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Pepperdine University
Graduate School of Education and Psychology

WORRY AND RUMINATION: A RATIONALE FOR A
TRANSDIAGNOSTIC APPROACH TO TREATMENT

A clinical dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Psychology

by

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June, 2018

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DOCTOR OF PSYCHOLOGY

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DEDICATION

To my mother, Nadia, my father, John, my sister, Carla, my brother-in-law, OJ and my nephews, Alexander and Nicholas, for their unending love, support, and encouragement. Thank you for taking this journey with me and for always believing in me. I love you eternally.

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ABSTRACT

Worry and rumination are implicated in various disorders and are believed to contribute to the symptoms that create and maintain psychopathology. The current critical review will examine worry and rumination in the context of depression, Generalized Anxiety Disorder (GAD), Posttraumatic Stress Disorder (PTSD), Obsessive Compulsive Disorder (OCD), and Social Anxiety Disorder (SAD). The review will focus on these two types of repetitive negative thinking more specifically the (a) definition, (b) process, (c) theories, and (d) maintenance of psychopathology; as well as similarities and differences between these two processes. A second emphasis will be on the importance of cultural considerations when treating individuals with emotional disorders. A third focus of the analysis will be on the rationale, overview, and literature associated with a transdiagnostic treatment named the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP) . Finally, this review will conclude by highlighting futures research studies that can be implemented to improve upon the existing UP research.

Keywords: Worry, Rumination, Anxiety, Depression, GAD, PTSD, OCD, SAD, Transdiagnostic, Culture, Unified protocol for transdiagnostic treatment of emotional disorders.

Chapter I: Introduction

Repetitive thoughts, defined as “thinking attentively, repetitively, and/or frequently about oneself and one’s world” (Segerstrom, Stanton, Alden, & Shortridge, 2003, p. 909), are ubiquitous, inescapable, and play an important function in peoples’ day-to-day lives and consequently their emotional and physical well-being (Harvey, Watkins, Mansell, & Shafran, 2004; Segerstrom, et al., 2016; Segerstrom, Roach, Evans, Schipper, & Darville, 2010; Watkins, 2008).

Repetitive thoughts and its impact on the individual can be further defined via how they present along the dimension of valence. Valence is defined as the emotional value associated with a stimulus, event, object, or situation, i.e., content (Segerstrom et al., 2003). The value can be intrinsically attractive (positive valence) or aversive (negative valence) (Frijda, 1986). Examples of positively valenced repetitive thoughts include anticipation and reminiscing while negatively valenced repetitive thoughts include rumination, worry, and self-criticism (Segerstrom et al., 2016). The valence of repetitive thoughts is associated with concurrent affect and feelings of emotional and physical well-being (Segerstrom et al. 2003). More specifically, individuals who experience repetitive thoughts with less negative content and are more positively valenced are likely to result in increased self-report of positive affect, less anxiety, better overall mental health, and fewer negative physical symptoms than individuals reporting repetitive thoughts with greater negative content (Beck, 1967; Segerstrom et al. 2003; Taylor & Brown, 1988). Moreover, an increase in negative affect and a decrease in motivation was self-reported by study participants who experience repetitive negative valenced thoughts (Beck, 1967; Martin, Tesser, & McIntosh, 1993). This paper will closely examine two specific types of negative valenced thoughts, worry and rumination; which are thought to be present in a number of psychological disorders and can greatly impact an individual’s functioning.

Definition of Rumination

A review of the literature points to the difficulty in characterizing, measuring, and predicting the complex and multifaceted nature of the construct of rumination. One oft-cited definition was developed by Nolen-Hoeksema (1998) who defines rumination as “behaviors and thoughts that passively focus one’s attention on one’s depressive symptoms and on the implications of these symptoms” (p. 239). Another commonly found definition by Smith and Alloy (2009) proposes that rumination is a “stable, negative, broadly construed way of responding to discrepancies between current status and target status” (p. 126).

Rumination is most often measured in research and clinical practice using the Ruminative Response Scale (Topper, Emmelkamp, Watkins, & Ehring, 2014). The Ruminative Response Scale was developed by Nolen-Hoeksema and Morrow (1991) as a 22-question self-report Likert-scale questionnaire measuring how often an individual is focused on self, on symptoms, and on causes and consequences of their moods. A sample of the questionnaire can be found in Appendix A. Treynor, Gonzalez, and Nolen-Hoeksema (2003) further refined the Ruminative Response Scale by identifying a two-factor model of rumination. After identifying 12 questions within the scale as being depression related, i.e. more likely to be measures of depression than rumination, the remaining 10 questions were found to describe two aspects of rumination reflection and brooding. The reflection questions on the measure reflect a looking inward to purposefully participate in problem-solving while brooding involves passively comparing one's current situation to an unachieved ideal (Treynor et al., 2003).

Definition of Worry

Similar to rumination, worry is difficult to conceptualize, define, and assess; and there is a multitude of descriptions of worry. One common and widely proffered definition is:

A chain of thoughts and images, negatively affect-laden and relatively uncontrollable; it represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes; consequently, worry relates closely to the fear process.

(Borkovec, Robinson, Pruzinsky, & DePree, 1983, p. 10)

Another commonly found definition by Mathews (1990) proposes that worry is a cognitive process that is involved in maintaining feelings of anxiety and hypervigilance of threats or danger. Almost all definitions share the commonality of identifying worry as future oriented, and having to do with concerns anticipating and preparing for future threats while avoiding negative affect and painful images (Dar & Iqbal, 2015; Yang et al., 2014; Watkins, Moulds, & McIntosh, 2005; McLaughlin, Borkovec & Sibrava, 2007; Borkovec, Hazlett-Stevens, & Diaz, 1999).

The gold standard measure used to assess worry is the Penn State Worry Questionnaire (Topper et al., 2014). The Penn State Worry Questionnaire, a 16-item self-report measure, was developed by Meyer, Miller, Metzger, and Borkovec (1990) as a trait measure for worry. The aim of the questionnaire is to assess the pervasiveness, intensity, and uncontrollability of worry (Molina & Borkovec, 1994). A sample of the questionnaire can be found in Appendix B.

Worry, Rumination, and Psychopathology

Regardless of the definitional difficulties with both concepts, most researchers and clinicians are likely to agree that worry and rumination are two types of repetitive, negative valenced, thought processes that account for some of the symptoms believed to create and maintain psychopathology. Worry and rumination are both thought to be unproductive cognitive thought processes that trigger negative emotions and maintain negative affect (Dar & Iqbal, 2015; de Jong-Meyer, Beck, & Riede, 2009; Segerstrom, Tsao, Alden, & Craske, 2000; Yook, Kim, Suh, & Lee, 2010). With regards to the latter, they are thought to be unproductive because they do not lead to active problem solving or behavioral changes (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). These two types of negative valenced repetitive thoughts are known in research to be implicated in many disorders, including unipolar depressive disorders, obsessive-compulsive disorder (OCD), and generalized anxiety disorder (GAD; Kim, Yu, Lee, & Kim, 2012; van Oppen, Hoekstra, & Emmelkamp, 1995), social anxiety disorder (SAD), and posttraumatic stress disorder (PTSD) indicating that rumination and worry are transdiagnostic (Abbot & Rapee, 2004; Ehlers, Mayou, & Bryant, 1998).

In addition, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) implicates some of the processes of worry, rumination or both as diagnostic criteria in three disorders OCD, GAD, and PTSD, as illustrated in the table below.

Table 1

Worry and Rumination in OCD, GAD and PTSD

| Disorder | Thought Disturbance |
|--|---|
| Obsessive Compulsive Disorder - 300.3 | Recurrent and persistent thoughts, urges, or images that are experienced at some time during the disturbance, as intrusive and unwanted, and that in most individuals cause marked anxiety or distress. (In order to relieve distress from intrusive and repetitive worries, individuals engage in compulsions. <i>Rumination</i> is a common type of compulsion (McKay et. al, 2004)). |
| Generalized Anxiety Disorder - 300.02 | Excessive anxiety and <i>worry</i> (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance). |
| Posttraumatic Stress Disorder - 309.81 | <i>Persistent, distorted cognitions</i> about the cause and or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others. (The persistent and distorted cognitions manifest as <i>rumination and worry</i> (Speckens, Ehlers, Hackmann, Ruths, & Clark, 2007)). |

Even though the DSM-5 does not specifically mention worry or rumination as part of the diagnostic criteria for unipolar depression, and SAD, research points to the role these repetitive thoughts play in exacerbating symptomology associated with the disorders. For example, worry and rumination are consistently assessed and endorsed in self-report measures (e.g. The Ruminative Response Scale, Responses to Stress Questionnaire, Impact of Events Scale, The Penn State Worry Questionnaire, The Worry Domains Questionnaire, and The Student Worry

Scale) of individuals diagnosed with two of the most common mental health disorders, Major Depressive Disorder (MDD) and GAD, which have 12-month prevalence rates of 7% and 3.1% respectively (NIMH, 2015). In addition, these symptoms appear to contribute to the severity or chronicity of MDD, GAD, PTSD, OCD and SAD by exacerbating negative thinking, contributing to poor problem solving, depleting motivation to engage in goal-directed behavior, and reducing social support (Nolen-Hoeksema et al., 2008), underscoring the importance of addressing them in therapeutic interventions (Freeston, Ladouceur, Provencher, Blais, 1995; McEvoy, Watson, Watkins, & Nathan, 2013; Michael, Halligan, Clark, & Ehlers, 2007; Watkins et al., 2005). Given their importance in the potential causal pathway, maintenance, and exacerbation of clinical symptoms; it will be important to examine rumination and worry more closely in the next chapters and how they are each thought to be implicated in specific diagnosable disorders.

Chapter II: Rumination

Function of Rumination

There is a dearth of research on the function of rumination and theorists differ regarding rumination's function. Some theorists suggest that rumination functions as a maladaptive emotion regulation strategy (Smith & Alloy, 2009; Segerstrom, Roach, Ivans, Schipper, & Darville, 2010; Verduyn & Lavrijsen, 2015; Yook et al., 2010). More specifically, individuals believe that engaging in ruminative thinking will result in a decrease in their negative emotional states.

Other theorists posit that rumination is a control strategy. In an attempt to exert control over current life circumstances and create a sense of certainty, individuals may be prone to ruminate over a multitude of questions (Nolen-Hoeksema, 2000) such as “why did my life turnout this way?”; “Why have I not achieved my goals?” ; and “Why do I feel sad?” In search of the perfect answer to life questions or the need for excessive certainty of outcomes, ruminators experience difficulty settling on an answer and committing to a course of action. The inability to find answers or choose a course of action results in the continued search for answers through rumination which self-perpetuates the act of rumination. The uncertainty generated by continuous questioning without finding a solution may, in turn, increase the levels of anxiety (Nolen-Hoeksema, 2000; Nolen-Hoeksema, et al., 2008).

A subset of researchers further propose that individuals who engage in rumination hold the positive belief that rumination will help them achieve their goals (Martin et al., 2004, Papageorgiou & Wells, 2001a; Papageorgiou & Wells, 2001b; Watkins & Moulds, 2005). Therefore, individuals who ruminate are convinced that there are benefits to rumination and therefore continue to engage in this misshapen problem solving strategy. Notably, when

individuals in a dysphoric mood repetitively think about the causes of a personal problem, self-reflect about a situation, or simply try to understand the consequences of their behavior, they erroneously believe they are engaging in a thinking process that helps them to reduce the discrepancies between their current situation and desired outcome, and effectively process information related to stress and trauma (Smith & Alloy, 2009; Wells, 2008; Wells & Matthews, 1994). In reality, rumination is often thought to increase the number of repetitive thoughts an individual has and consequently leads to prolonged, negative affective states (Mor & Winquist, 2002; Nolen-Hoeksema et al., 2008) and therefore likely to exacerbate or add to any pre-existing problems the individual was trying to solve in the first place.

Although there is a lack of consensus about the exact function of rumination, whether it is primarily focused on negative affect reduction, a means of asserting control, or as a way to solve problems; rumination appears to play a significant role in creating, maintaining, or exacerbating unpleasant symptoms that may at some point rise to the level of a clinical disorder necessitating intervention.

Rumination in the Context of Disorders

Rumination is associated with a number of psychological disorders, including depression, GAD, PTSD, OCD, and SAD. The characteristics of the ruminative process within these disorders is similar; specifically, repetitive, obsessive, and partially involuntary (Ehring & Watkins, 2008; Harvey et al., 2004); in that the ruminative thoughts is often described regardless of the specific disorder to "...recur in the absence of immediate environmental demands requiring the thoughts" (Martin & Tesser, 1996, p.7). Literature has shown interesting links between rumination and symptoms specifically associated with the diagnoses and presentation of different disorders; and some of these findings are discussed below.

