in schizophreniform, schizoaffective, and delusional disorders (Drury, Robinson, & Birchwood, 1998), suggesting that ToM impairments are not unique to schizophrenia but are related to the broad construct of psychosis (see also Bentall et al., 2009).

Conceptually, socially prescribed perfectionism and perfectionistic self-presentation also involve speculation regarding what others are thinking and how others are likely to behave, by way of inferring others' perfectionistic expectations for oneself and anticipating others'

judgement should one's failings be discovered. Similarly, paranoia, by definition, involves conferring negative intent on others' actions (Harrington, Langdon, Siegert, & McClure, 2005). There are thus clear conceptual relationships among the social aspects of perfectionism, ToM, and paranoia. Previous research suggests impaired performance on ToM tasks is in fact related to paranoid and persecutory delusions (Bentall et al., 2009; Corcoran et al., 2011; Frith & Corcoran, 1996; Harrington, Langdon, et al., 2005; Mehl et al., 2010), although these findings have not been unequivocally supported in all studies (e.g., Drury et al., 1998).

Social anxiety is characterized by fear of embarrassing oneself in social or performance settings, because making a mistake in public may garner negative evaluations, judgements, or rejection from others (American Psychiatric Association, 2000, 2013). Social anxiety has been linked with perfectionism and, in particular, perfectionistic self-presentation (see Flett & Hewitt, 2014, for a summary of relevant studies). Perfectionism and perfectionistic self-presentation appear to exacerbate aspects of social anxiety, namely, perfectionism cognitions, the impact of perfectionism discrepancies (i.e., the awareness that one is not only subject to perfectionistic expectations and standards, but also falls short of these), and negative self-appraisals, to produce elevated levels of psychological distress (Flett & Hewitt, 2014).

Social anxiety has also been established as a distinct comorbidity in psychosis that is not accounted for by the presence of paranoia, persecutory delusions, or other psychotic symptomatology (Michail & Birchwood, 2009; Pallanti, Quercioli, & Hollander, 2004), though it is conceptually related to paranoia and theory of mind. Lysaker and colleagues (2010) found that paranoia was associated with ToM deficits in the absence of corresponding social anxiety, and with social anxiety in the absence of impaired ToM. Thus, the relationships among social

anxiety, paranoia, and ToM may not be straightforward. It also appears that no study to date has investigated perfectionism in tandem with social anxiety, paranoia, and ToM. One reason for the equivocal results among studies of ToM, paranoia, and social anxiety might be that there is a third variable contributing to these relationships. This additional contributory variable could be perfectionism.

The social withdrawal that is observed in psychotic illness and often attributed to paranoia and social anxiety may be clarified in light of the perfectionism social disconnection model mentioned above (Chen et al., 2015; Chen et al., 2012; Sherry et al., 2008). According to the perfectionism social disconnection model, perfectionistic tendencies, particularly socially prescribed perfectionism and perfectionistic self-presentation, develop in the context of difficult or traumatic relationships with primary caregivers in childhood. These early experiences instill a sense of shame and unfulfilled needs for acceptance and approval from others, which manifest in later relationships. Perfectionistic behaviors represent a means for trying to meet these psychological needs, by securing affection and approval from significant others, and are also a way to avoid further shame and social rejection. Unfortunately, the behaviors that are thought to secure affection and acceptance (e.g., non-disclosure of difficulties or mistakes) end up being the very behaviors that garner social rejection and judgement from others, resulting in alienation and disconnection.

For persons with psychotic illness, attempts to build self-esteem and social credibility may manifest in striving to meet standards set in areas of personal significance (e.g., having a romantic relationship or a good job). When these attempts fail, affected individuals are not only left with a deep sense of shame and inadequacy, they are also isolated or ostracized from the

social connections that may provide comfort and re-establish a sense of worthiness. These ideas are consistent with those of Judith Herman (2015) who, in 1992, posited that trauma results from intense senses of powerlessness and disconnection from others; recovery, thus, requires empowerment and creation of new social connections.

Additionally, literature on impression management and self-presentation in schizophrenia (Braginsky, Grosse, & Ring, 1966; Fontana & Klein, 1968; Fontana, Klein, Lewis, & Levine, 1968; Price, 1972) has suggested that impression management and self-presentation strategies were used to meet personal goals around hospitalization and discharge, and to secure caring from hospital staff. This research indicates a focus on perfectionistic self-presentation may be warranted in psychotic illness. Finally, as mentioned above, maladaptive perfectionistic tendencies develop in the context of parental criticism (Frost, Lahart, & Rosenblate, 1991; Kawamura, Frost, & Harmatz, 2002) and difficult or traumatic experiences with primary caregivers (Hewitt et al., 2017). Gregory Bateson and colleagues (Bateson, Jackson, Haley, & Weakland, 1956) argued that schizophrenia results directly from exposure to problematic communication styles in childhood. Developmental pathways in schizophrenia vis-à-vis expressed emotion suggest that criticism from family members is associated with more negative self-evaluation (Barrowclough et al., 2003). Furthermore, expressed emotion is a robust predictor of psychiatric relapse (Butzlaff & Hooley, 1998). Given the common developmental pathways and poor outcomes associated with both perfectionism and expressed emotion, it would be useful to determine to what extent persons with psychotic illness exhibit perfectionistic tendencies and whether these tendencies overlap with social anxiety and paranoia symptoms.

In the current study, the inter-relationships among perfectionism, particularly socially prescribed perfectionism and perfectionistic self-presentation, ToM, paranoia, and social anxiety were assessed. Specifically, a model is proposed wherein higher levels of the social aspects of perfectionism, namely socially prescribed perfectionism and perfectionistic self-presentation, predict poorer performance on theory of mind tasks, which in turn predict higher levels of paranoia and social anxiety. This proposed model is presented in Figure 2 below. Theory of mind is proposed as the mediator because the model is based on the view that socially prescribed perfectionism and perfectionistic self-presentation are psychological vulnerabilities that influence how one experiences the world. In other words, one's personality influences how one perceives and interprets the behaviors of others.
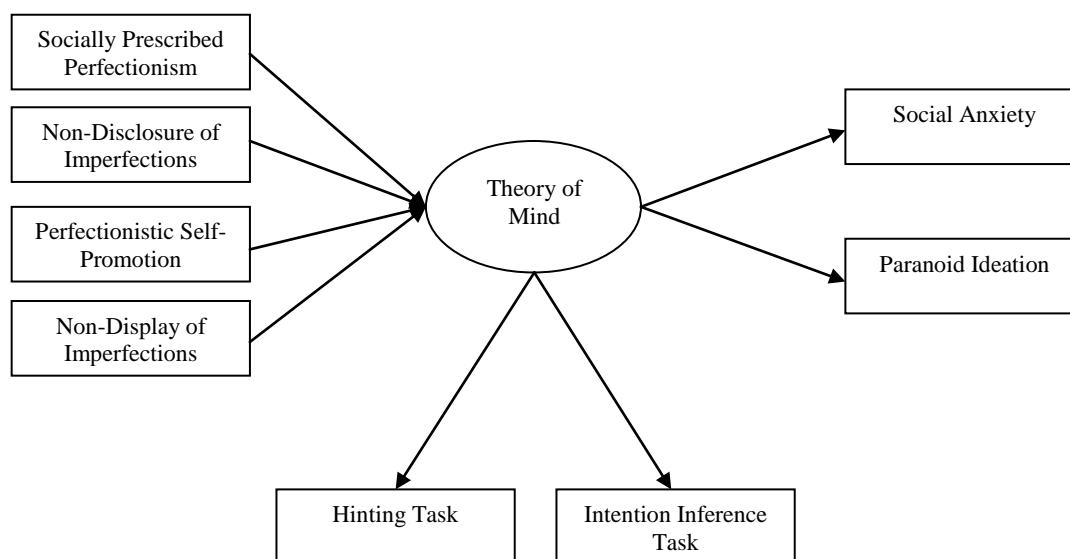
Figure 2. Path diagram of the hypothesized relationships among perfectionism, theory of mind, social anxiety, and paranoia.

Shame and Psychological Distress

Shame is "a particularly intense, and often incapacitating, negative emotion involving feelings of inferiority, powerlessness, and self-consciousness, along with the desire to conceal deficiencies" (Andrews, Qian, & Valentine, 2002, p. 29). That is, shame is a highly negative evaluation of the self along with the sense that others are aware of one's failings. Tangney (2002) observed that shame is differentiated from guilt in that shame relates to negative self-perceptions of aspects of the self (e.g., one's character), whereas guilt relates to one's behaviors. Tangney (2002) summarized research linking socially prescribed perfectionism and shame, but subsequent research by Flett, Hewitt, Besser, and Sturman (2007) has highlighted the link between perfectionistic self-presentation and shame. Flett and colleagues' (2007) findings are consistent with previous research reviewed by Tangney (2002), wherein perfectionists were not especially concerned about the effects of their mistakes on others, but more about the effect of their mistakes on others' evaluations of themselves (as in perfectionistic self-presentation).

Shame has been associated with psychological distress and psychopathology and some posit that the experience of shame worsens the experiences of other psychological distress. For example, in a sample of 215 undergraduate students, shame partially mediated the relation between perfectionism and depressive symptomatology (Ashby, Rice, & Martin, 2006). In another study of 113 undergraduate students, socially prescribed perfectionism was linked with both shame and depression (Wyatt & Gilbert, 1998). Hassan (2011) found that while shame was associated with higher levels of perfectionism and psychological distress, shame did not moderate the relationship between perfectionism and psychological distress in a sample of 140 undergraduate students.

As discussed above, trait perfectionism and perfectionistic self-presentation are associated with multiple indices of maladjustment and psychopathology, including shame, in a variety of psychiatric and non-psychiatric populations. As yet, however, the relationship between perfectionism and psychological distress in persons with psychotic illness has not been established. In their preliminary study of perfectionism in psychotic illness described above, Hassan and colleagues (2013a, 2013b) found that higher perfectionism was related to worse psychiatric symptoms. In the current study, a mediation model is proposed wherein higher levels
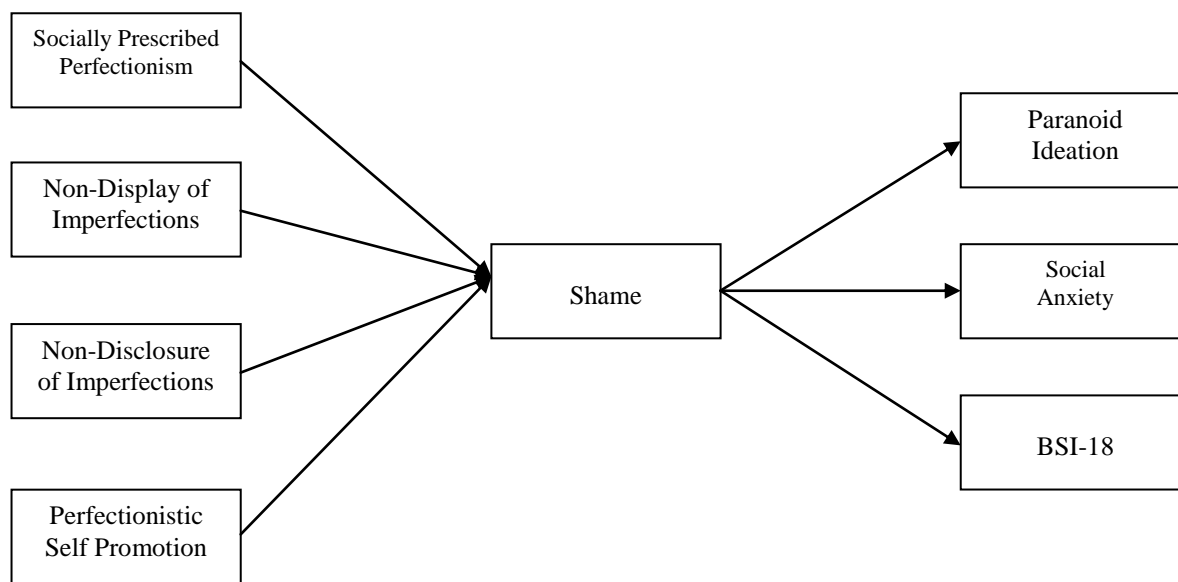
Figure 3. Path diagram of the hypothesized mediation model describing relationships among perfectionism, shame, and psychological distress.

of socially prescribed perfectionism and perfectionistic self-presentation predict higher levels of shame, which in turn predict higher levels of psychological distress vis-à-vis paranoia, social anxiety, and the BSI-18. This proposed model is presented in Figure 3 above. Shame is

proposed as the mediator because it captures the sense of self as being deficient and defective, and it is believed that the negative self underscores the need to be and seem perfect (for a discussion, see Hewitt et al., 2017).

The Current Study

Purpose

The current dissertation involved an exploratory examination of particular personality factors as psychological vulnerabilities to traumatic impact and psychological distress, which may contribute to the literature on psychological formulations of psychotic illness and provide tentative avenues for psychological interventions to assist affected persons. Specifically, trait perfectionism, perfectionistic self-presentation, and distress tolerance were investigated as psychological vulnerabilities to traumatic impact and psychological distress in a sample of persons diagnosed with psychotic illness. The aim was to advance our understanding of how particular ways of viewing oneself and the world, and one's capacity for withstanding and making sense of difficult life circumstances, may interact with life events and daily stresses to predispose one to, or amplify, psychological distress in those with psychotic illness.

A secondary aim of this study was to contextualize the results within the broader literatures on each of psychosis, trauma, and perfectionism, by examining how perfectionism relates to conceptually related factors already correlated with psychotic illness, including social anxiety, paranoia, and theory of mind; to clinically relevant constructs, including shame, obsessive-compulsive disorder, and obsessive-compulsive personality disorder; and to a theoretically related construct, defeatist beliefs. Finally, beyond the conceptual contributions of this study, a third aim was to provide preliminary guidelines for clinicians working with affected

individuals and to provide directions for future research seeking to improve psychotherapies for psychotic illness.

Several models were proposed and tested with a sample of persons diagnosed with psychotic illness. The primary model is one wherein psychological vulnerability comprised of stronger perfectionistic expectations and lower distress tolerance predicts the traumatic impact of difficult life events alongside more daily stresses and more perceived stress. In this primary model, traumatic impact then predicts higher levels of psychological distress vis-à-vis shame, social anxiety, and paranoia in persons with psychotic illness. Secondary models were proposed, including a model wherein higher levels of the social aspects of perfectionism, namely socially prescribed perfectionism and perfectionistic self-presentation, predict poorer performance on theory of mind tasks. In this model, poorer performance on theory mind tasks then predicts higher levels of paranoia and social anxiety. The other secondary model that was proposed is one in which higher levels of socially prescribed perfectionism and perfectionistic self-presentation predict higher levels of shame. In turn, higher levels of shame predict higher levels of psychological distress vis-à-vis paranoia, social anxiety, and the BSI-18. Additionally, correlational analyses examined the extent to which perfectionism and perfectionistic self-presentation are related to characteristics of obsessive-compulsive disorder and obsessive-compulsive personality disorder. Correlational analyses also examined the relationships among perfectionistic self-presentation, socially prescribed perfectionism, and DAS-defeatist beliefs.

In examining the above models and correlational relationships, this exploratory dissertation study sought to clarify conceptual relationships among key constructs; to elucidate the phenomenological experience of persons living with psychotic illness and elaborate

psychological formulations of psychotic illness; to expand and connect literatures on psychotic illness, perfectionism, and trauma; to provide preliminary recommendations for clinicians involved in treatment with affected individuals; and to indicate future research avenues that may be investigated with more resources.

Methodology

While the method of a study refers to the research tool(s) used to gather empirical data (e.g., interview, questionnaire, etc.), methodology refers to the justification for particular research methods along with the philosophical assumptions that underlie a study's approach and method. Thus, the method refers to techniques for gathering data, whereas methodology refers to the theory and paradigmatic understanding of the philosophical parameters governing a given research study and its method. Clough and Nutbrown (2007) provide a more detailed analysis of this distinction.

This study was conceived from a post-positivist philosophical perspective. Within this perspective, there are truths that govern reality and clear predictions that can be made from one variable to another in the form of cause and effect. Furthermore, this perspective is predicated on the belief that natural and social phenomena can be quantified, measured, and studied. That said, post-positivism differs from positivism in that the former recognizes that the phenomena under investigation will necessarily be influenced by the researchers' own beliefs, biases, and experiences and, as such, are subject to human fallibility and may require revision over time, whereas positivism asserts the possibility of absolute observation, description, and measurement and limits scientific endeavors to phenomena that fall within these parameters . Thus, for positivists, phenomena such as thoughts and emotions may never be scientifically investigated.

For positivists, if empirical results suggest scientific theories do not well fit the data, the solution is to revise theories to account for the data obtained.

In contrast, for post-positivists, there is recognition that the phenomena under investigation may never be able to be truly 'objectively' studied, as the act of studying may change the very nature of the phenomena in question and, furthermore, some phenomena are not easily studied (e.g., thoughts and emotions, which are inaccessible to 'objective' observers). There is also recognition that measurement strategies and tools are limited and thus some theories may never be able to be 'proven' though they may appear to reasonably capture reality. In this way, true knowledge (or objective truth) can never be ascertained, only approximated, although true knowledge exists. Yet, through series of studies, combining the expertise and experiences of multiple investigators, humanity may move closer and closer, from different angles, to 'true' understanding and, in this way, empirical study serves a practical purpose in helping us to navigate the world even as we may never pinpoint true knowledge. One key within this approach is to recognize areas of bias on the part of the investigator and within the study design.

With respect to this exploratory dissertation study, the variables selected and the particular models proposed were influenced by the author's personal and professional experiences with individuals who live with psychotic illness, her clinical experience with those living with borderline personality disorder, her previous research experience including her master's thesis study, and her own personal way of making sense of psychotic experiences and perfectionism, all of which have changed and developed over time. Similarly, the construction of this study and the author's ideas have been shaped by her committee members and their

respective beliefs, experiences, and expertise, as well. The literature surveyed by the author to date has influenced the logical flow and constructions of the models proposed, yet this logic and these models are pragmatically limited, as it is nearly impossible to both review all existing literatures and complete a dissertation study in a reasonable amount of time. Thus, the proposed models and associated beliefs may shift as more 'knowledge' is gathered or discovered.

An additional area of bias is the sample that was used. The participants cannot truly represent all individuals with psychotic illness but were studied as though they represent the population of individuals with psychotic illness. The construction of the study was overseen and may be limited by the institution within which the research was conducted. The author's statistical analyses are limited by her experience and training and, notably, different statistical techniques might yield different results, as even statistical experts disagree on the appropriate statistical approaches for examining particular psychological and social phenomena. Feasibility constraints on doctoral students, including time and resources, have also contributed to this study. Other areas of bias and limitation certainly exist, though they may not have been identified by the author or her committee members. Yet, this study was undertaken because the author has witnessed that working formulations of the individuals affected by significant problems of living, even in the absence of objective truth, have indeed proven helpful to all involved.

This study is exploratory in its attempt to clarify whether the models proposed are worthwhile being tested with larger samples in diverse settings. While the author's theories build on existing theory and evidence, few studies have examined perfectionism and distress tolerance in individuals living with psychotic illness. The results obtained here will hopefully

refine the author's theory and shed light on avenues for future research, including whether there are missing elements of the models. At the same time, this study is instructive in that the author has formulated a theory to be tested, which may contribute to understanding of whether there are specific psychological vulnerabilities to psychotic illness and how understanding these in the context of difficult life events can assist clinicians with helping affected individuals make sense of their experiences and move forward in their lives. That said, the results of the study can be applied in a co-creative sense. Although clinicians may approach the therapy context with the idea that significant life events have coupled with individuals' psychological characteristics in such a way as to necessitate ego-protection and that contributes to the experience of distress, it is only by collaborating with the affected individual in co-constructing the meaning of his/her/their experiences that healing and integration may occur. The narrative that is created must be acceptable to the affected individual, and then only supported and informed by the 'knowledge' and experience of the clinician.

Consistent with the post-positivist perspective described above, this exploratory dissertation study utilized empirically validated questionnaires to collect data on the constructs in question. The majority of the measures collected self-report data. This method rests on the assumptions that questionnaires have face and construct validity, and psychological phenomena can be subjectively observed by the experiencer and measured for analysis. Efforts were made to mitigate measurement errors by using reliable, empirically-validated questionnaires. Additionally, data were interpreted with attention to sample size; indices of central tendency and spread; reliability coefficients in this sample; indices of effect size and power; and awareness of the psychometric limitations of any measurement tool (and, in fact, any endeavor of

psychological measurement) and statistical technique. The use of only theory-driven, a priori predictions justified structural equation modelling for statistical analysis of hypotheses one, two, and three (see Flora & Flake, 2017; and Kline, 2016, for more extensive explanations of the theory underlying structural equation modelling). Correlational analyses are widely accepted for initial examinations of constructs to identify areas of overlap.

Hypotheses

This exploratory dissertation study investigated five hypotheses. The primary hypothesis for this study was:

1) Psychological vulnerability comprised of higher levels of socially prescribed perfectionism and perfectionistic self-presentation and lower distress tolerance would predict the traumatic impact of difficult life events, more daily stresses, and more perceived stress. Traumatic impact would then produce higher levels of psychological distress as assessed by measures of shame, social anxiety, paranoia, and the BSI-18. As part of this examination, it was predicted that higher levels of socially prescribed perfectionism and perfectionistic self-presentation and lower levels of distress tolerance would be associated with more psychological distress in this sample of persons diagnosed with psychotic illness, a relationship which has been well-established in other psychiatric populations but not yet psychotic illness.

Several other issues could be examined, but focus was limited to the following four secondary hypotheses:

2) Higher levels of socially prescribed perfectionism and perfectionistic self-presentation, respectively, would predict poorer performance on theory of mind tasks. In turn, poorer

performance on theory of mind tasks would predict higher levels of paranoia and social anxiety.

3) Higher levels of socially prescribed perfectionism and perfectionistic self-presentation, respectively, would predict higher levels of shame. In turn, higher levels of shame would predict higher levels of psychological distress vis-à-vis paranoia, social anxiety, and the BSI-18.

4) Trait perfectionism and perfectionistic self-presentation, respectively, would be more strongly correlated with symptoms of obsessive-compulsive personality disorder than symptoms of obsessive-compulsive disorder. While clinicians and researchers tend to confuse some psychotic experiences with symptoms of obsessive-compulsive disorder, empirical evidence supports a connection between perfectionism and obsessive-compulsive disorder. Obsessive-compulsive disorder involves intense, uncontrollable, and recurring thoughts, with urges to engage specific behaviors. In contrast, obsessive-compulsive personality disorder is characterized by concerns over orderliness, perfectionism, details, and control. Thus, there is more conceptual overlap between perfectionism and obsessive-compulsive personality disorder.

5) Socially prescribed perfectionism and perfectionistic self-presentation, respectively, would be significantly and robustly correlated with DAS-defeatist beliefs. Given the perfectionistic content of several items on the DAS-Defeatist Beliefs Scale, the current study also evaluated whether trait perfectionism and perfectionistic self-presentation could predict psychological distress over and above DAS-defeatist beliefs.

The hypotheses outlined above were tested in a sample of 61 people with a diagnosed

psychotic illness. Clearly, certain hypotheses and in particular the conceptual models would have ideally been examined in a much larger sample. However, pragmatic constraints involving clinical recruitment issues meant that the hypotheses were tested in a sample with a less than optimal size, with challenging implications for statistical power. It is acknowledged from the outset that some of the statistical analyses that are reported in the Results section are better suited for research conducted with a larger sample. It is clear that the current research was conducted with a relatively small sample who completed an array of measures that is quite extensive. It was decided to include a large number of measures because of their assumed conceptual relevance and in recognition of the opportunity that was available to add substantially to what is known at present about the links that perfectionism has with factors known to be implicated in psychotic illness. Issues of statistical power and sample size are discussed in more detail in the Statistical Analyses section below.

Method

Participants

Sixty-one persons (36 men, 24 women, and one gender non-binary person) were recruited from the Centre for Addiction and Mental Health (CAMH) in Toronto, Canada. Each person was previously diagnosed with a psychotic illness (35 persons with schizophrenia, 14 with schizoaffective disorder, 8 with bipolar I disorder, 3 with psychotic disorder not-otherwise-specified, and 1 with major depression with psychotic features), which was confirmed by clinical chart review. Participant ages ranged from 23 to 67 years, with a mean age of 45.8 years. The majority of participants identified as Caucasian (31 persons); the next largest group were Black (11 persons). The other participants in the sample were South Asian (6 persons), biracial or

mixed (6), West Indian (4), Arab or West Asian (1), Asian (1), and South East Asian (1). The majority of the participants were never married (42 persons); the other participants in the sample were divorced or had their marriage annulled (9), married or living as though married (5), and separated (5). Twenty-eight persons lived alone; the remainder of the sample lived in supportive housing or a boarding home (11 persons), with their spouse and children (10), with their parents (9), were hospitalized at the time of the study (2), and lived with roommates (1). The majority of the sample had graduated from a two-year college program (17 persons), completed part of a college or university program (15), and graduated high school (13); nine persons completed grades 7-12 without graduating high school; six graduated from a four-year university program, and one person completed graduate or professional school. Most of the sample were unemployed (46 persons); 11 persons were working part-time; three were working casually; one was working full-time.

Fifty-nine persons were being treated with psychotropic medication(s) at the time of the study; two persons were medication-free. The majority of the sample had been hospitalized five or more times for psychiatric reasons (26 persons); 6 had been hospitalized four times; 5 had been hospitalized three times; 13 had been hospitalized twice; 8 had been hospitalized once; and 3 had never been hospitalized. Age at first psychiatric hospitalization ranged from 12 to 53 years, with a mean age of 25.7 years. Eighteen persons had been hospitalized once for medical reasons; 9 experienced two medical hospitalizations; 3 experienced three medical hospitalizations; 1 experienced four hospitalizations; 3 had experienced five or more medical hospitalizations; and 27 had never been hospitalized for medical reasons. Forty-two persons (68.9% of the sample) endorsed having experienced at least one type of abuse in their lifetime.

Participants were asked to indicate up to three types of abuse experienced. The majority identified sexual (15 persons) or emotional (11) abuse; nine persons experienced physical abuse; four experienced intimate partner violence; and three declined to specify. Regarding second, additional, type of abuse experienced, four persons experienced physical abuse; one experienced sexual abuse; one experienced neglect; and one experienced financial abuse. One person endorsed a third additional type of abuse (emotional).

Procedure

Participants were recruited using advertisements, via clinician-referral, and by contacting participants from other studies who had consented to being notified about additional research participation opportunities. The majority of participants comprised a convenience sample who were recruited from other studies being conducted at CAMH. All participants provided informed consent prior to engaging in any study-related procedures, and were required to demonstrate understanding of study requirements, and associated risks and benefits, as part of the consent process. Participants were advised that participation was voluntary and were asked to complete a set of questionnaires (described in the Measures section below), for which they received $20. Each participant was given the option to complete the questionnaires in one session of up to two hours, to take breaks as needed, or to complete the questionnaires over two sessions. Every participant completed the questionnaires in one sitting. Participants were also advised that they could withdraw from the study at any time, or choose not to answer any question, without undue effect on their psychiatric care. In accordance with applicable regulatory guidelines governing research involving human participants, this study was reviewed by and received approval from the research ethics boards at York University and the institution where data were collected.

Measures

Multidimensional Perfectionism Scale – Short Form (MPS-SF). The

Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991b, 2004; Hewitt, Flett,

Turnbull-Donovan, & Mikail, 1991) is a 45-item self-report questionnaire with three subscales

each comprised of 15 items. Each subscale is designed to assess one of the three dimensions of

trait perfectionism: self-oriented perfectionism (e.g., "One of my goals is to be perfect in

everything I do"), other-oriented perfectionism (e.g., "I have high expectations for the people

who are important to me"), and socially prescribed perfectionism (e.g., "People expect more

from me than I am capable of giving"). Items are rated using a 7-point Likert scale indicating

the level of agreement with each statement (1 = Strongly Disagree and 7 = Strongly Agree).

Several items are reverse-scored. Subscales are scored separately, with no total score across the

three subscales, and higher scores are indicative of greater perfectionism.

Hewitt and Flett (1991b, 2004) have established the validity and reliability of the MPS.

A principal components factor analysis confirmed that the scale taps three separate factors

corresponding to the three dimensions of trait perfectionism, and that this factor structure holds

across clinical and non-clinical populations. Convergent and discriminant validity have also

been demonstrated (see Hewitt & Flett, 1991a). Cronbach's alpha coefficients for self-oriented

perfectionism, other-oriented perfectionism, and socially prescribed perfectionism, respectively,

were reported as .89, .79, and .86 in a student sample, and .88, .74, and .81 in a patient sample,

thus demonstrating an acceptable level of internal consistency reliability. Three-month test-

retest reliabilities were reported as .88 for self-oriented perfectionism, .85 for other-oriented

perfectionism, and .75 for socially prescribed perfectionism. Finally, Hewitt and colleagues

(Hewitt & Flett, 1991b; Hewitt et al., 1991) have established that the MPS dimensions are not influenced by response biases.

The MPS-SF was created by G. Flett (personal communication, May 2011) for use with individuals affected by psychotic illness using 15 items from the original MPS. None of the items are reverse-scored and items were selected based on readability and construct validity. The short-form retains the format of the parent scale and each subscale contains five items each. Hassan and colleagues (2013a, 2013b) tested the MPS-SF in a sample of individuals with psychotic illness and found the abbreviated scale to be reliable, with Cronbach's alpha coefficients for self-oriented, other-oriented, and socially prescribed perfectionism as .82, .79, and .72, respectively (see also Hassan et al., 2012a, 2012b, 2012c, 2012d, 2012e, 2014a, 2014b, 2014c, 2014d). Four-month test-retest reliabilities were reported as .92 for self-oriented perfectionism, .85 for other-oriented perfectionism, and .88 for socially prescribed perfectionism (Hassan et al., 2013a, 2013b; see also Hassan et al., 2012d, 2012e).

Perfectionistic Self-Presentation Scale – Short Form (PSPS-SF). The Perfectionistic Self-Presentation Scale (PSPS; Hewitt, Flett, Sherry, et al., 2003) is a 27-item self-report inventory designed to assess the domains of perfectionistic self-presentation. The scale is comprised of three subscales, perfectionistic self-promotion (10 items; e.g., "I must always appear to be perfect"), non-display of imperfection (10 items; e.g., "I hate to make errors in public"), and non-disclosure of imperfection (7 items; e.g., "I should always keep my problems to myself"). Items are rated using a 7-point Likert scale indicating the level of agreement with each statement. Several items are reverse-scored. Subscales are scored separately, with no total

score across the three subscales, and higher scores are indicative of greater perfectionistic self-presentation.