Rumination and depression. Research indicates a strong correlation between rumination and depression. Studies have shown that individuals diagnosed with depression score higher on a measure of rumination than their non-depressed counterparts (Kimer et al., 2012), and higher levels of rumination impact the onset, severity, and duration of depression (Just & Alloy, 1997; Kuehner & Weber, 1999; Nolen-Hoeksema, 1991; Nolen-Hoeksema, Morrow & Fredrickson, 1993; Rood, Roelofs, Bogels, Nolen-Hoeksema, & Schouten, 2009). Specifically, the likelihood of developing clinical depression is higher in individuals whose response to dysphoric moods is to ruminate (Rood et al., 2009). Additionally, these individuals who responded to their depressed mood with rumination not only prolonged the duration of their depressive episode, but also intensified other negative feelings associated with the episode, including generation of and maintenance of hopelessness and worthlessness (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1993). Conversely, depressed individuals who distracted themselves from their dysphoric moods by focusing on work and interacting with other people, which have the effect of also distracting these individuals from excessive rumination, experienced a less severe and shorter depressive episode and experienced less intense negative feelings (e.g., hopelessness, worthlessness) (Just & Alloy, 1997; Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1993). The findings seem to suggest that increased rumination leads to a prolonged and more severe depressive episode; while actions that inadvertently decrease rumination seem to lead to a more positive prognosis for depressed individuals.

When reflecting on the literature, it seems possible that rumination often contributes to depressive symptomology and worsening depression over time because it leads to a recollection of negative memories from the past, negative interpretations of the present, and a more pessimistic outlook of the future (Koster, Lissnyder, Derakstan, & Raedt, 2011, Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998; Lyubomirsky & Nolen-Hoeksema, 1993, 1995; Nolen-

Hoeksema et al., 2008; Pyszczynski, Holt, & Greenberg, 1987; Watkins 2008). In this way, it seems to be an important mechanism in maintaining the negative triad as described by Beck; specifically, that negative thoughts about the self, others, and the world seem to create and maintain depressive symptomatology (Beck, 1979). Furthermore, rumination is ineffective as it rarely leads to a solution and therefore may lead to even more self-deprecating thoughts, decreased perception of self-efficacy and therefore increased hopelessness, and subsequently contribute to loss of interest and pleasure in most activities. Moreover, the negative outlook on the present time that is likely caused by excessive rumination can lead to social avoidance and isolation, a hallmark symptom of individuals diagnosed with depression, and factors that seem to contribute to the negative cycle of worsening depression symptoms. Essentially, individuals with a negative outlook view both potentially beneficial solitary activities (e.g., running) and collective activities (e.g. going to a restaurant with friends) as distressing, uninteresting, or even pointless. Rumination may, therefore, directly contribute to the social avoidance behavior that maintains and worsens depressive symptoms in many individuals (Brockmeyer, Kulesa, Hautzinger, Bents & Backenstrass, 2015; Goldiamond & Dyrud, 1968). Although avoidance of potentially beneficial activities may provide short-term relief from distress, this type of withdrawal behavior leads to isolation and a lack of positive reinforcement from the environment in the long-term (Brockmeyer, et al., 2015; Jacobson, Martell & Dmidjian, 2001; Martell, Addis & Jacobson, 2001). In addition, the avoidance behavior is negatively reinforced as a person with depression may continue to avoid uncomfortable situations because they learn that they not only obtain temporarily relief from not engaging in a potentially stress inducing activity; but that they have a mental activity (i.e. rumination) to keep their minds occupied instead. Over time, the behavior of rumination may become habitual, stable, and ingrained, sometimes persisting even

after a remission in major depressive symptomology (Hong, 2006; Bagby, Rector, Bacchiochi, & McBride, 2004), which then present as a significant risk factor for future depressive episodes.

Given that empirical research suggests that rumination increases the intensity and duration of depression and therefore may prolong suffering in afflicted individuals, it is interesting to investigate the reasons for why individuals continue to engage in such maladaptive thought processes. Fascinatingly, multiple studies on rumination suggest that depressed individuals endorse very positive beliefs about their practice of ruminating, significantly more than their never-depressed counterparts (Lyubomisky & Nolen-Hoeksema, 1993; Papageorgiou & Wells, 1999; Watkins & Moulds, 2005). For instance, individuals who ruminate about their mood (e.g., “Why am I sad?” “What did I do wrong?” “Will I always be this way?”) inaccurately believed they were enhancing their self-understanding or insight of their negative emotional state (Lyubomisky & Nolen-Hoeksema, 1993). Researchers also found that people with depression believed rumination increased their self-awareness and their understanding of clinical depression (Papageorgiou & Wells, 2009; Watkins & Baracaia, 2001). Ironically, and as discussed in the earlier section, those who ruminate most often believe they are engaging in a formidable process of problem solving, when in actuality the processes are playing a significant role in maintaining their depressive symptoms and potentially leading to further problems in the social, occupational, or other important domains of functioning. It appears that the belief that rumination is a positive strategy, adopted by more depressed than non-depressed individuals, is an important explanation for why depressed individuals continue to engage in this process even though through the eyes of a professional or loved one it is contributing to a worse prognosis.

In addition to the strong association between rumination with depressive symptomatology, the literature also implicates rumination in anxiety disorders. The subsequent section will discuss the implications of how rumination presents in GAD, PTSD, OCD, and SAD.

Rumination and generalized anxiety disorder. Few researchers have specifically studied rumination as expressed in individuals with GAD. However, similar to individuals with depression, individuals with high levels of anxiety, one of the central criteria of GAD, were also found to score highly on measures of rumination (Legerstee, Garnesfski, Verhulst, & Utens, 2011). Some of the existing research findings posit that individuals diagnosed with GAD ruminated more frequently, as measured by the Ruminative Response Scale, than their non-anxious counterparts (Decker, Turk, Hess, & Murray, 2008; Kim et al., 2012). More specifically, researchers found two subcomponents of rumination, brooding and reflection (Treyner et al., 2003; Watkins, 2009). The studies showed that the brooding component of rumination, defined as passively comparing one's current situation to an unachieved ideal, was directly related to GAD while the reflection component of rumination, looking inward to purposefully participate in problem-solving, was not. Adding to the importance of examining the subcomponents of rumination, research suggests that individuals diagnosed with GAD who were more likely to engage in the subcomponent process of brooding were found to have increased levels of anxiety in comparison to individuals with GAD who did not often engage in brooding (Starr & Davila, 2012). With respect to GAD, it appears that the subcomponent process of brooding appears to be especially closely related to the development and maintenance of GAD.

Rumination and posttraumatic stress disorder. Many researchers suggest that rumination is a predictor of persistent PTSD, and that specifically rumination about the traumatic event or events is the key process that maintains PTSD symptomology (Clohessy and Ehlers, 1999; Ehlers, Mayou, & Bryant, 1998; Murray, Ehlers, & Mayou, 2002; Steil and Ehlers, 2000). Specifically, rumination that focuses attention on the causes and consequences of the traumatic event (both aspects that are largely uncontrollable, or at least perceived as such by the victim of trauma) instead of the actual events associated with the trauma (Ehlers & Clark, 2000; Ehlers & Steil, 1995) seem to interfere with effective and therapeutic emotional processing of the event (Foa & Kozak, 1986) leading to the maintenance of PTSD symptomology. Instead of focusing attention on the actual, more objective events of the traumatic experience, individuals clinically diagnosed with PTSD ruminate on the “whys” and “what ifs,” potentially (as posited by some researchers) as a strategy to avoid experiencing the emotions associated with the trauma (Michael, Halligan, Clark, & Ehlers, 2007). With regards to this hypothesis, rumination may allow the individual to avoid *internal stimuli* such as negative feelings and traumatic memories and *external stimuli* generated by the environment that might remind the individual of the traumatic event or events. A consequence of avoiding external stimuli is that the individual is likely to avoid social interaction entirely, even those that might net positive effects on the individual’s mood or outlook. Specifically, investigators posit that successful emotional processing and change occur when the original trauma-related emotions are activated within new environments or experiences (Foa & Kozak, 1986; Teasdale 1999) that are potentially rewarding and not traumatic. In contrast, dwelling on the causes of the trauma via ruminative thoughts instead of proactively engaging with the environment is likely to maintain PTSD symptomatology and specifically drive the belief that the world is not a safe place.

In summary, similar to the avoidance function rumination plays in depression, rumination within the context of individuals with PTSD symptoms seem to serves as an avoidance strategy of the more effective processing of traumatic memories (Ehlers et al., 1998; Michael et al., 2007) which would hasten their recovery from PTSD. Even though avoidance provides temporary relief, in the long term avoidance leads to re-experiencing of the trauma and increased negative mood states (Ehlers et al., 1998; Michael et al., 2007). The negative emotions triggered by rumination increase intrusive traumatic memories leading to a ruminative cycle (Michael et al. 2007) possibly even leading to the development or the exacerbation of any comorbid diagnoses.

Rumination and obsessive compulsive disorder. In addition to depression, GAD, and PTSD, rumination is implicated in OCD and is positively correlated with obsessive-compulsive symptoms (Wahl, Ertle, Bohne, Zurowski, & Kordon, 2011). Rumination as it affects individuals with OCD is generally referred to as a ruminative thinking style and is defined as “a mode of responding to distress that involves repetitively and passively focusing on symptoms of distress and the possible causes and consequences of these symptoms” (Nolen-Hoeksema, 2008, p. 400). The passive focus refers to individuals with OCD who are ruminating having a propensity to fixate on the problems and on their feelings about the problems without mobilizing to action (Nolen-Hoeksema, 2008). Wells (2009) proposed a metacognitive model of OCD, postulating that a ruminative thinking style is in part responsible for the maintenance of the disorder. Specifically as rumination relates to individuals with OCD symptoms, the mental ritual appears to combine review and checking by first mentally replaying an event that did take place, and then adding a hypothetical element of the event that could have but did not take place. Individuals engaging in this repetitive thought process of rumination would then proceed to analyze how they would have behaved if the hypothetical feared scenario did take place. The ritual of analyzing a feared hypothetical situation and determining how one would appropriately

respond in the situation gives the individual a sense of hope that they can manage the situation (Herschfield, 2013) if it were to ever come to fruition. Extant research establishes a clear link between rumination and OCD. Wahl et al. (2011) found correlations between depressive ruminative thinking, obsessive rumination (defined as a “voluntary, effortful cognitive or behavioral act” (Freeston & Ladouceur, 1997, p. 344)), and obsessive-compulsive (OC) symptom severity. The results indicated that higher levels of ruminative thinking to distressing situations resulted in greater obsessive ruminations and subsequently greater obsessive-compulsive symptom severity.

Similar to rumination’s role in other anxiety disorders discussed so far, rumination may initially reduce feelings of anxiety while in the long run increase symptoms through negative reinforcement (Freeston & Ladouceur, 1997; Freeston et al., 1995; Wahl et al., 2011). Rumination appears to exacerbate and maintain OCD symptomology since it functions as an obstacle to decision-making, and indecision is specifically implicated in the pathological symptomology of OCD. People make countless decisions on any given day; some decisions are automatic, and others require thought and analysis. An important goal regarding decision making is to try to maximize positive outcomes as much as possible and to do so expediently, therefore reducing cognitive load; as indecisiveness is an uncomfortable state for human beings and contribute to decision fatigue which leads to a number of deleterious effects including negative impact on emotional states, heightened impulsivity, and ultimately, poorer overall efficiency and effectiveness in the work environment and other important life domains (Polman & Vohs, 2016; Vohs et al., 2008) Compulsive individuals have difficulties making decisions efficiently, and as such decisions are often delayed or avoided, leading individuals to ruminate instead of engaging in action (Sachdev & Malhi, 2005), which appear to have the effect of leading to further delay and avoidance of making decisions and increases emotional distress for the individual.

Rumination and social anxiety disorder. Although rumination is not explicitly listed as a criterion of SAD in the DSM-5, research posits that rumination is a factor in the maintenance of SAD (Abbott & Rapee, 2004; Clark & Wells, 1995; Mellings & Alden, 2000; Rapee & Heimberg, 1997). According to investigators, individuals diagnosed with SAD ruminate by reviewing social interactions in great detail and attributing to them a negative valence (Clark & Wells, 1995; Mellings & Alden, 2000), particularly with regards to their own actions or the perceptions of their actions by others. More specifically, individuals diagnosed with SAD engage in a specific subtype of rumination that is largely related to social interactions known as post-event processing, a “period of reflection on actual or perceived inadequacies, mistakes, imperfections, and the like. . . and is ruminative in nature” (Kocovski, Endler, Rector, & Flett, 2005, p. 972). Individuals with SAD tend to focus specifically upon negative self-focused information that maintains preexisting negative cognitive biases about themselves and the world (Melling & Alden, 2000). Post-event processing leads to strong encoding of their *interpretation* of the experience into memory, which results in the individual recalling the experience more negatively than it actually was (Abbot & Rappee, 2004; Clark & Wells, 1995; Dannahy & Stopa, 2007; Edwards, Rapee & Franklin, 2003; Mellings & Alden, 2000; Rapee & Heimberg, 1997) and has direct consequences on how the individual might approach similar social situations in the future, likely in self-sabotaging or self-effacing ways that increase the likelihood of eliciting their feared responses of rejection from others. Specifically, the process of post-event processing results in anticipatory processing prior to the next social engagement leading an individual to recall all the negative details of their performance in the previous social engagement and to attribute the same negative outcomes to the future social event (Mellings & Alden, 2000;

Rachman, Gruter-Andrew, & Shafran, 2000). In summary, post-event processing, a specific subtype of rumination, are more likely used by individuals with SAD compared to individuals without SAD, and post-event processing functioned to maintain social anxiety symptoms (Krocvoski, Endler, Rectov, and Flett 2005).

Summary of Rumination in the Context of Disorders

In conclusion, individuals who ruminate appear to primarily use it for one or more of the following functions: (a) gain a sense of control, (b) regulation of emotions including the reduction of negative emotions and the avoidance of painful feelings, and (c) achieve goals. Therefore, individuals who ruminate believe that there is a positive effect of this technique, leading them to increasingly engage in it, often at their own detriment. It is possible individuals who tend to ruminate have not made this explicit connection between their tendency to ruminate and the development, maintenance, and even exacerbation of their emotional symptomatology; or the connection between rumination and problems functioning effectively in various life domains.

Worry, a different form of repetitive, negative valenced thought process, will be described in more detail in the subsequent section. Similar to the examination on Rumination, the discussion will include a more developed description of the process and its role in various clinical disorders.

Chapter III: Worry

Function of Worry

Worry is defined as a verbal and linguistic process that allows individuals to avoid vivid and painful imagery, thus reducing negative affect and biological responses (Borkovec, Ray, Stober, 1998). The cognitive aspect of worry increases verbal thought and decreases imaginal thought (a mode of thinking that consists of images that one can see, hear or feel in the mind and is the primary trigger for emotional activation; Borkovec & Inz 1990). Worry appears to be elicited by an environmental or imaginal fear stimulus that triggers mental problem solving to prevent the feared event from occurring and/or to identify coping strategies for such events (Borkovec et al., 1983; Borkovec & Roemer, 1995). Thus, worrying can be adaptive, helping individuals to anticipate, prepare, and handle future dangers.

In contrast, worrying is considered maladaptive when there is no actual threat and the danger is imaginal. Paradoxically, the lack of threat and danger may perpetuate excessive worrying in some individuals. When the unlikely threat does not manifest, worry is reinforced by the lack of occurrence of the situation that was perceived to be threatening, leading to an increase in responding to perceived threats with worry (Borkovec, Alcaine & Behare, 2004). Individuals describe excessive worrying as intrusive concerns or thoughts recurring throughout their days (Gladstone & Parker, 2003). Furthermore, worry is conceptualized to be pathological when it is:

Excessive, out of proportion to the actual problem, pervasive, present most of the time, focused on several themes or topics (typically those that pertain to “everyday routine life

circumstances”, “minor matters”, or both), uncontrollable, and with a tendency to interfere with functioning and cause high levels of distress and impairment (Starcevic et al., 2007).

Habitual worrying negatively impacts both physical and mental health (Brosschot, Verkuil, Thayer, 2016). For example chronic worrying has been associated with a two to seven time increased risk for cardiovascular disease (Tully, Cosh & Baune, 2013). With regards to mental health, persistent worrying is a central causal factor in chronic anxiety and the default response to uncertainty (Brosschot, Gerin, Thayer, 2006). Consistent responding to situations and events with excessive worry also disrupts an individual’s ability to concentrate and engage effectively in other behaviors (Matthews, 1990). Lang (1988) found that verbal presentation of fear material produced less cardiovascular response than imaginal presentation of the same material. Combining these areas of research suggests that imagery activates somatic emotional experiencing and the linguistic nature of worry interferes with emotional processing (Borkovec, Lyonfields, Wiser, Diehl, 1993; Vrana, Cuthbert, & Lang, 1986) thereby, increasing worrying through negative reinforcement (Borkovec & Hu, 1990; Borkovec et al., 1993; Hoehn-Saric & McLeod, 1990).

In addition to worry’s impact on concentration, worry is implicated in control beliefs and avoidance of negative affect. Some individuals who excessively worry believe that they should be able to control events, that the uncertainty associated with the lack of control is intolerable, and that worry will aid in the effort to help them gain a sense of control (Dugas, Gagnon, Ladouceur, & Freeston, 1998; Freeston, Rheaume, Letarte, Dugas, & Ladouceur, 1994). Other individuals utilize worry, albeit unconsciously to some degree, in order to avoid

confronting negative affect and aversive images (Borkovec et al., 2004; Roemer, Salters, Raffa, & Orsillo, 2005). Therefore, individuals who consistently worry derive some perceived benefits from this process, which makes it more difficult to distinguish this behavior.

Worry in the Context of Disorders

Worry is implicated in a number of psychological disorders, including depression, GAD, PTSD, OCD, and SAD.

Worry and depression. Worry in the context of depression is experienced as a predominance of thoughts and not as images (Molina et al., 1998). Two main occurrences result when individuals shift from a neutral state to one of pathological worry: a decrease of focus on the present moment and immediate environment, and an increase in cognitive distortions in the form of absolute words (e.g., *always, never*), catastrophic words (e.g., *awful, terrible, horrible...*) and the use of rules and commands (e.g., *should* and *have to* statements; Ingram & Kendall, 1987; Molina et al., 1998; Vasey & Borkovec, 1992).

Researchers that have examined the relationship between depression and worry indicate that excessive worry is highly correlated with depression (Andrews & Borkovec, 1988; Molina, Borkovec, Peasley & Person, 1998; Segerstrom et al., 2000; Starcevic, 1995). Individuals diagnosed with depression were also found to self-endorse high levels of worry on the Penn State Worry Questionnaire (PSWQ) (McEvoy et al., 2013; Segerstrom et al., 2000). Furthermore, in self-report measures, individuals diagnosed with depression were found to endorse with high frequency the use of the word *worry* in describing their thoughts (Nolen-Hoeksema & Morow, 1993). Further, individuals who endorse higher levels of worry also experience sadness, fear, irritability, and poor self-worth (Kalmbach, Pillai, & Ciesla, 2016); which suggests that there is

at least a correlative relationship amongst these factors, if not a partially causal one from worry to other symptoms associated with depression.

Worry and generalized anxiety disorder. Worry is thought to be the central defining feature of GAD (Barlow, Blanchard, Vermilyea, Vermilyea, & DiNardo, 1986; Dar & Iqbal, 2015; Nolen-Hoeksema, Wisco, & Lyubormiski, 2008; Yang et al., 2014). Worry in GAD is believed to be a predominance of thought activity, which precludes processing negative emotions (Borkovec, Alcaine, & Behr, 2004; Borkovec & Inz, 1990; Newman & Llera, 2011). The existence of increased thought activity which might suggest excessive worry processes in GAD was supported by electroencephalography data showing increases in left frontal cortical activation (Borkovec, Ray & Stober, 1998; Carter, Johnson, & Borkovec, 1986; Heller, Nitschke, Etienne, & Miller, 1997).

When asked why they worry, individuals diagnosed with GAD indicated that worrying helps to distract them from emotions (Borkovec & Roemer, 1995; Freeston et al., 1994), particularly painful or negative ones. Individuals with GAD seem to dislike the direct experience of emotions. In several studies, individuals with GAD reported greater discomfort and fear of the negative consequences of experiencing emotions than did their non-worrying counterparts (Llera & Newman, 2010; Mennin et al., 2005; Roemer et al., 2005; Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). Unfortunately, the routine avoidance of processing negative emotions consequently exacerbates distress as symptoms may reappear in more severe forms, express themselves in bodily ills and pains, and inhibit the learning and practice of effective emotional processing skills (Decker, Turk, Hess, Murray, 2008). Some research also suggests that individuals with GAD have difficulty with the intolerance of uncertainty; and excessive worrying seems to help patients believe they are establishing a degree of control over their circumstances. Patients may believe that

through worrying, they are actively attempting to find a solution and prevent potential negative outcomes (Dugas, Gagnon, Ladouceur & Freeston, 1998; Mogg et al., 1991; Metzger, Miller, Cohen, Sofka, & Brokovec, 1990).

Subjects diagnosed with GAD seem to derive some perceived benefits from excessive worry. For example, individuals with GAD cited (a) motivation to get responsibilities accomplished, (b) preparation for negative outcomes, (c) avoidance of potential bad events, (d) help with problem solving, (e) distraction from aversive emotions, and (f) superstitious positive impact on future events (Davey, Hampton, Farrel & Davidson, 1992). Individuals particularly seem to ascribe to the benefits of motivation, preparation for the worst outcome, and avoidance of feared events (Brokovec & Roemer, 1995).

Worry and posttraumatic stress disorder. Existing studies have established a link PTSD symptomology and worry (Roussis & Wells, 2006; Scarpa, Wilson, Wells, Patriquin & Tanaka; 2009). Given the highly aversive internal experiences associated with PTSD, patients are likely to engage in emotional avoidance behavior through worry (Tull, Hahn, Evans, Salters-Pedneault, & Gratz, 2011). Their motivation to worry appears to be directly related to the intensity of the aversive internal experiences or emotional dysregulation (Marx & Sloan, 2002; Mennin et al., 2005; Tull, Gratz, Salters, & Roemer, 2004).

In PTSD patients, worry appears to increase attention to perceived threat (leading to symptoms such as hypervigilance) while reducing cognitive resources which are needed for processing traumatic events which may make it more difficult for them to experience symptom remission over time (Bardeen & Fergus, & Wu, 2013; Newman & Llera, 2011). Increased attention to perceived threat leads to a vicious cycle as it creates further attentional bias toward negative stimuli or perceived environmental threats, which lead to even more frequent worrying (Hirsch et al., 2011). Similar to how worry operates for individuals with GAD, the worry

process in PTSD is also associated with intolerance of uncertainty (Bardeen et al., 2013). Further, the purpose of worry in PTSD does not seem focused on reducing negative emotions; rather, to maintain a constant emotional state even if that state is unpleasant (Bardeen, et al., 2013). Underlying this particular worry function is the belief by many individuals with PTSD that they lack the ability to regulate emotions and some studies do show that individuals who endorsed a high number of PTSD symptoms were less effective at emotion regulation (Tull, Barrett, McMillan, & Roemer, 2007); therefore, a constant unpleasant emotional state is preferable to fluctuating emotional states (Newman & Llera, 2011).

Worry and obsessive compulsive disorder. Worry in OCD is viewed as a thought control strategy (defined as action taken to attempt to rid oneself of distressing thoughts; Clark, 2004) and is heavily implicated in the development and maintenance of OCD symptomology (Fergus & Wu, 2010; McKay & Greisberg, 2002). In actuality, the frequent use of thought control strategies greatly impede emotional processing of the thought (Foa & Kozack, 1986) and bring the thought further into consciousness (Clark, 2004), which can be very distressing for the individual. In addition, worry was found to interact with co-occurring obsessive beliefs or obsessions (defined as ego-dystonic persistent thoughts and images (Horwath & Weissman, 2000), which inadvertently leads to greater number, frequency, and severity of thought intrusions. In addition, similar to worry's function in GAD and PTSD, both worry and obsessions occur with greater frequency and are associated with stronger perceptions of uncontrollability in clinical populations than in nonclinical groups. Both worry and obsessions are also associated with adverse mood, which is related to attentional biases toward anxiety-related or depression-related information (van Rijsoort, Emmelkamp, Vervaeke, 2001). These findings suggest that worry and the co-occurrence of obsessions in OCD might perpetuate or

intensify OCD symptoms and make maladaptive behaviors (such as compulsions) taken as a way to attempt to alleviate the increased anxiety state more difficult to extinguish.

Worry and social anxiety disorder. Worry has been implicated in the maintenance of SAD symptomology (Hearn, Donovan, Spence & March, 2017). Individuals with SAD were found to score higher in intensity and frequency of worry than their nonclinical counterparts, which may suggest that worry is a maintaining or even causal factor in the disorder (Hearn et al., 2017; Starcevic et al., 2007). Some theorists believe the function of worry within SAD is similar to the function of worry in GAD and PTSD in that it allows an individual to avoid uncomfortable emotions (Abbott & Rapee, 2004; Mellings & Alden, 2000; Edwards, Rapee, & Franklin, 2003; Rachman et al., 2000; Wells & Carter, 2002). The process of avoiding uncomfortable emotions by worrying is thought to generalize to and exacerbate the avoidance of a multitude of social interactions and performance situations (Hofmann, 2007). Other theorists believe that individuals worry as a preparatory mechanism, so that they can rehearse aspects of the social interaction to increase their feelings preparedness and control (Clark & Wells, 1995; Kashdan & Roberts, 2007; Klemanski, Curtis, McLaughlin, Nolen-Hoeksema, 2016). However, in individuals with SAD, this seems to have the opposite function and makes them feel ill-prepared, ill-at-ease, leading them to avoid the situation completely or to self-sabotage their “performance” due to their heightened anxiety state.