Hewitt, Flett, Sherry, and colleagues (2003) established the validity and reliability of the PSPS. A principal components factor analysis confirmed the three-factor structure of perfectionistic self-presentation. Coefficients of congruence established that the factor structure is highly consistent across student, clinical, and community samples. Cronbach's alpha coefficients for the subscales ranged between .78 and .86, indicating an acceptable level of internal consistency reliability. Test-retest reliabilities for the perfectionistic self-promotion, non-display of imperfection, and non-disclosure of imperfection subscales respectively were .83, .84, and .74 over a 3 week period, and .81, .81, and .79 over a four-month period. Convergent and discriminant validity were also demonstrated; in addition, the validity of the PSPS has since been demonstrated in a variety of populations and contexts, for example, in adolescents with anorexia nervosa (Castro et al., 2004; see also Ferrari & Thompson, 2006, and Rudiger, Cash, Roehrig, & Thompson, 2007).

The PSPS-Short Form (PSPS-SF) was created by G. Flett (personal communication, May 2011) for use with individuals affected by psychotic illness using 12 items from the original Perfectionistic Self-Presentation Scale. One of the items is reverse-scored and items were selected based on readability and construct validity. The short-form retains the format of the parent scale and each subscale contains four items each. Hassan and colleagues (2013a, 2013b) tested the PSPS-SF in a sample of individuals with psychotic illness and found the abbreviated scale to be reliable, with Cronbach's alpha coefficients for non-disclosure of imperfection, non-display of imperfection, and perfectionistic self-promotion as .72, .76, and .88, respectively (see

also Hassan et al., 2012a, 2012b, 2012c, 2012d, 2012e, 2014a, 2014b, 2014c, 2014d). Four-month test-retest reliabilities were reported as .69 for non-disclosure of imperfection, .75 for non-display of imperfection, and .89 for perfectionistic self-promotion (Hassan et al., 2013a, 2013b; see also Hassan et al., 2012d, 2012e).

DAS - Defeatist Beliefs. The Defeatist Beliefs Scale (Grant & Beck, 2009a) is a 15-item self-report inventory derived from the Dysfunctional Attitudes Scale (DAS). Defeatist beliefs are overgeneralized negative beliefs about one's ability to perform tasks (e.g., "If I fail partly, it is as bad as being a complete failure"). Items are rated using a 4-point Likert scale (1 = Totally Agree and 4 = Totally Disagree). Several items are reverse scored. Higher scores reflect endorsement of defeatist beliefs. The psychometric properties of the DAS and its subscales have been well-established (e.g., Weissman & Beck, 1978).

Distress Tolerance Scale (DTS). The DTS (Simons & Gaher, 2005) is a 15-item self-report inventory of emotional distress tolerance, measuring four factors: tolerance, (3 items; e.g., "Feeling distressed or upset is unbearable to me"), appraisal (6 items; e.g., "Other people seem to be able to tolerate feeling distressed or upset better than I can"), absorption (3 items; e.g., "My feelings of distress are so intense that they completely take over"), and regulation (3 items; e.g., "I'll do anything to stop feeling distressed or upset"). Items are rated using a 5-point Likert scale indicating level of agreement with each statement (1 = Strongly Agree and 5 = Strongly Disagree). One item is reverse-scored. Subscale scores are calculated as the mean of the corresponding subscale items. The higher-order DTS score is calculated as the mean of the four subscale means. Higher scores indicate greater tolerance for emotional distress.

Simons and Gaher (2005) investigated the psychometric properties of the DTS. Factor analysis suggested a hierarchical model in which a single second-order factor predicts four first-order factors: tolerance, appraisal, absorption, and regulation. Cronbach's alpha coefficient for the second order factor (mean of the first-order factors) was .82 - .85, indicating an acceptable level of internal consistency reliability. Convergent and discriminant reliabilities were also established. Six-month test-retest reliability for the second-order scale was acceptable, with an intra-class correlation of .61.

Hinting Task. The hinting task (Corcoran, Mercer, & Frith, 1995) is a 10-item task intended to assess individuals' ability "to infer the real intentions behind indirect speech utterances" (Corcoran et al., 1995, p. 7). Each item contains a very brief story that ends with one of the characters dropping a very obvious hint to another character (e.g., "Melissa goes to the bathroom for a shower. Anne has just had a bath. Melissa notices the bath is dirty, so she calls upstairs to Anne: 'Couldn't you find the Ajax, Anne?'"). Interviewees are then asked what the character really meant by what he/she said. An appropriate response is given a score of 2. If interviewees do not give an acceptable response, a more obvious hint is provided to the interviewee (e.g., "Melissa goes on to say, 'You're very lazy sometimes, Anne!'"), and he/she is asked again what the character who spoke wants the other character to do. Appropriate responses at this stage are scored 1; responses that indicate a failure to correctly infer the intended meaning of the two pieces of indirect speech are given a score of 0. All items are read aloud to interviewees and items may be re-read if necessary. Higher scores are indicative of stronger ability to infer the intentions of others. The hinting task is one of the most widely used measures of intention-inference and has effectively distinguished between individuals with

schizophrenia and a control sample comprised of healthy persons and persons with non-psychotic psychiatric illness (Corcoran et al., 1995). The face validity of the test has also been supported (Corcoran, 2003).

Comic Strip Task. The comic strip task (Brunet, Sarfati, & Hardy-Baylé, 2003; Sarfati, Hardy-Baylé, Besche, & Widlöcher, 1997) is an intention-inference test comprised of 30 comic strips each with three pictures depicting a character performing a simple action in logical sequence. Interviewees are asked to infer the character's intention and identify the next logical step in the sequence by choosing among three different cartoon drawings. The task was created to assess theory of mind abilities in individuals whose verbal abilities may be limited. Correct answers are scored 1, with a maximum total score of 30. Higher scores are indicative of stronger intention inference abilities.

The comic-strip task is one of the most widely used intention-inference measures. Sarfati and colleagues (1997) indicate the task items have good inter-item homogeneity and were able to distinguish between individuals with schizophrenia and control groups comprised of healthy persons and persons with major depressive symptomatology. These results were replicated by Brunet and colleagues (2003). This measure was included in this study to offset any confounding that may have resulted from the fact that the Hinting Task requires expressive communication skills, which may be impaired in those with psychotic illness. Information is also presented visually versus aurally, as it is in the Hinting Task, to accommodate any interference from voice-hearing or other internally-generated stimuli and/or difficulties with processing auditory information.

List of Life Circumstances. This measure is a list of life events that is included as part

of the Maastricht Interview for Voice Hearers (Corstens, Escher, & Romme, 2009), which is a research tool designed to assess individuals' experience of hearing voices. The interview includes a list of 25 life events that fall into four categories: stressful changes (e.g., "living on your own for the first time"), illness and death (e.g., "serious illness of a loved one"), love and sexuality (e.g., "falling in love and having been rejected"), and religion, spirituality, mystic, and cosmic experiences (e.g., "problems within a religious community/sect"). These life events have been demonstrated to be related to subsequent voice-hearing and other psychotic symptomatology. Interviewees are asked to indicate whether they have experienced the event (Yes/No) and, if so, in what year/at what age the event occurred. This list was included in this study to provide a non-intrusive assessment of life events, intended to minimize the risk of inadvertent re-traumatization.

Perceived Stress Scale (PSS). The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item self-report measure of the extent to which life experiences are appraised as stressful (e.g., "In the last month, how often have you been upset because of something that happened unexpectedly?"). Items are rated on a 5-point Likert scale (0 = Never and 4 = Very Often), with higher scores reflective of greater perceived stress. Four items are reverse-scored. Cohen and colleagues (1983) report the psychometric properties of the scale, which include adequate internal consistency and convergent validity. Hewitt, Flett, and Mosher (1992) extended this research and established that the PSS is in fact comprised of two factors assessing perceived stress and coping ability.

Survey of Recent Life Experiences – Short Form (SRLE-SF). The SRLE-SF (Kohn & Macdonald, 1992) is a 41-item self-report inventory of everyday hassles, measuring six

factors: social and cultural difficulties (11 items; e.g., "having your trust betrayed by a friend"),

work (7 items; e.g., "conflict with your supervisor at work"), time pressure (8 items; e.g., "too

many things to do at once"), finances (6 items; e.g., "failing to get money you expected"), social

acceptability (5 items; e.g., "social rejection), and social victimization (4 items; e.g., "being

taken advantage of"). Extent of involvement with each experience is rated on a 4-point Likert

scale (1 = Not At All Part of My Life and 4 = Very Much Part of My Life). Higher scores are

indicative of more involvement with everyday hassles. Cronbach's alpha for each of the

subscales is as follows: social and cultural difficulties (.78), work (.82), time pressure (.81),

finances (.76), social acceptability (.68), and social victimization (.76), with coefficient alpha for

the overall scale as .90. Convergent reliability was established.

Social Phobia Inventory (SPIN). The SPIN (Connor, Davidson, Churchill, Sherwood,

& Weisler, 2000) is a 17-item self-report questionnaire assessing symptoms of social anxiety

across five factors: fear and avoidance of talking to strangers and of social gatherings, fear and

avoidance of criticism, physiological symptoms, fear and avoidance of authority, and fear of

being the center of attention and of public speaking. Items are rated using a 5-point Likert scale

(0 = Not At All and 4 = Extremely), with higher total scores reflecting greater distress. The

SPIN has established internal consistency, test-retest reliability, and convergent and discriminant

validity.

Green et al. Paranoid Thought Scales - Social Reference (GPTS-SR). The GPTS-SR

(Green et al., 2008) is a 16-item self-report measure that assesses ideas of social reference that

are relevant to paranoia. Interviewees are asked to rate using a 5-point Likert scale (1 = Not At

All and 5 = Totally) the extent of their feelings of having had particular experiences (e.g., "I have

been upset by friends and colleagues judging me critically"). Higher scores are indicative of higher levels of paranoia. Adequate reliability was established, with Cronbach's alpha rating .90 in both clinical and non-clinical samples. Convergent validity and test-retest reliability were also demonstrated (Green et al., 2008).

Experience of Shame Scale (ESS). The ESS (Andrews et al., 2002) is a self-report questionnaire designed to measure characterological shame, behavioral shame, and bodily shame. For the current study, two of the three subscales (21 items), characterological shame (i.e., shame of personal habits, manner with others, sort of person one is, and personal ability) and behavioral shame (i.e., shame about doing something wrong, saying something stupid, and failure in competitive situations) will be used given their conceptual relevance to trait perfectionism, perfectionistic self-presentation, and social anxiety. Items assess respondents' experience or feeling of shame, their concern for others' opinions, and their attempts to conceal or avoid that which makes them feel shameful, providing affective, cognitive, and behavioral indices of shame. Items are rated on a 4-point Likert scale ranging from 1 = Not At All to 4 = Very Much. All items are forward-scored and higher scores reflect greater shame. Construct and discriminant validity have been demonstrated (Andrews et al., 2002). For the full scale, the authors reported an alpha coefficient of .92, and an 11-week test-retest reliability of .83. For the characterological and behavioral shame subscales respectively, Cronbach's alpha coefficients were .90 and .87, and the 11-week test-retest reliabilities were .78 and .74.

Brief Symptom Inventory-18 (BSI-18). The BSI-18 (Derogatis, 2001) is an 18-item self-report questionnaire designed to assess psychological distress. The scale is comprised of three subscales with six items each: somatization (e.g., "nausea or upset stomach"), depression

(e.g., "feeling blue"), and anxiety (e.g., "suddenly scared for no reason). Respondents rate their level of distress using a 5-point Likert scale (0 = Not At All and 4 = Extremely). Higher scores are indicative of greater psychological distress. Derogatis (2001) reports the psychometric properties of the scale, including convergent and discriminant validity. Cronbach's alpha for the total scale is .89, somatization .74, depression .84, and anxiety .79.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders Screen – Obsessive-Compulsive Personality Disorder subsection (SCID-II OCPD). The SCID-II OCPD (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) is a 9-item self-report questionnaire designed to screen for symptoms of obsessive-compulsive personality disorder (e.g., "Do you have very high standards about what is right and what is wrong?"). Respondents indicate their endorsement of each item (Yes or No). The SCID-II screen is not intended as a stand-alone diagnostic tool; hence, the psychometric properties have not been reported. First and colleagues (1997) have cautioned that the screen is intended to yield a high number of false positives. For this study, rate of endorsement was interpreted as experience of OCPD symptomatology only.

Florida Obsessive-Compulsive Inventory (FOCI). The FOCI (Storch et al., 2007) is a 25-item self-report inventory of obsessive-compulsive disorder (OCD) symptomatology. Twenty of the items include symptoms of OCD, with 10 items reflecting common obsessions and 10 items reflecting common compulsions; respondents indicate endorsement of each symptom (Yes or No). The final five items assess symptom severity (e.g., "How much distress do they cause?" and "How hard is it to control them?") and items are rated using a 5-point Likert scale appropriate to the question asked (e.g., 0 = None and 4 = Extreme and 0 = Complete Control and 4 = No Control). Scores on the symptom scale can range from 0 to 20. For the

severity scale, scores can range from 0 to 20. Higher scores are indicative of greater distress.

Storch and colleagues (2007) report the psychometric properties of the scale, including

Cronbach's alpha as .89 and good concurrent validity.

Statistical Analyses

Descriptive statistics were calculated. This information included sample characteristics

and psychometric properties of measurement tools. Between subjects differences based on

demographic and descriptive characteristics were not assessed, as neither demographic nor

descriptive factors were included in any of the hypothesized models in this study. To preserve

power and facilitate exploration of the relationships among key constructs in this study, analyses

were collapsed across all demographic and descriptive variables and included all available data

in the sample.

Correlational analyses were used to assess associations among relevant scales and

subscales. In addition, given that only theory-driven, a priori predictions were proposed in this

study, structural equation modelling techniques were justified for statistical analysis of the

models described in hypotheses one, two, and three (see Flora & Flake, 2017; and Kline, 2016,

for discussions of the principles underlying structural equation modelling). Specifically, latent

construct analysis, a type of confirmatory factor analysis, was used to assess hypotheses one and

two (see Flora & Flake, 2017, for discussion of and guidelines for confirmatory factor analysis),

and path analysis was used to assess hypothesis three. Fisher's r-to-z transformation was used to

test the statistical differences among the correlations in hypothesis four. Multiple regression was

used to assess whether variables in hypothesis five significantly predicted indices of distress.

All available data from 61 participants were included where possible. Cases with missing data were excluded where relevant. All analyses were conducted using SPSS, R, and software created by Lee and Preacher (2013; for calculating the statistical difference between two dependent correlations using Fisher's *r*-to-*z* transformation).

Effect Size and Power

Limited resources and time contributed to a priori decisions about sample size in this study. Effect sizes were determined by the magnitude of factor loadings, correlation and path coefficients, and coefficients of determination r^2 (D. Flora, personal communication, November 14, 2014), which allowed for post hoc power calculations. By convention, for correlation coefficients *r*, coefficients of determination r^2, and chi-square tests of fit *w*, .10 is considered a small effect, .30 a medium effect, and .50 a large effect, (Cohen, 1992; Kline, 2017).