Summary of Worry in the Context of Disorders

In conclusion, individuals who worry appear to primarily use it for one or more of the following functions, two of which are similar to the reasons individuals engage in rumination: (a) gain a sense of control, (b) regulation of emotions including the reduction of negative emotions and the avoidance of painful feelings, and (c) as a response to heightened intolerance of

ambiguity. Similar to rumination, individuals who worry believe that there is a positive effect of this technique, leading them to increasingly engage in it along with other co-occurring behaviors to mitigate their distress, which makes it difficult for these behaviors to be extinguished especially with the passage of time (Kircanski et al., 2015). It is possible individuals who tend to worry are more focused on the perceived benefits of worrying rather than its consequences; and have adopted this as a consistent coping strategy as a way to temporarily feel better about certain situations and circumstances. However, over time, individuals who excessively worry tend to have poorer physical and mental health, and have great difficulty functioning effectively in various life domains.

The previous discussion appears to shed light on the vast similarities between worry and rumination in terms of their function and effects across various disorders (Kircanski et al., 2015; McEvoy, Watson, Watkins, & Nathan, 2013). In fact, an active debate exists regarding whether rumination and worry are the same or separate processes. Therefore, the theoretical and clinical delineations of both concepts need more clarification. The nature of worry and rumination suggests that these processes overlap with and differ from each other in important ways. To further elucidate these two concepts, a more expansive discussion to enhance understanding of these concepts follows. First, the primary differences between worry and rumination are discussed. Second, the similarities between worry and rumination will be reviewed. Third, the clinical implication of the substantial overlap of rumination and worrisome thoughts will be described. Finally, the importance of targeting rumination and worry as part of a transdiagnostic treatment approach are explored.

Chapter IV: Worry and Rumination

Differences between Worry and Rumination

Historically, the symptom of worry was studied in the context of anxiety disorders and the symptom of rumination was studied in the context of depressive disorders (Ehring & Watkins, 2008; Fresco, Frankel, Mennin, & Heimberg, 2002). Some research posits that worry and rumination may retain distinct components, which predict anxious and depressive symptoms differentially within and across time (Ehring & Watson, 2008; Hong, 2007).

In comparison to rumination, worry emerged as the dominant cognitive vulnerability factor typically seen in anxiety disorder presentations that predicted increases in symptoms over time (Hong, 2007). Conversely, rumination uniquely predicted higher disengagement from problems, which resulted in further exacerbation of depressive mood (Hong, 2007). These results demonstrated not only the distinct features of worry and rumination on coping behavior, but also the different coping pathways by which they differentially impact on subsequent symptoms. Further, worry is believed to be future-focused and more associated with feelings of anxiety while rumination is thought to be past-oriented and more associated with feelings of depression (Borkovec et al., 2004; Ehring & Watson, 2008; Fresco et al., 2002; McLaughlin et al., 2007; Trapnell & Campbell, 1999). Furthermore, the study participants were able to distinguish worry and rumination based on the temporal-orientation of the thoughts, past or present, and whether the focus was internal/on the self or external/on the environment (Kircanski et al., 2015). The above findings may have led to worry to be named a trademark feature of GAD (GAD; American Psychiatric Association, 2013) and a feature of all anxiety disorders (Barlow, 2008), while rumination has become prevalently featured as a marker of depression (Nolen-Hoeksema, 2004).

In summary, worry and rumination are experienced differently by an individual, specifically with regards to temporal orientation past versus present, with regards to focus internal versus external, and the impact on coping behavior, perception versus avoidance of problems. Historically, these two concepts have been studied somewhat separately; however, a large growing body of literature is beginning to examine these factors as interrelated processes that present as symptoms across a number of clinical conditions.

Similarities between Worry and Rumination

Worry and rumination have been studied as related and overlapping processes in recent literature. For example, both worry and rumination are classified in the literature as Repetitive Negative Thinking (RNT). RNT are unproductive and repetitive thought processes that function to maintain and increase negative affective states (Ehring & Watkins, 2008; Segerstrom et al., 2000; Watkins, 2008). Moreover, whereas persistent brooding about a problem (rumination) is traditionally known to be a prominent feature of major depressive disorder (MDD), while worry is more strongly associated with generalized anxiety disorder (GAD), recent research suggests RNT increases vulnerability to multiple anxiety and depressive disorders and, as a common risk factor, elevated RNT may account for the high levels of comorbidity observed between emotional disorders (McEvoy, Watson, Watkins, & Nathan, 2013). Interestingly, some research indicates that both worry and rumination are verbal, linguistic, and associated with an individual's positive and negative meta-cognitive beliefs about their function. For example, an individual may believe the function of a negative or positive thought is essential in order to achieve a certain goal (Ehring & Watkins, 2008; Fresco et al., 2002). Segerstrom et al. (2000) found that both worry and rumination significantly correlated with a measure of repetitive thinking, leading them to propose that while thought content and goal orientation could

discriminate between anxious worry and depressive rumination, thought process might not discriminate between them. In fact, the literature reveals three shared qualities of the thinking processes underlying worry and rumination. Firstly, thought processes are considered to be repetitive; secondly, thought processes are difficult to control; and thirdly, thought processes are focused on negative content (Borkovec et al., 1983; Kashdan & Roberts, 2007; Michael et al., 2007; Nolen-Hoeksema, 2000). Further, it appears that uncontrollable levels of repetitive negative thinking are present across a large range of clinical disorders and appear to be causally involved in the maintenance of emotional problems (Borkovec et al., 1983). As direct comparisons of repetitive negative thinking between different disorders (e.g., GAD-type worry and depressive rumination) have generally revealed more similarities than differences, it is thus argued that repetitive negative thinking is characterized by the same process across disorders, which is applied to a disorder-specific content (Segerstrom et al., 2000). Additionally RNT in the form of worry and rumination were further found to impact the quality of the daily lives of individuals prone to these processes. For example, participants in one study experienced both worry and rumination as highly unpleasant, repetitive, and uncontrollable (Kircanski et al., 2015). Other examples of RNT as cited by Watkins (2008) include “1) Perseverative cognition, 2) Emotional processing, 3) Cognitive processing, 4) Mental simulation, 5) Rehearsal, 6) Reflection, and 7) Problem solving” (p.163). Watkins (2008) review of the literature consolidates the unconstructive consequences of RNT into “(a) Vulnerability to depression, (b) Vulnerability to anxiety, and (c) Difficulties in physical health.” (p.166). Thus, RNT is known to be a transdiagnostic process as it is not disorder specific; and furthermore, the extant literature appears to suggest that the symptoms of worry and rumination greatly overlap in their presentation, and delineations between the two concepts are not always clear.

Moving toward a Transdiagnostic Theory

The historically accepted idea that worry is often associated with anxiety and rumination is often associated with depression is being challenged by recent literature. According to Moffit et al. (2007), rumination is a significant mediator in the prospective associations of anxiety symptoms with subsequent depression and of depressive symptoms with subsequent anxiety. Further, abundant evidence documents strong temporal relationships between symptoms of anxiety and depression and high levels of successive comorbidity between major depression and anxiety disorders (Moffit et al., 2007). Nolen-Hoeksema, Parker and Larson (1994) suggest that ruminative responses to negative affect are associated with elevated risk for the development of comorbid symptoms of emotional disorders over time, thus explaining the role of rumination in these reciprocal relations between symptoms of depression and anxiety over time. These associations may result from the direct effects of rumination on positive and negative affect or from the wide range of other negative consequences of rumination including poor problem-solving and decreased interpersonal functioning (Lyubomirsky & Nolen-Hoeksema, 1995; Watkins & Moulds, 2005). Further, RNT increases vulnerability to multiple anxiety and depressive disorders and, as a common risk factor, elevated RNT may account for the high levels of comorbidity observed between emotional disorders (McEvoy et al., 2013; Starr & Davila, 2012). After controlling for depression and worry, Watkins (2009) revealed rumination is positively associated with anxiety.

Thus, more recent research is moving in the direction where worry and rumination are related to *both* anxiety and depression and there may not be clear delineations between the two concepts in the development and maintenance of these disorders (Blagden & Craske, 1996; Fresco et al., 2002; Molina et al., 1998; Muris, Roelofs, Meesters, & Boosmana, 2004; Nolen-Hoeksema, 2000; Segerstrom et al., 2000; Siegle, Moore, & Thase, 2004; Starcevic, 1995;

Watkins et al., 2005). For example, research points to evidence implicating RNT in a multitude of disorders including a number of Anxiety and Mood disorders, thereby classifying RNT as a transdiagnostic process (Harvey et al., 2004; Kalmbach et al., 2016; Kircanski et al., 2015; Klemanski et al., 2016; McEvoy et al., 2013, Spinhoven, Drost, van Hemert, & Penninx, 2015). Segerstrom et al. (2000) found that individuals prone to elevated levels of RNT, which includes both worry and rumination, were more likely to experience anxiety and depression. Interestingly, According to Ehring and Watkins's (2008) review of the literature, RNT was found to be present in non-control groups in up to thirteen disorders including: (a) Depression (e.g., Thomsen, 2006; Watkins, 2008), (b) PTSD (e.g., Clohessy & Ehlers, 1999; Ehring, Ehlers, & Frank, 2008), (c) Social anxiety disorder (e.g., Abbott & Rapee, 2004; Joormann, Dkane, & Gotlib, 2006), (d) OCD (e.g., Abramowitz, Whiteside, Kalsy, & Tolin, 2003; Amir, Cashman, & Foa, 1997), (e) Insomnia (e.g. Harvey, 2002), (f) Eating disorders (e.g., Nolen-Hoeksema, Stice, Wade, & Bohon, 2007; Sassaroli et al., 2005), (g) Pain disorder (e.g., Eccleston, Crombez, Aldrich, & Stannard, 2001; Sullivan, Bishop, & Pivik, 1995), (h) Hypochondriasis (Fink et al., 2004), (i) Alcohol use disorder (Nolen-Hoeksema & Harrell, 2002; Nolen-Hoeksema et al., 2007), (j) Psychosis (e.g., Freeman & Garety, 1999; Morrison & Wells, 2007), (k) Bipolar disorder (e.g., Thomas & Bentall, 2002; Thomas, Knowles, Tai, & Bentall, 2007), (l) GAD (Gentes & Ruscio, 2015), and (m) Panic disorder (McEvoy et al., 2013).

How Worry and Rumination leads to Psychopathology

Worry and rumination are behaviors that exist on a spectrum. These are behaviors all people engage in to some degree, but an important question may be when and how these processes become dysfunctional and are linked to the development and maintenance of psychopathology. According to Ehring and Watkins (2008):

One implicit assumption of the transdiagnostic approach is that a process is found in multiple disorders because it reflects a normative process also found in healthy controls (i.e., a continuum-dimensional approach to psychological disorders, with the same basic processes and mechanisms active in both normal controls and patients, but in a more extreme form in patients). (p. 200)

Since worrisome and ruminative thought processes can be found in clinical and non-clinical groups, many theories have been proposed in an attempt to explain what exactly moves these processes from a functional realm to a dysfunctional one. Cognitive theorists posit that RNTs are generated in response to unattained goals (Martin & Tesser, 1989, 1996). Since both clinical and non-clinical individuals have personal concerns or goals that have not been successfully met, it is believed that individuals who experience clinically significant symptoms become “stuck” in excessive RNT because their goals may be more extreme, perfectionistic in nature, and less attainable (Ehring & Watkins, 2008). Additional proposed theories to explain excessive RNT include a tendency by some individuals to focus more on the self (internalizing) at the expense of being aware of the environment and the cues it provides (externalizing) (Ingram, 1990). Furthermore, some individuals have a propensity to favor abstract over concrete processing (Watkins, 2008), which may lead to excessive RNTs and therefore a higher risk of developing clinically significant symptomatology. While concrete processing generally results in action plans with associated steps (who and what), thereby decreasing RNT and the associated risk of developing RNT related psychopathology (Lyubomirsky et. al, 2013); individuals who are more likely to utilize abstract processing frequently ask questions that may increase use of RNTs to make sense of situations. Examples of such abstract processing questions include *Why does this always happen to me?* And *Why am I so unlucky?* Versus concrete processing which includes questions such as *What steps am I going to take next to resolve this situation?* Another

theory for the maintenance of RNT is a strongly held belief that engaging in more RNTs will lead to positive outcomes and goal attainment; when in fact it does not aid them in finding effective solutions (Wells & Papageorgiou, 2004). As a result of those held beliefs, these individuals continue the repetitive thought cycle constantly in search of a solution.

The additional question of whether RNT across the different disorders should be regarded as one single process with identical phenomenological and functional properties cannot yet be conclusively answered as the available empirical evidence on this issue is limited. However, converging evidence from studies using different methodological approaches suggests that at least the two most prototypical types of RNT; namely, worry and depressive rumination, show many more similarities than clear differences. It therefore appears reasonable to adopt the parsimonious hypothesis that worry and rumination share a strongly interrelated process with several factors. In addition to being repetitive, difficult to control, and negative in content, this process appears to also be characterized by a predominance of verbal stimuli, to adopt an abstract quality, and to be possibly related to other negative cognitions. By using a transdiagnostic approach to further examine worry and rumination, researchers may begin to isolate the underlying factors of RNTs and develop specific interventions to reduce the use of RNTs overall and bring their use to a more functional and normative state. This has implications on enhancing the treatment of a variety of clinical disorders by targeting the underlying processes of distressing symptoms.