Regarding correlational analyses, Cohen (1992) provided guidelines for sample sizes required to achieve 80% power for detecting small, medium, and large effects, thus allowing for post hoc considerations of power for correlational analyses in this study. According to Cohen (1992), sample sizes of 41 and 28 are required for 80% power to detect correlations with large effects ($r \geq .50$) at $\alpha = .01$ and $\alpha = .05$, respectively. Sample sizes of 125 and 85 are required for 80% power to detect correlations with medium effects ($r \geq .30$) at $\alpha = .01$ and $\alpha = .05$, respectively, and even larger samples are required to detect correlations with small effects ($r \geq$ .10). Thus, the sample size in this study was sufficient for detecting correlations with large effects at both at $\alpha = .01$ and $\alpha = .05$, with an 80% probability of correcting identifying a significant *r*. Correlations with small or medium effect sizes should be interpreted with caution.

While various suggestions have been proposed for determining sample sizes required to achieve adequate power using structural equation models [e.g., 5 or 10 observations per estimated parameter (Bentler & Chou, 1987)], later work has demonstrated that these "rules of thumb" are problematic given their lack of model specificity and tendency to either over- or under-estimate required sample sizes (Wolf, Harrington, Clark, & Miller, 2013). A priori calculations of minimum sample sizes to achieve adequate power using confirmatory factor analysis and path analysis require a priori knowledge of factor and indicator loadings, regression path coefficients, factor correlations, effect size, and amount of missing data per indicator, in addition to the number of factors, indicators per factor, and latent variables, and must account for measurement error, parameter bias (i.e., differences between expected and true values of estimated parameters), and solution propriety (i.e., minimum number of cases required to avoid improper solutions or failures to converge) (Wolf et al., 2013). Yet, particularly given the novelty of the hypotheses investigated in this dissertation, the very purpose of the statistical analyses undertaken here is to provide an estimate of relevant factor loadings and get a sense of the magnitude of relevant effects in persons with psychotic illness.

A priori estimates of relevant parameters and resultant sample size requirements for structural equation models are not straightforward or linear. For example, in one study designed to assess sample size requirements for structural equation models, required sample size increased when moving from one to two latent variables in a model, but not when moving from two to three factors, whereas required sample size decreased with increases in number of indicators per factor (Wolf et al., 2013). As another example, in the same study, factor loadings or regression coefficients with effects that were very weak or very strong required larger sample sizes than

effects of more moderate magnitude (Wolf et al., 2013). Furthermore, Wolf and colleagues'

(2013) study suggested that no sample size is sufficient to offset inadequate reliability of

psychometric measures. The minimum sample size required for a given model is neither

definitive nor static but instead varies, falling within a range of 30-460 cases or observations,

depending on the specific model and its characteristics (Wolf et al., 2013). These considerations

underscore the careful exploratory nature of the current study which strove to provide estimates

of relevant factor loadings, regressive path coefficients, and effect magnitudes for use in future

studies. Also underscored are the post-positivist assumptions underlying this study's methods,

suggesting scientific endeavors can only approach an approximation of "truth", without actually

reaching it. For a comprehensive discussion of the complexity involved in calculating required

sample sizes for structural equation models, readers are referred to Wolf and colleagues' (2013)

study.

Results

Psychometric Properties

Table 1 reports indices of central tendency and spread, and the reliability coefficients, for

relevant scales and subscales included in the study.

All measures, with the exception of the SCID-II OCPD Subscale, the Hinting Task, and

the List of Life Circumstances, demonstrated adequate reliability ($\alpha \geq .70$). The Hinting Task

and the List of Life Circumstances, each with $\alpha = .62$, demonstrated marginal reliability (Strauss,

Sherman, & Spreen, 2006) and should be interpreted with some caution; some argue that

reliabilities above .60 may be adequate for research purposes, particularly in the exploratory

Table 1

Scale and Subscale Means, Standard Deviations, and Cronbach's Alpha Coefficients of Reliability

Scale or Subscale Variable	N	M *(SD)*	α
Multidimensional Perfectionism Scale: Self-Oriented Perfectionism	61	21.95 (7.8)	.90
Multidimensional Perfectionism Scale: Other-Oriented Perfectionism	61	18.62 (7.3)	.87
Multidimensional Perfectionism Scale: Socially Prescribed Perfectionism	61	20.05 (7.1)	.83
Perfectionistic Self-Presentation Scale: Non-Disclosure of Imperfections	61	14.56 (5.5)	.68
Perfectionistic Self-Presentation Scale: Non-Display of Imperfections	61	16.15 (5.8)	.76
Perfectionistic Self-Presentation Scale: Perfectionistic Self-Promotion	61	16.56 (6.8)	.90
Distress Tolerance Scale - Higher Order Distress Tolerance Total Score	61	2.78 (0.9)	.92
Dysfunctional Attitudes Scale - Defeatist Beliefs Subscale Score	61	29.87 (9.6)	.89
Survey of Recent Life Experiences Short Form Total Score	59	78.12 (20.9)	.92
Social Phobia Inventory Total Score	60	22.22 (14.8)	.91
Green et al. Paranoid Thoughts – Social Reference Subscale Score	58	35.12 (15.9)	.94
Perceived Stress Scale Total Score	59	17.37 (7.7)	.87
Experience of Shame Scale Total Score	59	44.02 (14.1)	.93
18-item Brief Symptom Inventory Total Score	59	17.31 (12.7)	.91
SCID-II OCPD Subscale Total Score	60	3.92 (2.0)	.55
Florida Obsessive-Compulsive Inventory Total Score	59	9.20 (7.6)	.87
Comic Strip Task Total Score	59	20.12 (6.7)	.92
Hinting Task Total Score	61	16.33 (2.8)	.62
List of Life Circumstances Total Score	59	15.56 (3.3)	.62

Note. N < 61 indicates missing data.

phase (Aron & Aron, 1999; see also Strauss et al., 2006). The SCID-II OCPD subscale

demonstrated poor reliability (α = .55), which may be due to the intended over-inclusiveness of

the measure.

Hypothesis 1: Psychological Vulnerability to Traumatic Impact and Psychological Distress

Hypothesis 1 proposed that psychological vulnerability comprised of stronger socially

prescribed perfectionism and perfectionistic self-presentation and lower distress tolerance would predict stronger traumatic impact of difficult life events, more daily stress, and more perceived stress, which would predict higher levels of psychological distress. As part of this examination, it was predicted that stronger socially prescribed perfectionism and perfectionistic self-presentation and lower distress tolerance would be associated with more psychological distress. While the proposed model was under-identified and model fit statistics were poor, correlational predictions were generally supported.

Table 2 reports the correlations among socially prescribed perfectionism and perfectionistic self-presentation, distress tolerance, experience of traumatic life events, daily stresses or hassles, perceived stress, and indices of psychological distress (i.e., shame, paranoid thoughts, social anxiety, and the BSI-18). Not surprisingly, the inter-correlations among socially prescribed perfectionism and perfectionistic self-presentation facets were significant and large ($.50 \leq r \leq .77$, $p < .01$). As predicted, there were also significant large correlations between lower distress tolerance and higher levels each of non-disclosure of imperfections and non-display of imperfections (respectively, $r = -.53$, $-.63$, $p < .01$), and significant medium correlations between lower distress tolerance and higher levels each of socially prescribed perfectionism and perfectionistic self-promotion (respectively, $r = -.44$, $-.46$, $p < .01$), indicating higher levels of interpersonal facets of perfectionism were significantly associated with lower distress tolerance. The significant correlational relationships between lower distress tolerance and higher perfectionism support the notion of a psychological vulnerability to psychotic illness vis-à-vis interpersonal style and poorer emotional resilience.

Table 2

Bivariate Correlations Among Psychological Vulnerability Factors, Traumatic Experiences, and Psychological Distress

	PSPS-Displ	PSPS-Discl	PSPS-PSP	DT	LLC	PSS	SRLE-SF	ESS	GPT-SR	SPIN	BSI-18
MPS-SPP	.53**	.50**	.77**	-.44**	-.11	.08	.37**	.17^	.28*	.22*	.25*
PSPS-Displ	-	.72**	.69**	-.63**	-.13	.33**	.32**	.44**	.33**	.61**	.38**
PSPS-Discl		-	.58**	-.53**	-.13	.31**	.29*	.29*	.35**	.48**	.41**
PSPS-PSP			-	-.46**	-.10	.08	.43**	.35**	.36**	.39**	.35**
DT				-	.32**	-.43**	-.35**	-.54**	-.29*	-.60**	-.53**
LLC					-	.21^^	.21^^	.01	.11	.10	.14
PSS						-	.48**	.42**	.34**	.52**	.62**
SRLE-SF							-	.47**	.59**	.45**	.68**
ESS								-	.40**	.68**	.53**
GPT-SR									-	.49**	.43**
SPIN										-	.64**

Note. $56 \leq N \leq 61$ as a result of missing data. MPS-SPP = MPS Socially Prescribed Perfectionism; PSPS-Displ = PSPS Non-Display of Imperfections; PSPS-Discl = PSPS Non-Disclosure of Imperfections; PSPS-PSP = PSPS Perfectionistic Self-Promotion; DT = Higher Order Distress Tolerance Total; LLC = List of Life Circumstances Total; PSS = Perceived Stress Scale Total; SRLE-SF = Survey of Recent Life Experiences Short Form Total; ESS = Experience of Shame Scale Total; GPT-SR – Green et al. Paranoid Thoughts Social Reference Subscale Total; SPIN = Social Phobia Inventory Total; BSI-18 = 18-item Brief Symptom Inventory Total

$*p < .05$, $** p < .01$, both one-tailed. $^p = .09$, $^^.054 \leq p \leq .059$, all one-tailed.

There were interesting relationships regarding the latent construct representing traumatic

impact. As expected, there was a significant medium correlation between perceived stress and daily hassles ($r = .48$, $p < .01$); however the relationships between experience of traumatic life circumstances and each of perceived stress and daily hassles were small and only approached significance ($r = .21$, $.054 \leq p \leq .059$). Unexpectedly, experience of traumatic life circumstances was not significantly associated with any of the perfectionism variables, and there was a significant positive correlation between distress tolerance and experience of traumatic life circumstances ($r = .32$, $p < .01$), a medium effect. This latter relationship may suggest that experience of a larger number of traumatic events may confer a sort of emotional resilience or stamina in order to cope over time, rather than worsening the experiences of subsequent traumatic events.

That said, as predicted, there were significant medium correlations such that more daily hassles were associated with higher levels of each of socially prescribed perfectionism, non-display of imperfections, and perfectionistic self-promotion ($.32 \leq r \leq .43$, $p < .01$), and more daily hassles were associated with lower distress tolerance ($r = -.35$, $p < .01$). There was also a small but significant correlation between more daily hassles and higher levels of non-disclosure of imperfections ($r = .29$, $p < .05$). Also as predicted, there were significant medium correlations between perceived stress and each of non-display of imperfections, non-disclosure of imperfections, and lower distress tolerance ($.31 \leq |r| \leq .43$, $p < .01$). Unexpectedly, the relationships between perceived stress and each of socially prescribed perfectionism and perfectionistic self-promotion were not statistically significant.

Thus, the correlations suggest a weaker relationship between experience of traumatic life events and each of perceived stress and daily hassles, relative to a strong relationship between

daily hassles and perceived stress. In addition, there were no significant correlations between perfectionism and experience of life events, whereas there was a significant positive correlation between higher distress tolerance and experience of larger numbers of traumatic events. Finally, both lower distress tolerance and higher perfectionism were generally significantly associated with both perceived stress and daily hassles. Taken together, it is possible that the experience of traumatic events is distinct from perceived stress and daily hassles and should not have been included as part of the "Traumatic Impact" latent construct. Perhaps a different measure may have better captured the impact of repeated or multiple experiences of trauma, rather than a measure assessing the total number of traumatic events experienced.

The notion of a latent construct representing psychological distress was supported by correlational data. Shame, paranoid ideation, social anxiety, and the BSI-18 were all significantly correlated with one another ($.40 \leq r \leq .68$, $p < .01$). As predicted, lower distress tolerance was associated with more psychological distress, with significant large effects for lower distress tolerance and each of shame, social anxiety, and the BSI-18 ($.53 \leq |r| \leq .60$, $p < .01$), and a significant small effect for lower distress tolerance and paranoid ideation ($r = -.29$, $p < .05$). Also as predicted, higher levels of perfectionism were generally associated with higher levels of psychological distress. Most correlations between perfectionism facets and indices of psychological distress were significant medium effects ($.33 \leq r \leq .48$, $p < .01$). Exceptions include the significant large correlation between non-display of imperfections and social anxiety ($r = .61$, $p < .01$), and the significant small correlations between non-disclosure of imperfections and shame, and socially prescribed perfectionism and each of paranoid ideation, social anxiety, and the BSI-19 ($.22 \leq r \leq .29$, $p < .05$). Additionally, the relationship between socially

prescribed perfectionism and shame only approached significance ($r = .17$, $p =.09$). The

relationships among perfectionism facets and psychological distress are explored in more depth

in Hypothesis 3, described in the relevant section below.

Regarding traumatic impact and psychological distress, again interesting results emerged.

Whereas there were significant medium ($.34 \leq r \leq .47$, $p < .01$) and large ($.52 \leq r \leq .68$, $p < .01$)

correlations among more perceived stress and more daily hassles and higher levels of each of

shame, paranoid ideation, social anxiety, and the BSI-18, the relationships between experience of

traumatic life events and all indices of psychological distress were all non-significant. This

divergence in relationships between indices of psychological distress and indicators loading on

the traumatic impact latent construct suggest, again, that perhaps experience of traumatic life

events in and of itself is distinct from perceived stress and experience of daily hassles.

Results of the Latent Construct Analysis. The model proposed in Hypothesis 1 was

specified and estimated using the maximum likelihood method of estimation. While the model

converged normally after 964 iterations using 54 of 61 observations, standard errors could not be

calculated and thus produced an improper solution. Improper solutions are the product of under-

or un-identified models, which suggest that there are more unknown than known parameters in a

model or that the sample size is too small to fit the model to the data. Results are considered

invalid. Fit statistics for the model proposed in Hypothesis 1 were poor. $\chi^2 = 102.66$ ($df = 52$, p

$\leq .01$), however CFI $= 0.85$ and TLI $= 0.81$ (both below conventional criteria of 0.90 or 0.95

which indicate better model-data fit), and RMSEA $= 0.13$ ($p = .001$, 90% CI [0.096, 0.172]),

whose significant p value suggests that we must reject the "close-fit" null hypothesis and thus

our model does not fit the data closely. Additionally, the SRMR $= 0.095$, which exceeds the

conventional SRMR threshold of 0.08 that would indicate close model-data fit. The originally specified model should have been identified based on the two-indicator rule which states that a confirmatory factor analysis model with at least two factors and at least two indicators per factor is identified (Kline, 2016). Nonetheless, to reduce the number of unknown parameters in the model, the first factor loading in the model was fixed to 1 and error variances were fixed to 0 and the model was re-fitted to the data, which produced improper solutions and the same poor model fit statistics. Thus, factor loadings, regression coefficients, and associated coefficients of determination r^2 for Hypothesis 1 are invalid and will not be further discussed.

Hypothesis 2: Perfectionism, Theory of Mind, Paranoid Ideation, and Social Anxiety

Hypothesis 2 proposed that higher levels of socially prescribed perfectionism and perfectionistic self-presentation would predict poorer performance on theory of mind tasks, which in turn would predict higher levels of paranoia and social anxiety. While the proposed model was under-identified and model fit statistics were generally poor, correlational predictions about relationships between higher levels of perfectionism facets and poorer performance on theory of mind tasks were generally supported. These results are particularly important, as theory of mind has not previously been studied in association with perfectionism. The results suggest that a perfectionistic personality style may contribute to poorer performance on theory of mind tasks, rather than poorer performance being necessarily reflective of neuropsychological impairments in persons with psychotic illness, as has been suggested in previous work (see, for example, Brüne, 2005, for a review of theory, empirical support, and controversies related to theory of mind as reflective of neurocognitive deficits). Another possibility is that neuropsychological impairments underlying theory of mind performance may make a person

more vulnerable to adopting perfectionistic views. The prediction that perfectionism facets would be associated with social anxiety and paranoid ideation was also supported in this study. Unexpectedly, performance on theory of mind tasks was not associated with either paranoid ideation or social anxiety. Table 3 below reports the correlations among socially prescribed perfectionism and perfectionistic self-presentation, performance on theory of mind tasks, social anxiety, and paranoid ideation.

Table 3

Bivariate Correlations Among Perfectionism, Performance on Theory of Mind Tasks, Social Anxiety, and Paranoid Ideation

	PSPS-Discl	PSPS-Displ	PSPS-PSP	Hinting Task Total	Comic Strip Total	SPIN	GPT-SR
MPS-SPP	.50**	.53**	.77**	-.36**	-.18^	.22*	.28*
PSPS-Discl	-	.72**	.58**	-.27*	-.30*	.48**	.35**
PSPS-Displ		-	.69**	-.11	-.26*	.61**	.33**
PSPS-PSP			-	-.23*	-.24*	.39**	.36**
Hinting Task Total				-	.40**	.03	-.11
Comic Strip Total					-	-.07	-.08
SPIN						-	.49**

Note. $57 \leq N \leq 61$ as a result of missing data. MPS-SPP = MPS Socially Prescribed Perfectionism; PSPS-Discl = PSPS Non-Disclosure of Imperfections; PSPS-Displ = PSPS Non-Display of Imperfections; PSPS-PSP = PSPS Perfectionistic Self-Promotion; SPIN = Social Phobia Inventory Total; GPT-SR – Green et al. Paranoid Thoughts Social Reference Subscale Total
*$p < .05$, ** $p < .01$, both one-tailed. ^$p =.09$, one-tailed.

As noted for Hypothesis 1, not surprisingly, the inter-correlations among socially

prescribed perfectionism and perfectionistic self-presentation facets were significant and large ($.50 \leq r \leq .77, p < .01$). The theory of mind latent construct was supported, as there was a significant medium correlation between the hinting task and comic strip task ($r = .40, p < .01$). Additionally, as predicted, higher levels of perfectionism facets were generally significantly associated with poorer performance on theory of mind tasks. Specifically, there were significant small correlations between perfectionistic self-promotion and each of the hinting and comic strip tasks (respective, $r = -.23, -.24, p < .05$). There was a significant medium correlation between non-disclosure of imperfections and the comic strip task ($r = -.30, p < .05$) and a significant small correlation between nondisclosure of imperfections and the hinting task ($r = -.27, p < .05$). There was a significant medium correlation between socially prescribed perfectionism and the hinting task ($r = -.36, p < .01$) and a small correlation between socially prescribed perfectionism and the comic strip task that approached significance ($r = -.18, p < .09$). For non-display of imperfections, the correlation with the comic strip task was small and significant ($r = -.26, p < .05$), whereas the correlation with the hinting task was not statistically significant.

While the prediction that higher levels of perfectionism facets would be associated with more social anxiety and paranoid ideation was supported, performance on theory of mind tasks was unexpectedly not associated with either social anxiety or paranoid ideation. Most relationships among perfectionism facets and each of social anxiety and paranoid ideation were significant and of medium magnitude ($.33 \leq r \leq .48, p < .01$), with the exception of the significant large correlation between non-display of imperfections and social anxiety ($r = .61, p < .01$) and the significant small correlations between socially prescribed perfectionism and each of social anxiety and paranoid ideation (respectively, $r = .22, .28, p < .05$). Thus, as predicted,

perfectionism overlapped with the conceptually related theory of mind, social anxiety, and paranoid ideation.

The model proposed in Hypothesis 2 was specified and estimated using maximum likelihood, with error variances fixed to 0. While the model converged normally after 1083 iterations using 57 of 61 observations, standard errors could not be calculated and thus produced an improper solution. Fit statistics for the model proposed in Hypothesis 2 were generally poor: $\chi^2 = 22.66$ ($df = 13$, $p = .05$), CFI = 0.83, TLI = 0.71, RMSEA = 0.11 ($p = .10$, 90% CI [0.015, 0.191]), and SRMR = 0.08. To reduce the number of unknown parameters in the model, the first factor loading in the model was fixed to 1, which also produced an improper solution following normal convergence after 1091 iterations and the same poor model fit statistics. Thus, factor loadings, regression coefficients, and associated coefficients of determination r^2 for Hypothesis 2 are invalid and will not be discussed further.

Hypothesis 3: Perfectionism, Shame, and Psychological Distress

The relationships among both perfectionism facets and psychological distress were explored in more depth in Hypothesis 3. Specifically, a mediation model was proposed wherein higher levels of socially prescribed perfectionism and perfectionistic self-presentation would predict higher levels of shame, which in turn would predict higher levels of psychological distress. While model fit statistics were poor, correlational predictions were generally supported. Table 4 reports the correlations among socially prescribed perfectionism and perfectionistic self-presentation, shame, and indices of psychological distress.

As noted earlier, not surprisingly, the inter-correlations among socially prescribed perfectionism and perfectionistic self-presentation facets were significant and large ($.50 \leq r \leq$

Table 4

Bivariate Correlations Among Perfectionism, Shame, and Psychological Distress

	PSPS-Discl	PSPS-Displ	PSPS-PSP	ESS	GPT-SR	SPIN	BSI-18
MPS-SPP	.50**	.53**	.77**	.17^	.28*	.22*	.25*
PSPS-Discl	-	.72**	.58**	.29*	.35**	.48**	.41**
PSPS-Displ		-	.69**	.44**	.33**	.61**	.38**
PSPS-PSP			-	.35**	.36**	.39**	.35**
ESS				-	.40**	.68**	.53**
GPT-SR					-	.49**	.43**
SPIN						-	.64**

Note. $57 \leq N \leq 61$ as a result of missing data. MPS-SPP = MPS Socially Prescribed Perfectionism; PSPS-Discl = PSPS Non-Disclosure of Imperfections; PSPS-Displ = PSPS Non-Display of Imperfections; PSPS-PSP = PSPS Perfectionistic Self-Promotion; ESS = Experience of Shame Scale Total; GPT-SR – Green et al. Paranoid Thoughts Social Reference Subscale Total; SPIN = Social Phobia Inventory Total; BSI-18 = 18-item Brief Symptom Inventory Total
*$p < .05$, ** $p < .01$, both one-tailed. ^$p = .09$, one-tailed.

.77, $p < .01$). As predicted, higher levels of perfectionism were generally associated with more shame. Specifically, there were significant medium correlations between non-display of imperfections and perfectionistic self-promotion (respectively, $r = .44, .35, p < .01$), and a small significant correlation between non-disclosure of imperfection and shame ($r = .29, p < .05$). The small correlation between socially prescribed perfectionism and shame approached significance ($r = .17, p = .09$). Higher levels of psychological distress as indicated by paranoid ideation, social anxiety, and the BSI-18 were associated with higher levels of each of the perfectionism facets and shame, with significant large ($.53 \leq r \leq .68, p < .01$), medium ($.33 \leq r \leq .48, p < .01$), and

small ($.22 \leq r \leq .28, p < .05$) effects.

The mediation model proposed in Hypothesis 3 was specified and estimated using maximum likelihood. The model converged normally after 72 iterations using 56 of 61 observations. Fit statistics were generally poor: $\chi^2 = 25.97$ ($df = 12, p = .01$), CFI = 0.86, TLI = 0.75, RMSEA = 0.14 ($p = .03$, 90% CI [0.067, 0.221]), and SRMR = 0.12. Parameter estimates are presented in Table 5 below. However, as the parameter estimates are potentially misleading given poor model fit, focus of discussion will remain on correlational relationships in this model.

Table 5

Parameter Estimates for the Model Relating Perfectionism, Shame, and Psychological Distress

Regressions	Estimate	Standard Error	Z Score	*p* and CI
Shame ~ Non-Display of Imperfections	0.96	0.47	2.03	.04 [0.03, 1.89]
Shame ~ Non-Disclosure of Imperfections	-0.12	0.44	-0.28	.78 [-0.97, 0.73]
Shame ~ Perfectionistic Self-Promotion	0.58	0.45	1.29	.20 [-0.30, 1.45]
Shame ~ Socially Prescribed Perfectionism	-0.42	0.36	-1.15	.25 [-1.13, 0.29]
Social Anxiety ~ Shame	0.73	0.10	7.11	.00 [0.53, 0.93]
Paranoid Ideation ~ Shame	0.46	0.14	3.31	.00 [0.19, 0.73]
BSI-18 ~ Shame	0.49	0.10	4.82	.00 [0.29, 0.69]
Variances				
Shame	156.26	29.53		
Social Anxiety	118.12	22.32		
Paranoid Ideation	213.32	40.31		
BSI-18	114.65	21.67		
r^2				
Shame	0.21			
Social Anxiety	0.47			
Paranoid Ideation	0.16			
BSI-18	0.29			

Note. Standardized regression coefficients are presented. *p* is significance level. CI are confidence intervals.

Hypothesis 4: Perfectionism and OCD vs. OCPD

Hypothesis 4 predicted that trait perfectionism and perfectionistic self-presentation would be more strongly correlated with symptoms of obsessive-compulsive personality disorder (OCPD) than symptoms of obsessive-compulsive disorder (OCD). This hypothesis was not supported in the current study, though the results clearly established links between perfectionism and symptoms of both OCD and OCPD in this sample. Table 6 below reports the correlations among perfectionism facets and symptoms of OCD and OCPD, and significant difference statistics for each set of correlations. The correlation between total Florida Obsessive-Compulsive Inventory scores and SCID-II Obsessive-Compulsive Personality Disorder Subscale scores was small ($r = .22$, $p = .045$, one-tailed).

Table 6

Bivariate Correlations Among Perfectionism Facets and OCD vs. OCPD, and Significant Difference Statistics

	FOCI Total	SCID-II OCPD Subscale	Test of Significant Difference
MPS – Self-Oriented Perfectionism	.31**	.20^	$z = 0.69$, $p = .24$
MPS – Other-Oriented Perfectionism	.11	.13	$z = -0.12$, $p = .45$
MPS – Socially Prescribed Perfectionism	.26*	.25*	$z = 0.06$, $p = .48$
PSPS – Non-Disclosure of Imperfections	.39**	.41**	$z = -0.14$, $p = .45$
PSPS – Non-Display of Imperfections	.39**	.38**	$z = 0.07$, $p = .47$
PSPS – Perfectionistic Self-Promotion	.36**	.35**	$z = 0.07$, $p = .47$

Note: N = 59 as a result of missing data. OCD = obsessive-compulsive disorder; OCPD = obsessive-compulsive personality disorder; FOCI = Florida Obsessive-Compulsive Inventory; SCID-II OCPD = SCID-II Obsessive-Compulsive Personality Disorder Subscale Total.
*$p < .05$, ** $p < .01$, ^$p = .064$. All p values are one-tailed.

There were generally significant correlations between perfectionism facets and symptoms of both OCD and OCPD, with medium ($.31 \leq r \leq .41$, $p < .01$) and small ($.25 \leq r \leq .26$, $p < .05$) effects. Exceptions include the small correlation between self-oriented perfectionism and OCPD symptoms, which only approached significance ($r = .20$, $p = .064$), and the non-significant correlations between other-oriented perfectionism and symptoms of both OCPD and OCD. Unexpectedly, for each perfectionism facet and its correlations with OCPD and OCD symptoms, there were no statistically significant differences between the correlations.

Hypothesis 5: Perfectionism and DAS-Defeatist Beliefs

Hypothesis 5 predicted that socially prescribed perfectionism and perfectionistic self-presentation would be highly correlated with DAS-defeatist beliefs. This hypothesis was supported by the study results. Table 7 below reports the correlations among DAS-defeatist beliefs and both trait perfectionism and perfectionistic self-presentation. All correlations were significant and large ($.60 \leq r \leq .73$, $p < .01$).

Table 7

Bivariate Correlations Among Perfectionism and DAS-Defeatist Beliefs

	DAS-Defeatist Beliefs
MPS – Socially Prescribed Perfectionism	.73**
MPS – Self-Oriented Perfectionism	.66**
MPS – Other-Oriented Perfectionism	.67**
PSPS – Non-Disclosure of Imperfections	.67**
PSPS – Non-Display of Imperfections	.60**
PSPS – Perfectionistic Self-Promotion	.70**

Note. N = 61.
**$p < .01$, one-tailed.

As described earlier, existing studies of DAS-defeatist beliefs have not previously acknowledged the conceptual overlap with interpersonal facets of perfectionism, or investigated defeatist beliefs alongside perfectionism to determine the distinction between the two constructs and any associated explanatory power. Examination of the DAS-defeatist beliefs subscale, the Multidimensional Perfectionism Scale, and the Perfectionistic Self-Presentation Scale confirmed that none of the items are repeated on any of the scales. However, perfectionistic themes are clearly evident in each of the DAS-defeatist beliefs subscale items. Examples of DAS-defeatist beliefs include, "People will probably think less of me if I make a mistake", and "If I fail partly, it is as bad as being a complete failure" (see Grant & Beck, 2009a, for the complete list of DAS-defeatist belief subscale items). On the Multidimensional Perfectionism Scale, similar items include, "One of my goals is to be perfect in everything I do", and "It is very important that I am perfect in everything I attempt" (see Hewitt & Flett, 1991b, for sample items included in the Multidimensional Perfectionism Scale).

Given the strong correlations between DAS-defeatist beliefs and interpersonal facets of perfectionism obtained in this study, and previous research suggesting that DAS-defeatist beliefs are associated with worse outcomes in persons with psychotic illness (see, for example, Grant and Beck, 2009a, Perivoliotis et al., 2009), multiple regression was used to assess whether interpersonal facets of perfectionism significantly predicted unique variance in psychological distress variables, as indicated by shame, social anxiety, and the BSI-18, over and above DAS-defeatist beliefs. In a multiple regression model with socially prescribed perfectionism, perfectionistic self-presentation facets, and DAS-defeatist beliefs as predictors, only non-display of imperfection significantly predicted shame ($\beta = 1.01$, $p = .04$), accounting for 24.14% of the

variance [$F(5, 53) = 3.37$, $p = .010$] in this outcome variable. DAS-defeatist beliefs did not

significantly predict shame even when included as the sole predictor in a separate regression

model. The 21.49% increase in r^2 (Δr^2) across these two models was statistically significant

[$F(4, 53) = 3.75$, $p = .009$].