Chapter V: Method

Purpose of the Study

The proposed study will examine rumination and worry in the context of various disorders, and will review a transdiagnostic treatment, Unified Protocol for Transdiagnostic Treatment of Emotional Disorders, that addresses these constructs. The review will focus on two types of repetitive negative thinking, worry and rumination, more specifically the (a) definition, (b) process, (c) theories, and (d) maintenance of psychopathology. A second focus of the analysis will be on the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP), more specifically the rationale for using a transdiagnostic treatment, an overview of the UP treatment modules, a review of the UP literature, and implications for future treatments. The literature will be synthesized and subsequently analyzed based on the following, (a) authors, (b) types of therapies, (c) results, (d) discussion/conclusions and clinical implications, and (e) critical appraisal and suggested future directions. The critical appraisal component will include an emphasis on the research and interventions with UP and their impact on reducing worry and rumination.

Literature Identification

Literature to be reviewed on worry, rumination, and UP, will be identified through comprehensive searches of the following electronic EBSCOhost databases: PsycArticles, PsychINFO, PubMed, ProQuest, PsychiatryOnline, and WorldCat, in addition to public databases such as Google Scholar. The terms used to search the databases will include worry, rumination, transdiagnostic, anxiety, depression, GAD, PTSD, OCD, SAD,

treatment, UP, culture, and groups. The searches will involve using the library systems of Pepperdine and Loyola Marymount Universities, as well as the Public Library system of Los Angeles, applying the same terminology as noted above.

Presentation of Findings

The comprehensive review of the literature will be presented in prose and comprised of separate chapters. The first chapter will elucidate the importance of worry and rumination in the development and maintenance of psychopathology across various diagnosable disorders, providing definitions and context for the constructs. The second chapter will include a detailed exploration regarding the processes of rumination and worry in depression, GAD, PTSD, OCD, and SAD. The third chapter will highlight the similarities and differences between worry and rumination, especially as they are discussed in parallel often in the extant literature; and the implications of these similarities and differences in developing explanatory mechanisms in psychopathology and consequently treatments to address the associated clinical problems. The fourth chapter will feature a limited discussion of culture and psychopathology. The final chapter will focus on the rationale, overview, and literature associated with UP. Additionally, the chapter will include ideas for future research.

Chapter VI: Culture and Psychopathology

While it is beyond the scope of this document to comprehensively review the literature on the manifestation of depressive and anxiety disorders across cultures, some examples of the varied presentations of depression and anxiety may serve to remind clinicians of the importance of considering and attuning to a patient's culture while delivering any psychotherapeutic intervention. Prior to considering the differences among various cultural manifestations of worry and rumination concepts and dimensions, it is useful to begin with the consideration of a shared transdiagnostic cross-cultural process that potentially underlies the development, maintenance, and exacerbation of clinical symptoms across a spectrum of emotional disorders (e.g., GAD, PTSD, OCD), known as "thinking a lot." This concept, often discussed in the cross-cultural literature and represents a possibly universal phenomenon, relates directly to the rationale of why it may be beneficial to intervene from a unified approach rather than one that is targeted for specific diagnoses.

Thinking a Lot a Cross-Cultural Similarity

Despite cultural differences in conceptualizations and operational definitions of worry and rumination, more recent literature notes an important phenomenon of similarity; that individuals from many cultures engage in repetitive negative thinking (RNT), that can include in its conceptualization concepts related to worry and rumination (Hinton, Barlow, Reis, & de Jong, 2016). In cross-cultural literature, RNTs are referred as "thinking too much" or "thinking a lot," and regardless of the culture's conceptualizations of how the mind and body function, or why "thinking a lot" occurs, it seems accepted across cultures that engaging in excessive RNTs lead to the development of stress (Hinton et al., 2016). Many researchers have identified "thinking a lot" as a key communication of psychological distress; that is, when individuals complain of

“thinking a lot,” they are communicating that they are repeatedly thinking (ruminating or worrying) about past or future negative events to the point of creating psychological discomfort (de Jong 2002; Hinton, et al., 2016; Kaiser et al. 2014; Pedersen, Kienzler, & Gamarra 2010; Yarris, 2011, 2014). Hinton et al. (2016) defined “thinking a lot” as locally bound to “a specific interpersonal, economic, and treatment course in a locality; ‘thinking a lot’ and its symptoms are labeled, reacted to, and treated in a locality in a specific way that gives rise to a certain social, economic, and treatment course” (Hinton, et al., 2016, p.575). Notably, “thinking a lot” is identified as one of nine cultural concepts of distress in the DSM-5 (American Psychiatric Association, 2013). Since individuals with different emotional disorders report excessive and repetitive thinking about their current concerns, problems, past experiences, or worries about the future, and because such RNT is found across diverse problems including affective disorders and anxiety disorders, researchers have proposed RNT as a definite transdiagnostic process that leads to psychopathology which may then be categorized into various DSM-5 diagnoses or culture-bound syndromes (Hinton et al., 2016). RNTs may explain the observed shared variance in emotional disorders across cultures, and may also serve as a rationale to turn our attention to transdiagnostic perspectives in the development of effective treatments. However, there are important cultural differences to consider in the manifestations of worry and ruminations as well, which will weigh heavily into the tailoring of even unified treatment approaches for specific individuals and their unique expressions of symptomatology. Some of the important cultural differences found in extant literature are described in the subsequent section.

Cultural Differences

An evaluation of cultural differences in the presentation of various disorders requires that a distinction be made between disease and illness. Diseases (e.g. hypertension, hypothyroidism)

are biomedical and are present across cultures, whereas illnesses are culturally bound and subjectively experienced (Stein & Williams, 2010). Essentially, a cultural group, race, or ethnicity may be related to a given psychological phenomenon (Stein & William, 2010).

According to Hofmann & Hinton (2014), the subjective experience of the illness is influenced by two main factors: 1) how individuals from different cultures understand the mind and body connection, and 2) the impact that culturally specific social norms and rules have on both an individual and the greater society. The first factor relates to the influence of individuals' understanding of their own body on the individual expression of psychopathology (Hofmann & Hinton, 2014). For example, the interpretation of symptoms of a panic attack may differ by culture; while Americans may attribute the tightness in their chests to a heart attack, Cambodians believe they are having a wind attack (Khayâl cap), which is described as a rising of wind and blood in the body that can have deleterious effects (American Psychiatric Association, 2013).

The second factor identified by the authors relates to the importance of contextual factors, including social normal and group rules, in influencing the behavior of individuals. Some of the well-researched, circumstantial factors include: (a) collectivistic vs. individualistic cultures and (b) self-construals which is defined as the extent to which individuals view themselves as independent vs. interdependent of others (Hofmann & Hinton, 2014). For example, in collectivistic cultures, the harmony between thoughts, feelings and behaviors is a primary focus because of the higher societal calling on synchronization within the group. In many collectivistic cultures, embarrassing other group member by not maintaining emotional harmony often is associated with feelings of individual shame (Hofmann & Hinton, 2014). Within the framework of anxiety and depression this may lead to worry and rumination about embarrassing oneself and others and feelings of shame (Hofmann & Hinton, 2014). Alternatively, people's thoughts and feelings about themselves determine behavior in individualistic cultures generally leading to

feelings of guilt and self-blame (Hofmann & Hinton, 2014). Similarly, self-construals impact the manifestation of psychopathology (Hofmann & Hinton, 2014; Markus & Kitayama, 1991).

In a sense, Hofmann & Hinton (2014) acknowledge that culture influences and affects the content but not the process of psychopathology, such as depression and anxiety. The differences seen between cultures are dependent on the beliefs individuals have about their emotional experiences (Hofmann & Hinton, 2014). Consequently, culture is of profound importance to the experience of both depression and anxiety, the construction of meaning and social response to illness within families and communities, the course and outcome of disorders, and thus to the very constitution of emotional illness (Hofmann & Hinton, 2014).

Culture and depression. As outlined previously, much of the research on the function of rumination carried out in psychology is undertaken on participants from western cultures and is then generalized as a whole. Currently, the findings from research conducted in western cultures overwhelmingly suggest that the role of rumination is associated with the maintenance of distress and also with depression (Just & Alloy, 1997; Kuehner & Weber, 1999; Nolen-Hoeksema, 1991; Nolen-Hoeksema, Morrow & Fredrickson, 1993; Rood, Roelofs, Bogels, Nolen-Hoeksema, & Schouten, 2009). Importantly, however, research on the role of rumination in behavior and psychopathology in western cultures does not necessarily transfer from one culture to another. For example, Grossmann & Kross (2010) found that when Russians engage in rumination they simultaneously create self-distance (i.e., seeing experiences as an outside observer). Consequently, the impact of rumination is modulated downward (Grossmann & Kross, 2010). Additionally, a study investigating rumination across various ages and cultures found that rumination was lower in older Americans versus younger Americans (Grossmann, Karasawa, Kan, & Kitayama, 2014). In contrast, rumination levels were found to be uniform and equal

throughout the ages among Japanese participants (Grossman et al., 2010). These examples highlight how cultural diversity manifests and impacts individual and group thoughts, behaviors, and well-being.

Culture and anxiety disorders. As discussed extensively in a previous section, anxiety disorders are some of the most prevalent mental disorders. However, these disorders are strongly influenced by ethnic, racial, and cultural factors, in part because of culturally dependent variations in the beliefs about the underlying physiology of the illness syndromes and the social context and norms a person is exposed to (Hofmann & Hinton, 2014). Cross-cultural research provides a wealth of evidence suggesting that anxiety and disorders of anxiety are universally present in human societies (Good & Kleinman, 1985). However, cross-cultural exploration also demonstrates that the phenomenology of such disorders and the meaningful forms through which distress is articulated varies in quite significant ways across cultures (Good & Kleinman, 1985). Thus, since excessive, exaggerated worry is a symptom that has been often associated with anxiety disorders, it is beneficial to explore how worry differs across various cultures.

Cross-cultural research has identified three primary ways that the Western experience of worry/anxiety differs from other cultures. First, according to Friedman (1997), Western cultures tend to focus primarily on the emotional experiences of excessive worry to the exclusion of the somatic presentations of worry. In many other cultures, worry is often characterized somatically; for example, in some African cultures, worry and the manifesting feelings of anxiety are experienced somatically as parasites crawling on the body and the head (Friedman, 1997). A second salient difference observed between cultures is the content of worries. For example, in Western cultures, the content of worry in OCD is distressing and worrying is viewed as a method to rid oneself of these thoughts (Clark, 2004; Fergus & Wu, 2010; McKay

& Greisberg, 2002). In contrast, in some non-Western cultures, obsessions are believed to stem from ancestral displeasure or intentional witchcraft leading individuals to believe that worry functions to reduce the impact of the bewitchment or lessen ancestral anger (Stein & Williams, 2002). Third, the experience of worry has been found to differ across cultures as a function of self-construal, specifically whether individuals view themselves as independent or interdependent (Hofmann & Hinton, 2014). In Japanese and other Eastern cultures, *Taijunkiyo-fu-sho* (TKS) is a disorder that shares many similarities with social anxiety disorder (Hofmann & Hinton, 2014; Kirmayer, 1991) with a key difference of self-construal. As opposed to Western cultures where worry is primarily focused on avoiding personal embarrassment (independence), in Eastern cultures and in TKS individuals worry about embarrassing and offending others (interdependence; Kleinknecht, Dinnel, Kleinknecht, Hiruma, & Harada, 1997; Lewis-Fernandez et al., 2010; Hofman & Hinton, 2014). Thus, cross-cultural research on emotional and somatic expressions of anxiety, the content of worry, and processes of self-construal provide strong evidence that a person's cultural background influences the experience and expression of emotions.

Chapter VII: Unified Protocol for Transdiagnostic Treatment of Emotional Disorders

Rationale for Transdiagnostic Therapies

As previously discussed, worry and rumination are RNTs that underlie a multitude of emotional disorders, including mood and anxiety disorders (Harvey, Watkins, Mansell, & Shafran, 2004; Segerstrom, Hardy, Evans, Boggero, Alden, & Stanton, 2016; Segerstrom, Roach, Evans, Schipper, & Darville, 2010; Watkins, 2008). Mood and anxiety disorders are often referred to as emotional disorders because they are characterized by intense negative emotions that are maintained by patients' efforts to avoid or escape these aversive emotional experiences (Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014). Further, although using different methodological approaches, studies directly comparing worry and rumination have revealed more similarities than differences between these processes (Barlow et al., 2014), which may not be surprising since emotional disorders are highly comorbid with each other (Kessler et al., 2005). In a National comorbidity study, 12-month DSM-IV disorders were found to be highly prevalent in the United States, with anxiety disorders ranked as the most common mental disorder, followed by mood disorders (Kessler et al., 2005). Comorbidity profiles revealed more than 57% of 12-month cases of anxiety and depression were comorbid, while lifetime prevalence rates for comorbidity between anxiety and affective disorders were 81% (Brown, Campbell, Lehman, Grisham & Mancill, 2001; Kessler et al., 2005). The high rate of comorbid disorders among community populations (and not necessarily those that qualify for the strict inclusion/exclusion criteria necessary to establish efficacy in clinical trials) suggests that transdiagnostic treatments may better address the types of patients that present routinely in clinical practice. Importantly, Transdiagnostic treatments allow for symptom reduction across the

comorbid disorders, especially for those symptoms that have common underlying mechanisms (such as worry and rumination) rather than targeting symptoms associated with a single disorder.

In addition to the aforementioned highly comorbid clinical presentations, it appears that many emotional disorders share the likely universal process of RNTs (the terminology ascribed to most Western literature) or “thinking a lot” (the terminology ascribed to most cross-cultural studies; Hinton et al., 2016). Evidence from cross-cultural studies suggest that RNTs or “thinking a lot may play a crucial role in the development and/or maintenance of psychological disorders, combined with findings that display hardly any differences in process characteristics of RNT/”thinking a lot” between anxiety and affective disorders, it is possible that the need for disorder specific treatments will no longer be the gold standard. In their place, clinicians will be called upon to learn and implement a parsimonious number of evidence-based treatments (Ellard, Fairholme, Boisseau, Farchione, & Barlow, 2010) or techniques, with an aim towards unified approaches or transdiagnostic protocols.

As discussed previously, transdiagnostic treatments address the likely universal process of RNTs/”thinking a lot,” under which worry and rumination are subsumed. Furthermore, transdiagnostic treatments address the potential self-report bias that may be especially prevalent among certain cultures that are likely to ascribe self-stigma with regards to mental illness diagnoses and identification by shifting the focus away from a categorical conceptualization of psychopathology (which represents status as a “disordered individual”) to a dimensional one (which suggests that mental health is based on establishing an optimal range for the expression of a particular trait or characteristic). Therefore, the use of a transdiagnostic approach may help to address the significant barrier that stigma can present for individuals who are in high need of care but experience difficulty seeking and engaging in specialty mental health care. Instead of focusing on symptom reduction or disorder “cures,” a transdiagnostic approach naturally lends

itself to establishing and tracking other markers for progress such as quality of life and activities of daily functioning improvement. Manuals can be developed around the concept of learning skills to better one's life, and to find the optimal dose of "thinking a lot" that helps the individual strive towards and achieve goals but does not hold them back due to the engagement in excessive ruminative content. Transdiagnostic approaches have the potential to shift the field's traditional focus on correcting dysfunction to improving function, in line with recent approaches that have underscored the importance of positive psychology and the proliferation of strength-based interventions.

Presently, many psychotherapeutic interventions focus on a single disorder and are delivered through manualized, single-disorder protocols (SDP). Often times, the differences between these protocols are minimal (Ellard et al., 2010; Wilamowska et al., 2010). The limitations associated with this approach to therapy include the cost and time associated with training clinicians to competently deliver disorder-specific manualized treatments, the expectation that clinicians will achieve mastery of multiple treatment modalities, and the burden on patients to access the appropriate treatment (Barlow et al., 2017; Norton & Roberge, 2017; Wilamowska et al., 2010). Furthermore, the sheer number of manualized treatment protocols make it challenging for clinicians to choose among them (Wilamowska et al., 2010). Thus, the barriers associated with single-disorder treatments discussed above render the need for fresh insight and new interventions in an effort to increase patient access to trained clinicians.

In response to these problems, transdiagnostic approaches to treatment emphasizing commonalities across disorders have been attracting greater attention. A unified treatment approach could increase clinician treatment mastery and address patient access to treatment, while simultaneously treating co-morbid disorders (Barlow et al., 2017) Transdiagnostic treatments are also more cost effective and time efficient (Bullis et al., 2015). Research focusing

on the efficacy of transdiagnostic treatment of psychopathology is a relatively recent development in the field of psychology and advances in scientific research are leading to a more dimensional (i.e., degree to which a characteristic or symptom is present) versus categorical conceptualization of psychopathology (Ellard et al., 2010). When psychopathology is conceptualized dimensionally, issues related to comorbidity, NOS diagnoses, and subclinical presentations are substantially reduced, leading to a more direct approach to treatment planning (Ellard, et al., 2010). One transdiagnostic treatment that has been garnering attention in the recent literature is the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (UP).

Overview of Unified Protocol for Transdiagnostic Treatment of Emotional Disorders

The UP was developed to treat emotional disorders, including GAD, PTSD, OCD, SAD, Panic Disorder, Agoraphobia, and mood disorders (Barlow et al., 2011). The UP was developed utilizing research, information and data from the schools of neuroscience, learning theory, emotional development, emotion regulation, and cognitive science (& Allen & Choate, 2004, Ellard et al., 2010). The literature suggests that emotional disorders, such as anxiety and unipolar mood disorders (depressive disorders) share commonalities, including both biological vulnerabilities (e.g., genetics) and psychological vulnerabilities (e.g., early life experiences) (Barlow, Allen, & Choate, 2004; Brown, 2007; Brown & Barlow, 2009). Additionally, investigations into mood and anxiety disorders have led to the identification of commonalities across cognitive, behavioral, and emotion regulation domains (Ellard, et al., 2010). Thus, the UP was designed to treat the underlying factors contributing and maintaining emotional disorders rather than targeting disorder specific symptomology (Barlow et al., 2011; Gallagher et al., 2013).

In order to achieve this objective, the UP extracts various treatment components from existing evidence-based treatment approaches to create a modules-based treatment for emotional disorders (Gallagher et al., 2013). Primarily, the UP integrates the fundamental principles of CBT, mindfulness, and acceptance based principles by, challenging maladaptive thoughts (RNTs), by changing action urges associated with ineffective emotions, by targeting behavioral and emotional avoidance, by focusing on the present moment, and by utilizing exposure techniques (Barlow et al., 2011). Moreover, the UP incorporates interventions that focus on deficits in emotion regulation since emotion dysregulation is an underlying feature of emotional disorders (Barlow et al., 2011; Fairholme, Boisseau, Ellard, Ehrenreich, & Barlow, 2010).

Essentially, the focus of the UP is to counter emotion driven behaviors (EDBs), which can interfere with patients' lives. EDB is generally defined as acting on an internal urge that generally will lead to trouble in the individual's life. The UP focuses on how patients experience and react to their own emotions rather than how they react to situational factors, such as feared stimuli (e.g., public places, traveling by airplane; Barlow et al., 2017). Thus, the goal of the UP is to teach patients new ways to respond to uncomfortable emotions, which in turn, impacts individual behavioral choices and generally will result in a reduction of symptoms and psychopathology (Norton & Paulus, 2016).

A profound departure from disorder-specific treatments of various emotional disorders, the UP is designed to be applicable to all anxiety and unipolar mood disorders, as well as other disorders with strong emotional components. The goals of treatment are accomplished through eight modules: (a) Enhancing motivation (b) Psychoeducation regarding the function of emotions (c) Mindful and nonjudgmental emotional awareness, (d) Cognitive flexibility, (e) Identifying and preventing patterns of emotional avoidance, (f) Increasing awareness and tolerance of emotion related sensations, (g) Interoceptive and situational emotion-focused

exposures, and (h) Relapse prevention (Barlow, et al., 2017; Gallagher et al., 2013; Wilamowska et al., 2010). Five of the eight modules (#3-7 on the list above) are considered to be core UP modules, meaning that they deliver the core components of treatment (Barlow et al., 2011; Wilamowska et al., 2010). With regards to delivering treatment, the modular design allows for flexibility whereby modules can be tailored in length to meet the specific needs of patients (Barlow et al., 2011; Wilamowska et al., 2010). The UP is designed to be delivered in 12-18 sessions for 50-60 minutes in length (Barlow et al., 2011). However, as mentioned previously, the length of treatment may vary and the treatment allows for this variation based on the specific patient's presentation of distress (Barlow et al., 2011). The manualized sessions are allocated as follows (Barlow 2011):

1. Module 1 - Motivation Enhancement for Treatment Engagement: 1 Session
2. Module 2 - Psychoeducation and Tracking of Emotional Experiences: 1-2 Sessions
3. Module 3 - Emotion Awareness Training: 1-2 Sessions
4. Module 4 - Cognitive Appraisal and Reappraisal: 1-2 Sessions
5. Module 5 - Emotion Avoidance and Emotion-Driven Behaviors (EDBs): 1-2 Sessions
6. Module 6 - Awareness and Tolerance of Physical Sensations: 1 Session
7. Module 7 -Interoceptive and Situation-Based Emotion Exposures: 4-6 Sessions
8. Module 8 - Relapse Prevention: 1 Session

The main principle across the five core modules is to help patients reduce reactivity to negative emotions and increase emotional regulation skills. The main goals of each of the eight UP modules are outlined below.

Module 1: Motivation enhancement for treatment engagement. The first module, motivational enhancement for treatment engagement, focuses on increasing commitment, motivation and readiness for behavioral change (Barlow et al., 2011; Payne, Ellard, Farchione, Fairholme, & Barlow, 2014; Wilamowska et al., 2010). Many of the interventions in this module are based on Motivational Interviewing (MI) and more specifically on research outlining the adaptation of MI for anxiety and mood disorders (Barlow et al., 2011; Payne et al., 2014; Westra & Dozois, 2002 & 2006; Wilamowska et al., 2010). MI is a counseling approach that was developed by Miller and Rollnick (2002) in which patients are encouraged to engage in behavior change through the exploration and resolution of ambivalence. There are three main goals associated with this module: (a) facilitating the patient's motivation to engage in treatment through committed action (Barlow et al., 2011; Boswell, Bentley, & Barlow, 2015; Wilamowska et al., 2010); (b) outlining the costs associated with not making behavioral changes (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010); and (c) creating treatment goals which are specific, personal, and achievable (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Although there is usually one session wholly dedicated to motivational enhancement, clinicians are encouraged to refer back to the material in this module throughout treatment if and when they notice waning motivation (Wilamowska et al., 2010).

Module 2: Psychoeducation and tracking of emotional experiences. The overarching goal of this module is to work with patients in the service of fostering an understanding of the function of emotions and to facilitate their awareness of when they are having emotional experiences (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Similar to the first module, Module 2 has three main goals. The first goal is to explain the function of emotions and the ways in which positive and negative emotions are necessary, adaptive, and functional (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). The second goal is to

educate patients on the three components of emotional experiences: (a) thoughts (i.e., what people think, including RNTs); (b) behaviors (what people do); and (c) physiological responses (how people physically feel; Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). The third goal is to present the concept of EDBs; chiefly, how they are often automatic and adaptive in nature (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). For example, patients may learn that when they feel fear, their automatic behavioral response is to fight, flee or freeze which is adaptive in the face of true danger.

Module 3: Emotion awareness training. The third module is the first core module in the UP and transitions the patient from motivation and psychoeducation to skill building. The module focuses on taking a nonjudgmental approach toward one's present focused emotional experiences (Barlow et al., 2011; Wilamowska et al., 2010). Patients develop skills to observe and describe their emotional experiences in the present moment (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). These skills allow patients to determine which thoughts, behaviors, and physical sensations are contributing to their distress (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Even though the creators of this therapy (Barlow et al., 2011) do not highlight the similarities between the skills taught in this module and the skills taught in DBT, this module shares many concepts with emotion regulation strategies of observe, describe, non-judgmentally, and one-mindfully employed in Dialectical Behavior Therapy (Linehan, 1993).

Module 4: Cognitive appraisal and reappraisal. The ultimate goal of the fourth module is to increase cognitive flexibility (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Cognitive flexibility is the human ability to adapt cognitive processing strategies to face new and unexpected conditions, both in one's internal and external environments (Barlow et al., 2011). Flexibility in thinking is achieved by (a) highlighting how appraisal of a situation

impacts the response; (b) explaining the interrelationship between thoughts, behaviors, emotions, and physiological responses; (c) identifying thinking patterns (maladaptive thinking traps); and (d) reappraising maladaptive thoughts and generating alternative thoughts. It appears that the interventions in this module draw from concepts and interventions found in Beckian CBT. More specifically, patients are conceptualized as being in distress due to the way in which their perception of a situation influences their mental, emotional, physical and behavioral reactions (Beck, 1979). Moreover, research supports cognitive modification, or identifying dysfunctional thoughts in order to make behavioral change, as being a central mechanism of change in CBT (Lorenzo-Luaces, Keefe, & DeRubeis, 2016).

Module 5: Emotion avoidance and emotion driven behaviors (EDBs). The fifth module (third core module) helps patients to alter set patterns of emotional responding by gaining an understanding of how EDBs may maintain their distress (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). The goal of this module is to help patients identify and counter behaviors that impede exposure to and processing of emotions, including behavioral avoidance (e.g., procrastination and staying in bed), cognitive avoidance (e.g., rumination and worry) and safety behaviors (e.g., rubbing a piece of fabric; Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Similarly, Acceptance and Commitment Therapy (ACT) identifies *experiential avoidance* as a process underlying different psychological disorders such as anxiety and mood disorders through. ACT defines experiential avoidance as the deliberate effort to avoid and/or escape from private events such as affects, thoughts, memories and bodily sensations that are experienced as aversive (Hayes, 2004). Within the UP, EDBs can be conceptualized as a form of experiential avoidance, and thus would function as a class of behaviors that are negatively reinforced, thereby leading to the maintenance of the behavior(s) associated with psychopathology.