In a regression model testing DAS-defeatist beliefs as the sole predictor of social anxiety,

DAS-defeatist beliefs significantly predicted social anxiety ($\beta = 0.49$, $p = .01$), accounting for

10.06% of the variance [$F(1, 58) = 6.49$, $p = .01$] in this outcome variable. However, in a

separate multiple regression model testing socially prescribed perfectionism, perfectionistic self-

presentation facets, and DAS-defeatist beliefs as independent predictors of social anxiety, only

non-display of imperfection was a significant predictor of social anxiety ($\beta = 1.51$, $p = .001$). In

this case, non-display of imperfection accounted for 40.52% of the variance [$F(5, 54) = 7.36$, $p <$

.001] in social anxiety. The 30.46% increase in r^2 across the two models was statistically

significant [$F(4, 54) = 6.91$, $p < .001$].

In a regression model testing DAS-defeatist beliefs as the sole predictor of BSI-18 scores,

DAS-defeatist beliefs also significantly predicted BSI-18 scores ($\beta = 0.49$, $p = .004$), accounting

for 13.53% of the variance [$F(1, 57) = 8.92$, $p = .004$] in BSI-18 scores. However, in a separate

multiple regression model testing socially prescribed perfectionism, perfectionism self-

presentation facets, and DAS-defeatist beliefs as independent predictors of BSI-18 scores, none

of the variables significantly predicted BSI-18 scores [$r^2 = .20$, $F(5, 53) = 2.72$, $p = .029$]. While

the 6.91% increase in r^2 across the two models was not significant [$F(4, 53) = 1.15$, $p = .34$], it is

notable that the apparent influence of DAS-defeatist beliefs on symptoms captured by the BSI-18

was significantly diminished when socially prescribed perfectionism and perfectionistic self-

presentation facets were taken into account. These results are discussed further in the relevant section below.

Discussion

The purpose of this dissertation study was to examine higher socially prescribed perfectionism and perfectionistic self-presentation and lower distress tolerance as psychological vulnerabilities to stronger traumatic impact and worse psychological distress in persons with psychotic illness. A related aim was to contextualize the relationships between perfectionism and psychological distress in persons with psychotic illness within the broader literatures on psychosis, trauma, and perfectionism, by examining how perfectionism relates to social anxiety, paranoia, theory of mind, shame, obsessive-compulsive disorder, obsessive-compulsive personality disorder, and defeatist beliefs. A third aim was to provide preliminary guidelines for understanding psychological factors in psychotic illness, and to provide directions for future research seeking to improve psychotherapies for psychotic illness.

Three models were proposed and fitted to the data from a sample of 61 persons diagnosed with psychotic illness. The primary model speculated psychological vulnerability comprised of stronger perfectionistic expectations and lower distress tolerance would predict worse traumatic impact of difficult life events alongside more daily stresses and more perceived stress, which would predict higher levels of psychological distress (Hypothesis 1). Secondary models were proposed, including a model wherein higher levels of socially prescribed perfectionism and perfectionistic self-presentation would predict poorer performance on theory of mind tasks, which in turn would predict higher levels of paranoia and social anxiety (Hypothesis 2). The other model proposed was one in which higher levels of socially prescribed perfectionism and

perfectionistic self-presentation would predict higher levels of shame, which in turn would predict higher levels of psychological distress (Hypothesis 3). Correlational analyses examined the extent to which perfectionism was related to characteristics of obsessive-compulsive disorder and obsessive-compulsive personality disorder (Hypothesis 4), and DAS-defeatist beliefs (Hypothesis 5).

Regrettably, all three of the proposed models poorly fit the study data, providing improper solutions or inadequate fit statistics. The relatively small sample, numbers of indicators and factors in each model, and appropriateness and reliability of some of the measurement tools (i.e., the poor reliability of the SCID-II OCPD Subscale, the marginal reliability of the Hinting Task and the List of Life Circumstances, and the possibility that the List of Life Circumstances was a poor measure of traumatic impact) undoubtedly contributed to this. It is also possible that the phenomena of interest in this study are best examined qualitatively, given the complexity of the psychological constructs included and the artifice involved in psychological measurement and statistical analysis. Nonetheless, interesting and unique information emerged from the correlational analyses in this study, discussed in depth below. Clinical implications are proposed where relevant, which also serves to contextualize the study results within the broader psychotherapy literature.

Psychological Vulnerability to Traumatic Impact and Psychological Distress

The primary model proposed in Hypothesis 1 produced an improper solution and poor fit statistics. It is possible that traumatic impact was relatively poorly assessed in the study. There was a weaker relationship between experience of traumatic life events and each of perceived stress and daily hassles, relative to a strong relationship between daily hassles and perceived

stress. Experience of traumatic life circumstances was also unexpectedly not associated with any of the perfectionism variables, and was significantly correlated with more distress tolerance. In contrast, as predicted, more daily hassles and perceived stress were generally significantly associated with higher levels of the interpersonal facets of perfectionism and lower distress tolerance. The obtained associations with perfectionistic self-presentation and both daily hassles and perceived stress are particularly worth noting, given the relative paucity of research on perfectionism and stress. Finally, as predicted, more daily hassles and perceived stress were significantly associated with psychological distress, whereas unexpectedly there were no significant correlations between experience of traumatic life events and psychological distress.

Taken together, it is possible that the experience of traumatic events is distinct from perceived stress and daily hassles, and should not have been included as part of the "Traumatic Impact" latent construct. A different measure may have better captured the impact of repeated or multiple experiences of trauma, rather than a measure assessing the total number of traumatic events experienced. It is also possible that the results obtained are in fact a positive outcome. The significant relationship between traumatic life circumstances and stronger distress tolerance suggests that perhaps experience of a larger number of traumatic events may confer a sort of emotional resilience or stamina for coping over time, rather than worsening the experience of subsequent traumatic events.

Allen (2005) and Herman (2015) describe how the impact of trauma can be mitigated by various factors, including the presence of strong social supports, personality, age at the time of the traumatic event, the personal significance of the event, cultural and familial beliefs, and individual resilience. It is possible that among the study participants, significant heterogeneity in

individual coping capacities, personal resources, and resilience account for some of the discrepancies in predicted outcomes described above. The roles of resilience, coping capacity, and personal resources may be especially relevant given 68.9% of the sample endorsed experience of at least one type of abuse in their lifetime. The fact that so many participants experienced abuse might lead one to expect more consistency in the study results, which would have implied that the experience of abuse is almost inevitably followed by poor outcomes.

However, the significant correlation between traumatic events and stronger distress tolerance, and the weak correlations between traumatic events and both perceived stress and daily hassles, suggest that previous experiences of trauma may have less bearing on subsequent ability to handle stress and experience of psychological distress than one may have originally thought. Perhaps in persons with psychotic illness, the provision of strong social supports and the facilitation of personal coping capacities mitigate the impact of trauma as Allen (2005) and Herman (2015) describe. This may be especially important for persons with psychotic illness, which is a population already known for its heterogeneity but rarely acknowledged for its strengths. Persons with psychotic illness are often dismissed as incapable and beyond rehabilitation, as evidenced by the history of institutionalization in the mental healthcare system worldwide (see Alanen, de Chávez, Silver, & Martindale, 2009). The results obtained here suggest it might be worthwhile investigating whether personal resilience and coping capacities offset the impact of trauma differentially among individuals, and whether interventions aimed at developing these personal resources reduce the impact of trauma for at least some people.

Regarding the results of correlational analyses, as predicted, higher levels of the interpersonal facets of perfectionism were significantly associated with lower distress tolerance,

and both higher perfectionism and lower distress tolerance were associated with more psychological distress (as measured by shame, paranoid thoughts, social anxiety, and the BSI-18), which support the notion of a psychological vulnerability to worse psychological distress in persons with psychotic illness vis-à-vis interpersonal style and poorer emotional resilience.

Specific clinical implications and interventions follow from the correlational data in Hypothesis 1. Regarding clinical formulation, the higher levels of socially prescribed perfectionism and perfectionistic self-presentation suggest that at least some persons with psychotic illness may have experienced high levels of criticism and harshness, intolerance and/or punishment of mistakes and failure, and explicit high standards from a primary caregiver(s) in childhood and/or adolescence, which is consistent with some literature on expressed emotion in the development of schizophrenia (e.g., Bateson et al., 1956). Strong criticism and harshness tend to instill intense feelings of fear and activate the biological threat-based system, known as the fight-flight-freeze system, and signal the need for soothing and comfort (Gilbert, 2009, 2010). However, criticism and harshness from primary caregivers interfere with the development of a secure attachment with primary caregivers, and thus preclude the provision of soothing and comfort in moments of intense need (Allen, 2005). Rather than being the source of comfort, caregivers become sources of fear. In addition, young children generally lack the cognitive sophistication to contextualize their parents' reactions and tend to perceive harshness and criticism as rejection and loss of love, which may contribute to deep-seated feelings of unworthiness over time (Allen, 2005; Hewitt et al., 2017). These ideas are consistent with literature demonstrating the link between childhood trauma and subsequent psychosis discussed

earlier in this dissertation, and may expand clinicians' understanding of exactly how trauma affects those who go on to develop psychotic illness.

At the same time that one is experiencing intense distress and fear of caregivers, lack of comfort and soothing robs one of opportunities to learn to identify one's emotions and self-soothe, as these strategies are usually taught implicitly and explicitly by primary caregivers and internalized over time, becoming emotional and behavioral self-regulation strategies (Allen, 2005). Thus, emotional distress itself becomes something to be feared, as one views distress as insurmountable and oneself as incapable of coping with it, resulting in lower distress tolerance. Over time, fear of primary caregivers' criticism and harshness may generalize to fear of any persons' criticism and harshness, and this chronic intense fear contributes to a generally and persistent over-active biological threat-based system manifested in perfectionistic anxiety, particularly socially prescribed perfectionism and perfectionistic self-presentation. Difficult events are experienced as more stressful (i.e., perceived stress) but one is unable to cope and likely fears reaching out to others, for fear of judgement or rejection or punishment, and thus daily stresses may have greater impact vis-à-vis even more psychological distress. There may be high levels of shame, social anxiety, and even paranoid ideation with this self-awareness, particularly given the feelings of unworthiness that may have been instilled earlier in life and reinforced with each subsequent encounter with harshness or unmanageable experience of difficulty.

This understanding of the development of perfectionism and lower distress tolerance in persons with psychotic illness is consistent with biological and evolutionary theory (Gilbert, 2009, 2010), trauma theory (Allen, 2005), attachment theory (Goldberg, 2000), perfectionism

theory (Hewitt et al., 2017), and the biosocial theory (Linehan, 1993), which discuss the development of emotion dysregulation, low distress tolerance, anxiety and shame-based disorders, as a result of trauma and disrupted attachment experiences. The proposed formulation also aligns with Ryan and Deci's (2000) self-determination theory, which discusses how psychological distress and problems with intrinsic motivation arise from unmet needs for competence, autonomy, and relatedness, as behaviors become driven by the need to connect with others and minimize the possibility of rejection or criticism, rather than one's own values or goals. Perfectionistic behaviors can be thought of as externally-driven, whereby one may make decisions about one's behavior based on fear of others' reactions, rather than feeling confident that others will accept and support one irrespective of their agreement with one's choices.

The proposed formulation is also consistent with the idea that experiences of intense distress over time, or repeated rejection, failure, or loss in an area of personal significance, may result in ego-preserving psychotic symptoms in vulnerable persons (Longden et al., 2012; Romme & Escher, 2012), particularly if these persons do not have alternatives for coping with difficult and vulnerable emotions in the face of challenging circumstances. Johnstone argued that psychotic symptoms, and voice hearing in particular, "are a sign of unresolved emotional trauma, serving as a defence *[sic]* against unbearable feelings and memories, while at the same time drawing attention to the need to resolve them" (2012, p. 33; see also Longden et al., 2012). Healey (2016), a man living with symptoms of psychotic illness and an advocate, teacher, consultant, and provider of peer support, described the development of psychosis as a "wormhole", a parallel process to Levine's (2015) conceptualization of traumatic stress whereby intense, increasing fear that occurs in response to an escalating sense of personal threat activates

the biological threat-based system and leads one from a space of alertness and arrest, to orientation (toward the threatening stimulus) and assessment, to approach and avoidance, to flight or flight, and eventually freeze and "fold" (i.e., collapse) responses. In Healey's (2016) description, the development of psychosis is progressive as a person falls further down the wormhole, and folding can be understood as a person's complete withdrawal, disconnection, and isolation from the world, often marked by difficulties communicating and more intense psychotic phenomena, in an attempt to protect oneself and cope in the absence of alternatives. The process may be repeated and reinforced with subsequent experiences of trauma. These ideas are consistent with Judith Herman's (2015) view of trauma stemming from disempowerment and disconnection, and the perfectionism social disconnection model (Chen et al., 2015; Chen et al., 2012; Sherry et al., 2008) described earlier, particular if one considers experiences of significant rejection, loss, or failure, intense criticism and harshness, and other "little t" trauma experiences as stimuli for the descent down the wormhole.

While the proposed formulation is person-centered, the results of the study may help to further understanding of psychotic symptoms as outlined in the DSM-5 by the American Psychiatric Association (2013). The DSM-5 outlines five types of psychotic symptoms, described earlier in this paper: delusions, hallucinations, disorganized thinking, disorganized or abnormal motor behavior, and negative symptoms. Delusional and hallucinatory content can almost always be traced back to previous, usually traumatic, life experiences. For example, in the author's clinical practice, one woman diagnosed with psychotic illness described a strong need for control and safety, and fixed beliefs that reflected how out of control she felt. For instance, she felt certain that there were cameras in her apartment. In exploring this woman's

past, strong themes of helplessness and powerlessness were evident in her life circumstances at the time of her first psychotic break. As another example, voice-hearers are often able to identify the owners of their voices, and the messages reflected are often poignant memories from difficult past experiences. For example, someone who hears voices about others gossiping about him might have been told by a parent that if he does not act a certain way, people will talk about him.

Disorganized thoughts can be considered a reflection of the loss of one's sense of self that often occurs in the context of trauma. It is undoubtedly difficult to express oneself clearly if one is not sure what one is feeling or thinking. Additionally, one impact of the biological threat-based flight-fight-freeze system is reduced capacity to think, reason, make decisions, concentrate, and remember (see Allen, 2005). The biological threat-based system is designed to be life-saving. In moments of intense threat or danger, energy is diverted away from complex executive functions and directed toward primary biological systems. Negative symptoms and disorganized behavior, particularly catatonia and mutism, can also be thought of as reflections of the biological threat-based system, namely the freeze response.

Thus, psychotic symptoms are not aberrant nor do they represent a break from reality, and perfectionistic persons with psychotic illness do not have barren emotional experiences. Rather, psychotic symptoms and perfectionistic behaviors are understandable responses to intense threat, overwhelming, under-regulated emotion, and an all-too-close connection to reality that require soothing and comfort, alongside lack of alternative coping responses and reduced opportunities for needed connection and support. Psychotic symptoms, rather than problems to be solved or phenomena to be controlled, are emotion regulation strategies, and perfectionistic behaviors are attempts to preserve needed social connections. However, as with some secondary

emotion regulation strategies, while effective for survival in the short-term, they often create long-term problems, especially once they become over-generalized and over-used, occurring in situations where threat may not be or is no longer present.