Module 6: Awareness and Tolerance of Physical Sensations. This module (fourth core module) creates linkage for the patient between physical sensations and emotional experiences (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). The main intervention in this module is interoceptive exposure. Interoceptive exposure consists of a multitude of experiential exercises that are designed to evoke the same physical sensations that are experienced when a patient is anxious or distressed, with the goal of reducing a patient's conditioned emotional and behavioral response to the physical sensation (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Interoceptive exposure is a technique commonly used in CBT for anxiety disorders, and recent research indicates its efficacy in treating OCD (Blakey & Abromowitz, 2018).

Module 7: Interoceptive and Situation-Based Emotion Exposures. The fifth and final core module targets internal triggers (i.e., emotional and physical reactions) and external triggers (i.e., environmental) (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). In this module, in-vivo and imaginal exposure interventions are added to interoceptive exercises to target physical reactions and emotional and behavioral avoidance, with the goal of increasing tolerance of uncomfortable emotions and allowing new learning to occur (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). These exposure techniques are used in therapies such as prolonged exposure therapy for PTSD (Foa, 2011) and exposure and response prevention for OCD (Franklin & Foa, 2011).

Module 8: Relapse Prevention. During the relapse prevention module, patient goals are reviewed and reinforced and patient progress is discussed (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010). Patients are reminded through psychoeducation about the vacillating nature of emotions, how to identify emotions and maladaptive behaviors, how to

apply the skills learned in therapy in order to mitigate the chance of relapse, and how to respond to relapse if and when it occurs (Barlow et al., 2011; Payne et al., 2014; Wilamowska et al., 2010).

Unified Protocol, Worry and Rumination

UP potentially targets worry and rumination by counteracting experiential avoidance and encouraging behavioral activation. UP hypothesizes it decreases worry and rumination through its core modules, which contain elements of mindfulness and acceptance based therapies (e.g., DBT, ACT), cognitive therapies (e.g., CBT), and behavioral therapies (e.g., ERP). For example, Module 3 focuses on increasing emotional awareness by utilizing mindfulness and acceptance based approaches. Because the modules integrate multiple therapeutic approaches, the patients learn skills that both target a range of unpleasant states and enhance their capacity to implement present moment acceptance when they engage in the maladaptive processes of worry and rumination, emotion dysregulation, intolerance of uncertainty, or over reliance on problem solving. Further, Module 4 emphasizes cognitive restructuring, an intervention which may alleviate some of the symptoms of worry and rumination, including increased cognitive distortions, negative interpretations of the current moment, and negative outlook of the future. Finally, the behavioral interventions utilized in Modules 5 through 7 target the process of fear and the avoidance of emotional experiencing generated by excessive worry and rumination. Thus, by working through the five core modules and by facilitating exposure and interoceptive experiences, a patient learns mindful awareness of their emotional experiences, in addition to identifying and preventing behavioral emotional avoidance. Consequently, the UP interventions may reduce worry and rumination and subsequently impact symptom severity in anxiety and

depressive disorders. However, further research would need to be undertaken to validate whether the theory behind the development of UP can enact concrete and observable changes in thoughts and behaviors.

Review of the Unified Protocol Literature

Extant research on the UP is relatively sparse and recent (within the last 7 years) with only two open pilot trials and two randomized control trials (RCT). Although limited and further validation with replication studies are needed, the data to date are encouraging. The trials, results and limitations are outlined below.

Unified protocol trials. The first UP pilot trial was conducted by Ellard et al., (2010). The investigators tested an early version of the UP in an open trial to determine patient acquisition and implementation of the core skills and to receive feedback on the logical progression of treatment. The sample consisted of 18 heterogeneous patients with a mean age of 30 years old, with diagnoses of MDD, dysthymia, GAD, PTSD, OCD, SAD and panic disorder with agoraphobia (Ellard et al., 2010). At pretreatment, study participants had an average number of diagnoses of 1.94. Patients were then administered extensive pre and post treatment assessments to determine the impact of treatment on clinical diagnoses, symptom severity, and daily functioning (Ellard et al., 2010). Following initial assessment, patients were seen for an average of 13 treatment sessions by six doctoral students with 1-4 years of clinical experience (Ellard et al., 2010). The results indicated that treatment with the UP led to a reduction in scores from pre to post treatment on symptoms of anxiety and depression (Ellard et al., 2010). While symptom reduction was evident post-treatment, symptom severity remained at a clinical level (Ellard et al., 2010). Thus, the results indicated to researchers the need for further treatment refinement (Ellard et al., 2010).

Subsequent to the pilot study, the UP manual was revised to increase patients' awareness, specifically regarding the impact of their thoughts, feelings, and behaviors in the present-moment (Ellard et al., 2010). It was hypothesized that this revision would enhance patients' understanding of their own emotional experiences, which would allow them to increase the exploration of their dysfunctional emotional regulation strategies, and increase acquisition of emotion regulation skills (Ellard et al., 2010). Once the UP protocol revision was complete, a second pilot open-trial was conducted with a sample size of 15 participants, mean age of 29.73 years, who were each seen for approximately 17 sessions (Ellard et al., 2010). In contrast to the first study, participants in this study evidenced a reduction of symptom severity to *below* diagnostic thresholds whereby they no longer met criteria for their respective diagnoses (Ellard et al., 2010). Of note, the results were sustained at 6-month follow-up (Ellard et al., 2010) and comparable to diagnostic specific CBT protocols for anxiety and depression (Butler, Chapman, Forman, Beck, 2006). Importantly, the results of the studies by Ellard et al. (2010) should be interpreted with caution for a multitude of reasons, including the small sample sizes, a lack of cultural diversity (Study 1: 94.4% Caucasian; Study 2: 80% Caucasian), no control groups, recruitment from only one setting (a university center for anxiety and related disorders), and open trials.

Further evaluation of the efficacy of the UP was demonstrated in an RCT comparing the UP to a wait-list control/delayed treatment condition (Farchione et al., 2012). Participants were randomly assigned to one of two conditions: (a) immediate UP treatment, in which they were assessed pre and post treatment and at a 6-month follow-up period, or (b) the wait-list control/delayed treatment condition, in which they were assessed at the beginning and end of the 16-week wait-list period and the end of treatment and at a 6-month follow-up (Farchione et al., 2012). A total of 37 patients participated in the study, 94.2% Caucasian, with a mean age of

29.32, and a maximum of 16 treatment sessions (Farchione et al., 2012). The participants had a primary anxiety disorders diagnosis with comorbid diagnoses across both the anxiety and the depressive disorders (Farchione et al., 2012). The UP treatment followed the same protocol outlined in the second Ellard et al. (2010) study with the addition of motivational interviewing to increase engagement in treatment (Farchione et al., 2012). Results showed clinically significant reduction in symptoms across disorders and decreases in functional impairment were demonstrated in patients in the UP treatment group in comparison to patients in the wait list condition (Farchione et al., 2012). The improvements were maintained at 6-month follow-up, lending further evidence for the UP treatment efficacy (Farchione et al., 2012). Similar to previous studies, this study's main limitations are its small sample size, lack of cultural diversity, and participant recruitment from the same setting as the previous two studies. As a result, generalizability is difficult. Also, in contrast to previous studies, this study included a wait-list condition but not an active treatment comparison, thereby creating the possibility of confounding variables (e.g., therapeutic alliance, creation of a safe space).

The most recent randomized controlled study for the UP treatment evaluated whether the UP is as effective as specific disorder protocols (SDP) in the treatment of principle anxiety disorders and comorbid disorders (Barlow et al., 2017). In this study, 233 patients were assigned to the UP, an SDP, or a waitlist control condition (Barlow et al., 2017). Demographically, the participants were 75.78% Caucasian, 7.62% Hispanic, 7.17% Asian, 6.73% African American, and 2.69% Other, and averaged 31.10 years old. The study consisted of two phases: a maximum 16-week treatment/waitlist phase, and a 6-month follow-up phase (Barlow et al., 2017). To keep the active treatment conditions consistent, the UP dosage was matched to SDP for each principal diagnosis (Barlow et al., 2017). Results revealed equivalent outcomes between the UP and SDPs at post-treatment and at 6 month follow-up for changes in symptom severity. Both protocols

significantly improved the symptom severity of the participants in the study when compared to the wait list control condition (Barlow et al., 2017). Remarkably, the UP condition evidenced significantly less attrition than the SDPs condition. This may be due to the UP modules focus on increasing motivation (Barlow et al., 2017). As in the previous three studies, the limitations within the research continued to point toward limited cultural diversity, age, and recruitment of participants from the same setting.

Further investigations. Building on the RCT by Farchione et al. (2012) and also using data collected from the same participants, Bullis, Fortune, Farchione, and Barlow (2014) examined the durability of effect of treatment during an extended follow-up period. As mentioned, the sample consisted of some of the original participants in the Farchione et al. (2012) study. Bullis et al. (2014) enrolled a total of 15 participants, 11 of whom were from the original immediate treatment and 4 of whom were in the delayed treatment, with an average age of 32.27 years, and 100% Caucasian. The results revealed that symptom reduction was maintained at 18-month post-treatment across a range of anxiety and comorbid disorders, although the effect size was larger at the 6-month follow-up than at the 18-month follow-up (Bullis, et al., 2014). Notably, the results suggest no further gains in symptom reduction past the 6-month follow-up assessment (Bullis et al., 2014). Since this investigation was a follow-up study to the Farchione et al. (2012) study, the limitations from the original study also impacted the current study.

Another follow-up to the Farchione et al. (2012) study was conducted by Sauer-Zavala et al. (2012), who sought to clarify the mechanism of change in the UP with regard to negative emotions. Sauer-Zavala and her colleagues aimed to understand whether the mechanism of change within the UP is due to a reduction in the frequency of negative emotional experiences, or a change in patients' relationship with and ability to tolerate negative emotions when they

occur (Sauer-Zavala et al., 2012). Of note, there is support in the cross-sectional literature that effective responding to negative emotions is more important for psychological health than the frequency in the occurrence of the negative emotions (Sauer & Baer, 2009; Sauer-Zavala et al., 2012; Segal Williams & Teasdale, 2002). While analyzing treatment outcomes, it was discovered that participating in the UP resulted in a reduction in negative emotion reactivity (Sauer-Zavala et al., 2012). More specifically, the data indicated an increase in acceptance and awareness of emotions and a decrease in fear around emotions, as well as a decrease in anxiety sensitivity (Sauer-Zavala et al., 2012). Of interest, a large effect size was found in the frequency of participants' report of negative emotions between pre and post treatment (Sauer-Zavala et al., 2012). Therefore, the results indicate that treatment with the UP reduces both the frequency of negative emotions and patients' relationship and response to negative emotional states (Sauer-Zavala et al., 2012). A possible explanation for the results is that effectively managing and regulating emotions could lead to a decrease in frequency and intensity of negative emotions, which in turn reduces cognitive and emotional avoidance, and the use of control strategies such as worry and rumination (Sauer-Zavala et al., 2012).

Comparable to the two aforementioned follow-up studies of Farchione et al.'s (2012) research, Gallagher et al., (2013) also investigated Farchione et al.'s (2012) data in order to determine the effects of the UP on one's quality of life. Quality of life is defined by the World Health Organization (WHO) as an "individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns" (The WHOQOL Group, 1995, p. 1403). The results of this study indicated that patients reported an overall increase in their day to day functioning (Gallagher et al., 2013). Participants receiving the UP treatment (post treatment and post waitlist) experienced significant improvements in quality of life, while also reporting a reduction in their anxiety and

depressive symptomatology. Interestingly, the domain with the greatest improvement post treatment was associated with self-esteem (Gallagher et al., 2013). The researchers hypothesized that:

Based on conceptualizations of the motivational enhancement, emotional awareness, and situational exposure modules of the UP as fostering development of positive personal resources, such as self-esteem and self-efficacy, we have hypothesized that these therapeutic strategies may exert specific effects on quality of life. (Gallagher et al., 2013, p. 64)

At this point in time, the final study published based on the data collected by Farchione et al. (2012) explored the effects of the UP on two dimensions of temperament, namely, neuroticism/behavioral inhibition (N/BI) and extraversion/behavioral activation (E/BA) (Carl, Gallagher, Sauer-Zavala, Bentley, & Barlow, 2014). The literature posits that high levels of N/BI and low levels of E/BA contribute to the onset, development, overlap, and maintenance of anxiety and mood disorders (Brown & Barlow, 2009). In this study, the post treatment in comparison with the waitlist control group yielded data that reflected decreases in N/BI and increases in E/BA, although the effect size was small and insignificant (Carl, et al., 2014). Additionally, slight losses in E/BA gains were noted at 6-month follow-up (Carl, et al., 2014). Conversely, more stable change was noted in N/BI from post-treatment to 6-month follow-up (Carl, et al., 2014). As can be gleaned from the discussion above, despite an increasing interest in the UP and the process of RNT in the clinical literature, research adopting a truly transdiagnostic perspective on this topic is still sparse. It is important for future research to determine which specific interventions within UP target worry and rumination. These discoveries will lead to a further understanding of the etiology of various disorders and aide in

the implementation of targeted interventions likely to ameliorate the symptoms causing the greatest levels of distress.