Given this formulation, several therapeutic approaches and tools may be helpful in assisting perfectionistic and distress intolerant persons experiencing psychotic symptoms with leading more meaningful and satisfying lives. Foremost, given the likelihood of disrupted or poor attachment experiences, difficulty tolerating vulnerable emotions, lack of effective emotion regulation strategies, and the traumatic impact of challenging life experiences, the therapeutic alliance remains the most critical part of any intervention, with its opportunity to provide connection, safety, acceptance, corrective relational and emotional experiences, and emotion coaching. The presence of a trusted and accepting other is itself emotionally regulating (Allen, 2005; Germer & Neff, 2014; Goldberg, 2000), which can serve to decrease psychological distress. Additionally, therapists act as emotion coaches in their facilitation of awareness, differentiation, and identification of primary emotions, and their ability to tolerate and accept clients' distress and assist with emotion regulation (Briere, 2012; Briere & Scott, 2015; Courtois, 2008; Elliott, Watson, Goldman, & Greenberg, 2004; Pearlman & Courtois, 2005). Hewitt and colleagues (2017) underscored the importance of a strong therapeutic relationship for creating safety for perfectionistic individuals in the therapy context. Therapist self-disclosure and willingness to be vulnerable in the therapeutic setting, validation, normalization, and other acceptance-based strategies, alongside communication of an accurate and compassionate understanding of how perfectionistic qualities develop and the function they serve, may create a space of safety and a sense of connectedness for persons with psychotic illness who experience

perfectionistic anxiety, decreasing shame, enabling them to feel more comfortable acknowledging and discussing their difficulties, and facilitating help-seeking behavior.

Blatt and Zuroff (2002) described how high levels of perfectionism and shame may impact the therapeutic setting by contributing to high levels of non-disclosure and decreased help-seeking behavior, which limit therapeutic benefits and progress. These effects maybe compounded in psychotic illness, where affected individuals are already difficult to engage. Motivational interviewing (Miller & Rollnick, 2002, 2013; Westra, Aviram, and Doell, 2011) and the commitment strategies used in dialectical behavior therapy (Linehan, 1993) may facilitate willingness and strengthen commitment to engage in the therapy process, particularly where behavioral exposures are required to challenge perfectionistic beliefs and modify associated behaviors. Hewitt and colleagues (2017) discuss the importance of honoring perfectionistic individuals' reluctance to relinquish valued ideals in order to gain trust and build the alliance in the first phase of treatment, as affected persons often have an ambivalent relationship with their perfectionism. Perfectionistic persons often have a difficult time believing that they will continue to be "good" students, employees, housekeepers, partners, siblings, et cetera, or that others will continue to value them, if they were to give up their perfectionistic ways; yet their efforts are often exhausting and maintain distress. With the provision of a strong "secure base", a trusting relationship with a therapist, to lean on in the face of fear and uncertainty about new behaviors and the freedom to decide for oneself whether it is worthwhile to try new ways of being and interacting with the world, perfectionistic individuals may find the courage to challenge their beliefs and opportunities to reduce their distress.

The above discussion is informed by the attachment, trauma, perfectionism, and

psychotherapy literatures, and is consistent with literature supporting the importance of a strong

relationship between therapists and persons living with psychotic illness. Garfield and Mackler

(2009) reviewed empirical data and first-person accounts and argued that the therapeutic alliance

is the mechanism of change in recovery from psychotic illness, challenging the prevailing views

of pharmacologic interventions as the key agents of change. Berry and Bucci (2016) similarly

argued that the therapeutic relationship is critical for addressing emotion dysregulation that

results from problematic attachment experiences with primary caregivers (see also Longden et

al., 2012). Leamy, Bird, Le Boutillier, Williams, and Slade (2011) conducted a systematic

review in order to identify key factors for recovery from mental illness: connectedness, hope,

identity, meaning, and empowerment, which are often derived from the therapeutic alliance and

the therapist's stance in therapy. The provision or absence of these factors, and whether there is

a strong, positive relationship with the therapist, often determine whether cognitive behavior

therapy for psychosis is tolerated by and leads to desired outcomes in clients (Brabban, Byrne,

Longden, & Morrison, 2017). Dolly Sen (2017) described her experiences with multiple

therapists and differing therapeutic approaches and, ultimately, a trauma-informed approach that

provided safety, acceptance, non-judgement, and space to share her feelings and experiences

were what facilitated her recovery from psychosis, thus reinforcing the critical importance and

function of the therapeutic relationship described above.

If psychotic symptoms represent unprocessed trauma-related emotion, they also signal a

need to make sense of traumatic experiences and to develop skills for future coping. Trauma-

focused relational psychotherapy (Allen, 2005; Briere, 2012; Briere & Scott, 2015; Courtois,

2008; Germer & Neff, 2014; Pearlman & Courtois, 2005), dialectical behavior therapy (Linehan,

1993, 2015a, 2015b), compassion-focused therapy (Gilbert, 2009, 2010; see also Germer & Neff, 2014 and, for application to psychotic experiences specifically, Wright et al., 2014), and constructivist (Mahoney, 1991, 2003; Neimeyer, 2009) and narrative approaches (Angus & Greenberg, 2011; Geekie, Randal, Lampshire, & Read, 2012; Geekie & Read, 2009; White, 2007; White & Epston, 1990), each with the therapeutic alliance at its center, are theoretically-consistent approaches that all provide possibilities for helping persons with psychotic illness develop self-understanding by exploring the traumatic impact of key experiences on emotional, physiological, cognitive, and social functioning and ways of viewing oneself, others, and the world. Such validation and normalization of "symptoms" as ego-protective and sometimes life-saving attempts to cope may consequently serve to contextualize psychotic symptomatology, thus decreasing shame and increasing self-worth which is often damaged by criticism, harshness, and other experiences with strong traumatic impact. Thus, while there is no possibility of going back and changing past experiences, there are multiple possibilities for changing one's relationship with key experiences. This shift in perspective is consistent with data from the current dissertation study suggesting perceived stress is associated with psychological distress, whereas experience of traumatic experiences in itself is not.

In connecting life experiences to one another and to current ways of being, these psychotherapeutic approaches may facilitate meaning making, self-coherence, self-acceptance, self-understanding, and self-compassion, and decrease self-judgement, shame, self-stigma, and distress associated with psychiatric symptoms. The opportunity to author one's own story and make sense of one's experiences, as opposed to having healthcare professionals, family members, or society interpret one's life experiences, is in itself empowering, thus countering the

disempowering and silencing effects of trauma. These changes, in the context of a strong therapeutic relationship, may have soothing effects on the biological threat-based system, thereby reducing the need for psychotic defenses. In response to Bassman's call for alternatives to the "one-size-fits-all-drugs-are-the-answer medical model" (2012, p.273) cited earlier in this dissertation, these psychotherapeutic approaches may thus provide more humanistic opportunities for making sense of people's life experiences and so-called psychiatric "symptoms".

Trauma-focused relational psychotherapy, dialectical behavior therapy, and compassion-focused therapy also directly address trauma-related emotion regulation and distress tolerance deficits via explicit skill-building. In particular, dialectical behavior therapy can be used to assist clients with developing mindful awareness and identification of emotion, along with distress tolerance and emotion regulation skills. Compassion-focused therapy involves exercises that focus on the development of self-soothing skills to reduce intense emotions associated with an over-active threat-based system, including perfectionistic anxiety and shame. In trauma-focused relational psychotherapy, the therapist is in essence an emotion coach who facilitates access to vulnerable emotions and assists with emotion identification and regulation via modelling and explicit instruction. Improving emotion regulation and distress tolerance skills may act to directly reduce psychological distress in persons with psychotic illness, as affected individuals grow more confident in their ability to cope and thus difficulty and distress cease to be insurmountable.

A Closer Look at Perfectionism and Shame

The relationships among perfectionism facets and psychological distress were explored in

more depth in Hypothesis 3. Specifically, a mediation model was proposed wherein higher levels of socially prescribed perfectionism and perfectionistic self-presentation would predict higher levels of shame, which in turn would predict higher levels of psychological distress. The implications of the predicted significant correlational relationships between higher levels of the interpersonal perfectionism facets and higher levels of psychological distress, including higher shame, were discussed in the above section on Hypothesis 1. However, the theoretical implications of the poor fit statistics produced by this model warrant further discussion, beyond the statistical implications and limitations already mentioned earlier.

This study used the behavioral and characterological shame subscales of the Experience of Shame Scale (Andrews et al., 2002), which assess shame related to personal habits, one's manner with others, the sort of person one is, personal ability, doing something wrong, saying something stupid, and failure in competitive situations, given their conceptual relevance to trait perfectionism, perfectionistic self-presentation, and social anxiety. The Experience of Shame Scale was also used in another study by Hassan (2011), wherein shame failed to mediate the relationship between interpersonal perfectionism facets and indices of psychological distress. Keen, George, Scragg, and Peters (2017) found that the relationship between shame and levels of depressive symptomatology varied depending on which measure of shame was used. Their study included measures of internal, or trait-based shame, which refers to negative thoughts and feelings one has about one's own attributes, personality, and behaviors; and external shame, which refers to how one thinks others view oneself, with negative evaluations of aspects of oneself one believes others would reject or attack if these aspects were known.

Wood and Irons (2016) found that external shame was related to depression, personal

recovery, and positive symptoms in persons with psychotic illness, similar to the detrimental effects of self-stigma. Furthermore, external shame is highly consistent with perfectionistic self-presentation in its fear and expectation of others' judgement and rejection should one be found out as inadequate or having failed to meet standards in one or more areas. Thus, it is possible that a replication investigation of the proposed mediation model using a measure of external shame, such as the Others as Shamer Scale (Goss, Gilbert, & Allan, 1994) instead of the Experience of Shame Scale, may more fully illuminate the role shame plays in the relationship between perfectionism and psychological distress.

While the clinical implications of the high levels of the interpersonal facets of perfectionism alongside high levels of psychological distress, including shame, were discussed in the earlier section on Hypothesis 1, a few points warrant emphasis. As noted above, experiences with excessively critical and harsh caregivers cause psychological distress, instill a strong sense of shame and unworthiness in the experiencer, and preclude opportunities to learn how to regulate emotional distress. This results in poor distress tolerance and compensatory behaviors vis-à-vis perfectionism. Feeling unable to cope with difficult situations and vulnerable emotions often worsens shame. In general, trauma is associated with high levels of shame, as individuals are explicitly blamed for their abuse or difficulties, or they perceive they are to blame in the absence of alternative explanations (Allen, 2005). As individuals experience subsequent rejections, loss, failure, or mistreatment, their feelings of unworthiness are confirmed.

Thus, it is critically important that therapists focus on creating a sense of safety in the therapeutic setting, conveying acceptance, compassionate understanding, and validation in order to decrease shame. Compassion-focused therapy has demonstrated efficacy in reducing shame

(e.g., Gilbert & Proctor, 2006) and the validation strategies used in dialectical behavior therapy (Linehan, 1993) are intended to counter the invalidation individuals have experienced and internalized over time; thus, both of these approaches may be especially relevant for perfectionistic persons with psychotic illness. Emotion theory (e.g., Greenberg, 2004) may be used to help individuals understand their secondary emotion reactions, including shame, that result when primary emotions are punished, dismissed, minimized, or otherwise invalidated. Therapists may facilitate access to shameful emotional experiences, and facilitate identification and validation of primary emotional needs, thus providing corrective emotional and relational (i.e., attachment) experiences and thereby decreasing shame (Elliott et al., 2004).

Perfectionism, Theory of Mind, Paranoid Ideation, and Social Anxiety

Hypothesis 2 proposed a model wherein higher levels of socially prescribed perfectionism and perfectionistic self-presentation would predict poorer performance on theory of mind tasks, which in turn would predict higher levels of paranoia and social anxiety. While the proposed model was under-identified and model fit statistics were generally poor, correlational predictions between higher levels of perfectionism facets and higher levels of social anxiety, higher levels of paranoid ideation, and poor theory of mind task performance were generally supported. Thus, as predicted, perfectionism overlapped with the conceptually related theory of mind, social anxiety, and paranoid ideation. Unexpectedly, performance on theory of mind tasks was not associated with either paranoid ideation or social anxiety, which is consistent with the equivocal data in the literature summarized earlier.

While the model proposed here produced an improper solution, the correlational data suggest that interpersonally-based perfectionism warrants attention in empirical investigations of

persons with psychotic illness. Specifically, the relationship of interpersonal perfectionism to social anxiety and paranoid ideation may be more critical than the relationship between theory of mind and each of social anxiety and paranoid ideation, and may provide insight into the equivocal relationships among theory of mind, paranoia, and social anxiety. The results of this study also suggest that perfectionism is in fact a relevant construct in the phenomenology of persons with psychotic illness, warranting clinical attention given the overlap with social anxiety and paranoid ideation and their conferred distress. The therapeutic alliance and specific therapeutic approaches that may reduce perfectionism and psychological distress, including social anxiety and paranoid ideation, were discussed earlier in the section on Hypothesis 1.

One additional clinical implication is the relevance of mentalizing to persons with psychotic illness given the significant relationship between high levels of perfectionism and poor performance on theory of mind tasks, and the conceptual overlap among perfectionism, paranoia, and social anxiety. Allen (2013) described mentalizing as the ability to attend to one's own and others' mental states, including specific thoughts, feelings, motivations, and desires. This capacity develops within the parent-child relationship, via implicit and explicit emotion identification and emotion coaching, and parental attunement and responsivity. Furthermore, mentalizing capacities are linked with attachment style, with securely attached children being better able to appreciate the thoughts and feelings of others (Allen, 2013). Awareness of one's own thoughts and feelings and their impact on one's behaviors becomes a scaffold for understanding and more accurately inferring the mental states of others. Thus, mentalizing and theory of mind are conceptually related. Given that social anxiety, paranoid ideation, and perfectionism involve anticipation of others' rejection or judgement or harm, which is a type of

inference about others' mental state, mentalizing, theory of mind, social anxiety, paranoid ideation, and perfectionism are conceptually related.

As with mentalizing and perfectionism, it is possible that impaired theory of mind, paranoid ideation, and social anxiety may result from poor attachment relationships. Allen (2013) posits that mentalizing failure occurs when caregivers are psychologically unavailable to a child, particularly with sexual, physical, and emotional abuse, as abuse is incompatible with being attuned to the child's mental state. Awareness of the child's experience would cause the caregiver to halt their traumatizing behavior. These ideas lend further support to the clinical formulation proposed in discussion of Hypothesis 1. Traumatizing experiences, including expressed emotion vis-à-vis criticism, harshness, and judgement, damage the attachment relationship and lead to impaired mentalizing capacity, theory of mind, and perfectionism. Additionally, these experiences contribute to an overactive threat-based system, which increases anxiety and narrows cognitive focus over time, thus further impairing theory of mind and mentalizing abilities and strengthening the need for defensive perfectionistic behaviors. One might argue that social anxiety and, in more extreme cases, paranoid ideation, might similarly result from early experiences that teach one that others are judgmental and even unsafe.

Consistent with the clinical suggestions above, Allen (2013) discussed the therapeutic relationship as paramount to providing corrective relational experiences and improving mentalizing capacity. As a supplement to the therapeutic alliance, mindfulness strategies may be used to facilitate awareness of one's own and others' mental states (Allen, 2013) and, as mentalizing ability grows, paranoia, social anxiety, and perfectionism may diminish, and performance on theory of mind tasks may improve.