Unified protocol group delivery. To date UP has primarily been studied in the context of individual psychotherapy however more recently the protocol is being tested within group formats to extend applicability. The benefits of delivering psychotherapeutic services in a group format include scalability, time and cost efficiency, ability to practice skills by demonstrating and teaching other group members, and interactions among participants that more closely emulate the external environment (Bullis, Sauer-Zavala, Bentley, Thompson-Hollands, Carl & Barlow, 2014), along with the clear benefits of peer support on promoting mental wellness, common among all group-format interventions (Yalom & Leszcz, 2005). The current literature includes one open trial pilot study on the effectiveness of delivering UP treatment in a group format (Bullis et al., 2014). The patients ($n = 11$) completed pre- and post- treatment measures, were randomly assigned to two groups and were then treated with 12, 2-hour weekly sessions of the UP (Bullis et al., 2014). The participants were 90.9% Caucasian and averaged 44.55 years of age. Although all 11 participants were diagnosed with an emotional disorder, eight out of the 11 were diagnosed with at least one additional emotional clinical diagnosis (Bullis et al., 2014). The session structure followed a standard CBT based group format. Generally, a group agenda included reviewing the previous session's material, collaboratively reviewing the current homework, introducing new material and exercises, and then concluding with next week's homework assignment (Bullis et al., 2014). The results of this study revealed a very strong effect on anxiety symptoms, functional impairment, and experiential avoidance and a moderate effect on depression symptoms, and life satisfaction (Bullis et al., 2014). Some of the limitations associated with this study included a lack of randomization, no control conditions, no cultural diversity, no follow-up assessment, and a small sample size.

Although the results of the group delivery appear promising, there were challenges associated with delivering the material in a group format. Firstly, patients who are highly fearful of their emotions may need more direct and individualized intervention by a clinician than can be delivered in a group format (Bullis et al., 2014). Secondly, patients may acquire skills at varying rates making it challenging for the clinician to determine the speed with which to present the material (Bullis et al., 2014). Further studies may help to tease out which types of individuals may be best served by group interventions and help determine optimized speeds of presentation to ensure learning across individuals with varying needs.

Cross-Cultural literature. In reviewing the recent literature on cross-cultural implementation of the UP, to date there exists only one research study on the efficacy of the UP for anxiety and depressive disorders in non-Western populations. This study was an open trial pilot study that examined the outcomes associated with implementing the UP with a Japanese clinical population (Ito, Horikoshi, Kato, Oe, 2016). Seventeen participants with a mean age of 35.18 completed approximately 18 sessions of treatment (Ito et al., 2016). In order to maintain fidelity, the content of material remained consistent and the implementation remained the same as when used in the West, with the exception of translating the therapist manual and the patient workbook into Japanese. Illustrations to the patient workbook were also added in order to assist with the comprehension of certain concepts (Ito et al., 2016). The results showed a significant decrease in anxiety and depressive symptoms, improved functioning, and enhanced quality of life both post-treatment and at three-month follow-up (Ito et al., 2016). This suggests that the UP may be applicable for use in non-Western countries and for emotional disorders (Ito et al., 2016). With regards to limitations to the study, it shares many of the same limitations as in the Ellard et al. (2010) studies. For example, the study is a pilot study rather than a randomized control trial (RCT) and has a very small sample size ($n = 17$), thereby producing a small effect size (Ito et al.,

2016). Nevertheless, this study's findings form the basis for future RCT with larger sample sizes to ensure the stability of treatment effects cross-culturally. Future studies will help enhance our knowledge of what modules of UP may work best for different cultural groups, and what modifications, if any, might be helpful to undertake in cross-cultural applications to ensure cultural congruence and improve symptom reduction.

Recommendations for Future Research

Upon reviewing the existing body of literature on the UP, areas for future focus and next steps for research have become apparent. Since the extant research is sparse, it will be important to conduct more RCTs with larger sample sizes in order to draw more comprehensive conclusions and to generate more confidence in the treatment effects that are found. In addition to increasing sample size, participant demographics need to be expanded to include greater age ranges and representation of diverse cultures to ensure generalizability of the findings. Moreover, future studies will need to consider adaptations of the UP to fit the different cultural backgrounds of patients. In addition to representing cultural backgrounds, future research will need to expand its recruitment pool for study participants. To date, research on the UP has been implemented in a single setting: university centers for anxiety and related disorders. Expanding the settings to include community mental health centers, private practices, veterans administrations, and primary care clinics are indicated. Another avenue for empirical exploration of the UP might be associated with treatment modalities. Most of the existing studies focus primarily on the efficacy of individual therapy. An area of further study might include expanding delivery to groups, telemental health delivery, and internet-based therapy. With regards to study participants, the majority of subjects in the reviewed studies had primary diagnoses of anxiety disorders with comorbid mood disorders; therefore, participants with primary mood disorders with comorbid

anxiety disorders should be included in future research to examine if the studies will yield similar results. Since worry and rumination are transdiagnostic and are implicated in anxiety and mood disorders, there is a need to study, in a more focused and specific manner, the impact of the UP on RNTs. However, because the majority of the abovementioned studies only examined general measures of anxiety, the impact on specific mechanisms and outcomes that characterize different fears (e.g., fears of social situations, or fears of physical sensations) still remains unclear. It will be important for future investigations of the UP to address questions regarding the performance of the UP outside of a research setting, the acceptability of a transdiagnostic treatment conceptualization among non research mental health providers, and the utility and feasibility of integrating the UP into our mental health care system

Conclusion

Overall, a transdiagnostic treatment approach seems positive. Analysis of the results across all studies that reported baseline and post-treatment data showed that the UP leads to large and significant reductions in both anxiety and depression, and moderate improvements in quality of life. Results at short-term follow-up (three to six months after treatment) also suggest that these positive outcomes are maintained following treatment. In addition to positive treatment outcomes, it must not be overlooked that a transdiagnostic protocol is also time and cost saving. Transdiagnostic treatments do not require detailed patient assessments and conceptualizations since the clinician is providing one treatment for a range of condition. The important theory that underlies UP, namely, that a structured intervention can be applied across diagnoses to address common underlying etiology that produces the overt symptoms of an illness; is a highly exciting development in the therapeutic literature and has significant impact for the ongoing fight to reduce stigma related to mental illness in general, as well as the self-stigma that certain specific

diagnostic labels can impose on the mentally ill that leads them to turn away from evidence-based services that can aid them to live a meaningful and productive life. The future of UP and its multitudes of applications should be a priority for upcoming research investigations, and if supported by federal and private funding sources, may help this approach to be utilized more systematically across settings and with individuals with seemingly very different presentations, but who may all ultimately benefit from the techniques of UP.

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APPENDIX A

The Ruminative Response Scale

Dear Colleague,

Please find enclosed a copy of the Ruminative Responses Scale we have been using in much of our research on response styles for depression. For full information on the psychometric qualities of this scale, please see Treynor, Gonzalez, and Nolen-Hoeksema (2003), *Cognitive Therapy and Research*, 27, 247-259. To obtain scores on this scale, simply sum the scores on the 22 items.

I am often asked about cut-offs for determining whether an individual is a “ruminator” or not. We have not established any cut-offs; instead, I believe the appropriate use of this questionnaire is as a continuous measure. If you wish to select groups of “high” or “low” ruminators, I recommend using percentile cut-offs from your own sample (e.g., selecting people who score in the top 33% of your sample as “high” ruminators and people who score in the bottom 33% as “low” ruminators).

The original Response Styles Questionnaire also included Distraction and Problem-Solving subscales. Neither of these subscales has proven reliable or good predictors of depression change over time, so I am no longer distributing them.

Please send me copies of reports of all studies in which you use any of these scales. Good luck in your research.

Sincerely,

Susan Nolen-Hoeksema, Ph.D.
Yale University

Rumination Scale

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you *generally* do, not what you think you should do.

1 almost never 2 sometimes 3 often 4 almost always

1. think about how alone you feel
2. think "I won't be able to do my job if I don't snap out of this"
3. think about your feelings of fatigue and achiness
4. think about how hard it is to concentrate
5. think "What am I doing to deserve this?"
6. think about how passive and unmotivated you feel.
7. analyze recent events to try to understand why you are depressed
8. think about how you don't seem to feel anything anymore
9. think "Why can't I get going?"
10. think "Why do I always react this way?"
11. go away by yourself and think about why you feel this way
12. write down what you are thinking about and analyze it
13. think about a recent situation, wishing it had gone better
14. think "I won't be able to concentrate if I keep feeling this way."
15. think "Why do I have problems other people don't have?"
16. think "Why can't I handle things better?"
17. think about how sad you feel.
18. think about all your shortcomings, failings, faults, mistakes
19. think about how you don't feel up to doing anything
20. analyze your personality to try to understand why you are depressed
21. go someplace alone to think about your feelings
22. think about how angry you are with yourself

APPENDIX B

The Penn State Worry Questionnaire

Patient Name: _____

Date: _____

The Penn State Worry Questionnaire (PSWQ)

Instructions: Rate each of the following statements on a scale of 1 ("not at all typical of me") to 5 ("very typical of me"). Please do not leave any items blank.

| | Not at all typical of me | | | | Very typical of me |
|---|--------------------------------|---|---|---|--------------------------|
| 1. If I do not have enough time to do everything, I do not worry about it. | 1 | 2 | 3 | 4 | 5 |
| 2. My worries overwhelm me. | 1 | 2 | 3 | 4 | 5 |
| 3. I do not tend to worry about things. | 1 | 2 | 3 | 4 | 5 |
| 4. Many situations make me worry. | 1 | 2 | 3 | 4 | 5 |
| 5. I know I should not worry about things, but I just cannot help it. | 1 | 2 | 3 | 4 | 5 |
| 6. When I am under pressure I worry a lot. | 1 | 2 | 3 | 4 | 5 |
| 7. I am always worrying about something. | 1 | 2 | 3 | 4 | 5 |
| 8. I find it easy to dismiss worrisome thoughts. | 1 | 2 | 3 | 4 | 5 |
| 9. As soon as I finish one task, I start to worry about everything else I have to do. | 1 | 2 | 3 | 4 | 5 |
| 10. I never worry about anything. | 1 | 2 | 3 | 4 | 5 |
| 11. When there is nothing more I can do about a concern, I do not worry about it anymore. | 1 | 2 | 3 | 4 | 5 |
| 12. I have been a worrier all my life. | 1 | 2 | 3 | 4 | 5 |
| 13. I notice that I have been worrying about things. | 1 | 2 | 3 | 4 | 5 |
| 14. Once I start worrying, I cannot stop. | 1 | 2 | 3 | 4 | 5 |
| 15. I worry all the time. | 1 | 2 | 3 | 4 | 5 |
| 16. I worry about projects until they are all done. | 1 | 2 | 3 | 4 | 5 |

Scoring the PSWQ

In scoring the PSWQ, a value of 1, 2, 3, 4, and 5 is assigned to a response depending upon whether the item is worded positively or negatively. The total score of the scale ranges from 16 to 80.

Items 1, 3, 8, 10, 11 are reverse scored as follows:

- Very typical of me = 1 (circled 5 on the sheet)
- Circled 4 on the sheet = 2
- Circled 3 on the sheet = 3
- Circled 2 on the sheet = 4
- Not at all typical of me = 5 (circled 1 on the sheet)

For items 2, 4, 5, 6, 7, 9, 12, 13, 14, 15, 16 the scoring is:

- Not at all typical of me = 1
- Ratings of 2, 3, and 4 are not transformed
- Very typical of me = 5

Citation: Meyer TJ, Miller ML, Metzger RL, Borkovec TD: Development and Validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy* 28:487-495,1990

APPENDIX C

IRB Non-Human Subjects Determination Notice

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

July 25, 2017

Katya Naman

Project Title: Worry and Rumination: A Transdiagnostic Approach to Treatment

Re: Research Study Not Subject to IRB Review

Dear Ms. Naman:

Thank you for submitting your application, *Worry and Rumination: A Transdiagnostic Approach to Treatment*, to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). After thorough review of your documents you have submitted, the GPS IRB has determined that your research is **not** subject to review because as you stated in your application your dissertation *research* study is a "critical review of the literature" and does not involve interaction with human subjects. If your dissertation research study is modified and thus involves interactions with human subjects it is at that time you will be required to submit an IRB application.

Should you have additional questions, please contact the Kevin Collins Manager of Institutional Review Board (IRB) at 310-568-2305 or via email at kevin.collins@pepperdine.edu or Dr. Judy Ho, Faculty Chair of GPS IRB at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you continued success in this scholarly pursuit.

Sincerely,



Kevin Collins

Manager, Graduate and Professional Schools (GPS) Institutional Review Board

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Mr. Brett Leach, Compliance Attorney
Judy Ho, Faculty Advisor