Perfectionism and OCD vs. OCPD

Hypothesis 4 was that trait perfectionism and perfectionistic self-presentation would be more strongly correlated with symptoms of OCPD than symptoms of OCD. Unexpectedly, data analyses indicated that this hypothesis was not supported. Instead, there were generally significant correlations between perfectionism facets and symptoms of both OCD and OCPD. It is possible that at least one of the measures of OCD and OCPD was not sensitive enough to its respective symptomatology in this study sample to allow adequate differentiation among the correlational relationships with perfectionism facets. In particular, the SCID-II OCPD Subscale is intended to be over-inclusive, and may be especially inadequate in the absence of a clinical interview. Cronbach's alpha for the SCID-II OCPD Subscale in this study was also poor at only .55. As noted earlier, the sample also may not have been large enough to allow detection of significant distinctions, particularly if the differences in the relationships between perfectionism and each of OCPD and OCD are of medium or small effect magnitude. It is also possible that in persons with psychotic illness, in fact both OCD and OCPD are highly correlated with perfectionism facets, in contrast to other populations where perfectionism is more closely related to OCDP than OCD (e.g., Halmi et al., 2005). Additional research is required to clarify which of these possibilities is most likely.

The significant correlations found between perfectionism facets and OCPD raise an interesting issue, though, as OCPD is not typically acknowledged in persons with psychosis. Instead, cognitive rigidity, unrealistic concerns, and related behaviors are generally viewed as OCD-related in nature, particularly given the sometimes delusional quality and intensity of some of these thoughts and behaviors. Perhaps OCPD and perfectionism account for some of the

cognitive rigidity, unrealistic concerns, and associated behaviors observed in persons with

psychotic illness, with thoughts and behaviors that are viewed as more OCD-related actually

representing strategies for coping with distress, staying safe, and reducing the possibility of

social judgement, rejection, and loss of love and support. This possibility is consistent with the

finding that obsessive-compulsive symptoms were associated with psychotic symptomatology,

whereas categorical OCD classification was not (Cunill et al., 2009). Additional research using a

more sensitive measure of OCPD against measures of OCD and perfectionism in persons with

psychotic illness is needed to verify these possibilities, which may have not only theoretical

significance, but differential clinical implications as well. Investigation of perfectionism

cognitions (for example, "I should be doing more"; "No matter how much I do, it's never

enough"; and "My work should be flawless") using the Perfectionism Cognitions Inventory

(Flett, Hewitt, Whelan, & Martin, 2007) alongside measures of OCPD and OCD

symptomatology may also shed light on this interesting issue, enabling qualification of some of

the phenomenological concerns and cognitive rigidity that persons with psychotic illness

experience.

Perfectionism and DAS-Defeatist Beliefs

Hypothesis 5 was that socially prescribed perfectionism and perfectionistic self-

presentation would be highly correlated with DAS-defeatist beliefs. Analyses supported this

hypothesis. These findings were not surprising given past links established between

dysfunctional attitudes and trait perfectionism, but it is useful to illustrate these associations

given the lack of emphasis on perfectionism in the existing literature on defeatist beliefs.

Additionally, when multiple regression analyses were conducted to assess the unique

contributions of DAS-defeatist beliefs and interpersonal perfectionism facets to the variance in shame, social anxiety, and BSI-18 scores, noteworthy results emerged. Only non-display of imperfection significantly predicted shame, whereas DAS-defeatist beliefs did not predict shame, either as a sole predictor or as part of a multiple predictor model. While DAS-defeatist beliefs significantly predicted social anxiety in a sole predictor model, only non-display of imperfection significantly predicted social anxiety when interpersonal perfectionism facets and DAS-defeatist beliefs were included as predictors in a multiple predictor model. Similarly, while DAS-defeatist beliefs significantly predicted BSI-18 scores in a sole predictor model, there were no significant predictors of BSI-18 scores when interpersonal perfectionism facets and DAS-defeatist beliefs were included as predictors in a multiple predictor model. In essence, the addition of interpersonal perfectionism facets to explanatory multiple regression models seemed to eliminate the apparent influence of DAS-defeatist beliefs on indices of psychological distress.

As described earlier, existing studies of DAS-defeatist beliefs have not previously acknowledged the conceptual overlap with interpersonal facets of perfectionism, or investigated DAS-defeatist beliefs alongside perfectionism to determine the distinction between the two constructs and any associated explanatory power. The results obtained here call into question, or at least qualify, the results of past studies of DAS-defeatist beliefs. In the current study, it was not simply the case that interpersonal perfectionism facets accounted for unique variance in psychological distress variables, over and above DAS-defeatist beliefs. Instead, when interpersonal perfectionism facets were included alongside DAS-defeatist beliefs as predictors of psychological distress variables, the apparent influence of DAS-defeatist beliefs diminished completely.

Thus, it is imperative that past studies of DAS-defeatist beliefs be replicated using measures of perfectionism to determine whether DAS-defeatist beliefs are a unique construct or in fact subsumed within or redundant with interpersonal perfectionism facets, particularly with respect to explanatory or predictive power. It seems likely that DAS-defeatist beliefs are actually reflective of problematic attitudes about needing to be perfect, which would challenge the discriminant validity of DAS-defeatist beliefs. If this is the case, it is possible that interpersonal perfectionism facets, and particularly non-display of imperfection, are more powerful and inclusive explanatory constructs, with broader conceptual and empirical value, than DAS-defeatist beliefs, given their conceptual overlap and the statistical results obtained here. At the very least, investigation of interpersonal perfectionism facets alongside DAS-defeatist beliefs in future studies is warranted, and treatment interventions are better informed if assessments go beyond defeatist attitudes to also include trait perfectionism and perfectionistic self-presentation.

In the absence of replication studies to clarify the relation between interpersonal perfectionism facets and DAS-defeatist beliefs at the present time, the clinical formulation presented earlier implies that DAS-defeatist beliefs, as with perfectionism, may develop in the context of traumatizing relationships with primary caregivers and be reinforced by subsequent experiences that "confirm" one's view of oneself as unworthy, incompetent, and a failure. As such, the clinical suggestions discussed in the section on Hypothesis 1, with the therapeutic alliance as the key mechanism of change, may reduce DAS-defeatist beliefs and associated distress.

Contributions of the Current Study

The primary value of this exploratory study lies in its conceptual contributions. This

investigation is one of the first studies to formally examine trait perfectionism and perfectionistic self-presentation in persons with psychotic illness. Conceptual relationships among perfectionism, distress tolerance, theory of mind, social anxiety, paranoid ideation, and shame are elaborated. A trauma-informed person-centered clinical formulation is presented, which may enhance understanding of the phenomenology of affected persons. Formulation-based clinical interventions are proposed, which provide psychotherapeutic alternatives for assisting perfectionistic and distress intolerant persons with psychotic illness to reduce psychological distress and shame; improve self-worth and relational capacities; improve theory of mind and mentalizing capacities and reduce social anxiety, paranoid ideation, and perfectionism; improve emotion regulation and distress tolerance skills; and make sense of key experiences in connection with current ways of being. In discussion of the above, this study connects relatively disconnected literatures on perfectionism, psychotic illness, trauma, and psychotherapy, and sheds light on potentially fruitful research avenues.

Within the context of the above, a key issue worth highlighting is the importance of socially prescribed perfectionism in the vulnerability of persons with psychotic illness, which follows directly from the proposed clinical formulation. Persons with psychotic illness are often distrustful of other people. They are aware that others tend to judge and sometimes shun them for their beliefs and behaviors. They are also aware that missteps can result in involuntary hospitalization or unwanted treatments. Additionally, they may have difficulties assessing the intentions, desires, or emotional states of other people, vis-à-vis impaired theory of mind. Beyond and in addition to the above, some persons with psychotic illness feel that others expect them to be perfect. This perception of others may be facilitated or worsened by theory of mind

deficits, whereby persons with psychotic illness who are high in socially prescribed perfectionism may be more intensely sensitive to others' perceived or actual expectations and judgment. Accordingly, perception or realization that one has fallen short of others' expectations may have much more significant negative impact by way of increased feelings of depression, anxiety, suicidal ideation, or risk of suicide (see, for example, Smith et al., 2017).

At the same time, persons with psychotic illness are caught in a bind. The very nature of psychotic symptoms generally garners judgment and prejudice based on historical societal and specific cultural norms. Some people are very uncomfortable with someone who converses openly with voices only he/she/they can hear, or who gestures emphatically in response to something only he/she/they can see. Even without outward suggestions of psychotic experiences, the words "schizophrenia" or "schizoaffective disorder" can be enough to elicit changes in peoples' attitudes. Thus, persons with psychotic illness may be saddled with awareness that they are already failing to meet expectations or standards by virtue of their psychotic experiences, irrespective of any subsequent behaviors or endeavors. They cannot win. As persons with psychotic symptoms, they feel they cannot be good enough, even if they obtain the perfect job, find the perfect partner, have the perfect home, or make a significant contribution to society. As a result, some persons may decide to stop trying, either by withdrawing from meaningful participation in society, or by suicide.

This aspect of the proposed clinical formulation is consistent with Hewitt and Flett's (1991b) view that socially prescribed perfectionism represents a form of chronic psychosocial stress and may be associated with significant levels of helplessness and ultimately hopelessness, and with Smith and colleagues' (2017) warning that socially prescribed perfectionism is

pernicious and deleterious, particularly in consideration of suicidal behaviors (see also Blatt, 1995). Clinically and societally, the impact of socially prescribed perfectionism on the experience of persons with psychotic illness is worthwhile considering and addressing, given potential associated effects on psychological well-being, quality of life, interpersonal functioning, and meaningful participation in one's community.

Study Limitations and Directions for Future Research

Regarding study limitations, the sample size and numbers of indicators per factor likely limited statistical power and contributed to the improper solutions and poor fit statistics produced by the models proposed in Hypotheses 1, 2, and 3. These results precluded post-hoc assessment of power for the models in this study. Additionally, group differences based on demographic characteristics were not assessed in any of the proposed models or hypotheses, in an effort to preserve statistical power, and may have contributed to the study results. As the participants were recruited from a tertiary care organization in Toronto, Canada, it is possible that the study results may not generalize to persons with psychotic illness from other settings. The measures assessing traumatic impact (i.e., List of Life Circumstances) and OCPD symptomatology (i.e., the SCID-II OCPD Subscale) appeared inappropriate and/or inadequate, limiting assessment of the predictions in Hypotheses 1 and 4. Finally, the cross-sectional nature of this study and the use of correlation preclude assessment of causation and confirmation of the developmental course of key personality traits, capacities, and indices of distress. Thus, any previous discussion in this dissertation that is seen as implying causality should be interpreted within the context of this significant limitation

Despite the limitations of this exploratory study, there are several possible directions for

future research. Correlational data with the relatively small sample used here suggest that further investigation of perfectionism in persons with psychotic illness is warranted, as perfectionism appears related to theory of mind, paranoia, and social anxiety in persons with psychotic illness. There may be benefit in re-examination of the proposed models and hypotheses using a larger sample, better measures of OCPD symptomatology and the impact of multiple or repeated traumatic experiences, and measures of external shame, perfectionism cognitions, and resilience, given the strong theoretical foundations for the proposed models. As described in the Method section, there was a fair amount of diversity among study participants, which is reflective of the diverse general population in Toronto, Canada. Regrettably, the smaller sample used in this study precluded adding any demographic factors to hypothesized models to evaluate associated effects on constructs and relationships of interest. Future studies may investigate demographic characteristics in relation to key constructs of interest.

Another possibility is to utilize an exploratory factor analytic approach with a new sample, in case there were errors in the theoretical rationales used to support each model used here (see Flora & Flake, 2017). As discussed, the models and hypotheses proposed in this study were based on the author's experience and review of the literature. It is possible that alternative models may be derived from other literature and shed additional light on the topics investigated here. Another possibility is to improve and extend the current study by re-examining the study data based on refined models with fewer indicators per factor in order to increase statistical power, particularly given the strength of the correlational data obtained. For example, indicators may be selected based on how closely they exemplify primary constructs of interest, while remaining indicators are removed from the original models.

Clinical trials may investigate the efficacy and effectiveness of the suggested clinical approaches for reducing psychological distress, shame, social anxiety, paranoid ideation, perfectionism, and self-stigma, and improving self-understanding, self-worth, theory of mind capacity, emotion regulation and distress tolerance skills, and interpersonal relationships and social functioning. Family interventions for at-risk persons may address the critical home environments that contribute to the development of perfectionism and vulnerability to psychosis, or reduce psychological distress and associated risk of relapse and facilitate symptom management in persons already experiencing psychotic illness; clinical trials could ascertain the efficacy and effectiveness of these interventions. This study could be extended using qualitative methods or a mixed-methods approach combining quantitative statistics with narrative exploration of affected individuals' experiences. Perfectionism may also be investigated in relation to self-efficacy and mastery, and in relation to psychache (see Holden, Mehta, Cunningham, & McLeod, 2001) and suicidality in psychotic illness. Replication of past studies of DAS-defeatist beliefs, with the addition of perfectionism measures, may clarify the distinct and overlapping conceptual and empirical value among these constructs. Finally, longitudinal research may help to determine the developmental course of perfectionism and psychotic illness. Along these lines, naturalistic study of other people in the lives of persons with psychotic illness (e.g., family members, colleagues, friends, partners, etc.) may help to clarify whether socially prescribed perfectionism is a perception or a veridical assessment of one's life space and environment, which would have differential associated treatment implications.

Conclusions

The current research consisted of an exploratory study of socially prescribed

perfectionism, perfectionistic self-presentation, and distress tolerance as psychological vulnerabilities to stronger traumatic impact and worse psychological distress in persons with psychotic illness. Correlational results point to the relevance of socially prescribed perfectionism and perfectionistic self-presentation and, when the focus is person-centered rather than variable-centered, the results are consistent with the notion that there is a discernible subset of persons with psychotic illness who are high in perfectionism, perfectionistic self-presentation, and shame, low in distress intolerance, and who have poor theory of mind, which may stem from disrupted attachment experiences and other circumstances with associated traumatic impact. The results also support conceptual overlap among perfectionism, social anxiety, and paranoid ideation in persons with psychotic illness. A trauma-informed person-centered clinical formulation is presented, which enhances understanding of the phenomenology of affected persons. This formulation helps to clarify how one's life experiences, particularly those involving loss, rejection, failure, or other types of trauma, may limit the development of a capacity to manage difficult experiences, contribute to a view of oneself as unworthy and incapable, and possibly facilitate the development of psychotic symptoms in an attempt at ego-preservation. This formulation also helps to clarify how early experiences of harshness, criticism, and judgement may sensitize one to others' judgement, resulting in heightened levels of social anxiety, shame, and paranoia, and poorer theory of mind.

Formulation-based clinical interventions are suggested, which provide psychotherapeutic alternatives for assisting perfectionistic and distress intolerant persons with psychotic illness to reduce psychological distress and shame; improve self-worth and relational capacities; improve theory of mind and mentalizing capacities and reduce social anxiety, paranoid ideation, and

perfectionism; improve emotion regulation and distress tolerance skills; and make sense of key experiences in connection with current ways of being. Such meaning-making may assist with ego-repair and assist affected individuals with self-compassion, self-understanding, and moving forward in their lives.

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