Effectiveness of Acceptance and Commitment Therapy for Worry and Rumination

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Psychology

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and ethics procedures and guidelines have been followed.

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Monique Louise Slevison

19 September 2013
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Dissemination Information

Sections of this thesis have been disseminated as conference poster presentations. The candidate has taken primary authorship of the papers and subsequent co-authors have been co-researchers (Sarah Bourchier and Richelle Pinto), supervisors (Dr Keong Yap and Dr Andrea Chester), co-researcher’s supervisor (Dr Mandy Kienhuis) and clinicians from The Melbourne Clinic (Ann Sloss and Lily Shatkhin).

Conference Poster Presentations


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Abstract

Research on psychological interventions for worry and rumination is limited, in spite of the prevalence of these cognitive processes across clinical disorders, and their role in the onset and maintenance of depressive and anxiety disorders in particular. The two studies which comprise this research programme sought to explore the effectiveness of Acceptance and Commitment Therapy in the treatment of worry and rumination as transdiagnostic psychological processes.

In Study One, a case study design was used to explore the outcomes of a group ACT intervention delivered in a community setting for one individual experiencing worry and rumination in the context of anxiety and minor depression. The intervention involved seven 2-hour sessions and one 4-hour session. The participant completed quantitative outcome measures assessing worry, rumination, psychological symptomatology, ACT-related variables, and functional impairment at baseline, post-treatment, and 3-month follow-up. An interview was also conducted with the participant following the completion of the intervention. Data indicated that following the intervention the participant experienced significant reductions anxiety and rumination, which were maintained at 3-month follow-up. There were also improvements in mindfulness and functionality, however these were not maintained. There was no significant change in the participant’s worry, nor was change observed in the ACT constructs of experiential avoidance and valued living. The interview data revealed that the mindfulness and values aspects of the ACT intervention had the strongest and most lasting impact on the participant, and that she used mindfulness to manage her rumination. Furthermore, the interview data highlighted potential differences between worry and rumination, and suggested that an individual’s engagement with ACT may be mediated by their prior experience with CBT.
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In order to expand on the findings observed in Study One and to explore the effectiveness of ACT for worry and rumination with a larger sample, Study Two utilised a within-subjects repeated measures design to explore the research questions amongst individuals with a range of transdiagnostic psychological problems. The intervention was delivered through the outpatient service of a private psychiatric hospital, and consisted of 10 sessions which were 4.5 hours each in duration. Forty individuals (11 male, 29 female; $M = 42.58, SD = 11.45$) completed baseline measures of worry, rumination, psychological symptomatology, ACT-related variables, and quality of life. Eighteen of these participants (6 male, 12 female) completed the same measures at post-treatment, and 4 completed the measures for a third time at 1-month follow-up (1 male, 3 female).

Data revealed that following the intervention there were significant reductions in participants’ worry, rumination, depression, anxiety and stress, experiential avoidance and cognitive fusion, and improvements in participants’ mindfulness, valued living, life satisfaction, personal wellbeing, and functionality. Follow-up data indicated that changes in worry, ACT constructs, and personal wellbeing were maintained, however depression, anxiety and stress increased at 1-month follow-up (although scores remained reduced from baseline levels).

The present research provides preliminary support for the effectiveness of ACT for worry and rumination. Explanations of the clinical implications of the findings in addition to the discrepancies between the two studies are discussed. The author proposes a theoretical model of ACT for worry and rumination along with an intervention framework to better target the application of ACT in the treatment of these cognitive processes.
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Chapter 1. Introduction and Overview

Worry and Rumination

Worry and rumination are cognitive processes which are closely implicated in the onset and maintenance of a range of psychological disorders (Andrews & Borkovec, 1988; Holaway, Rodebaugh, & Heimberg, 2006; Nolen-Hoeksema, 2000; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Papageorgiou, 2006; Purdon & Harrington, 2006; Siegle, Moore, & Thase, 2004; Teasdale et al., 2000; Watkins et al., 2007; Watson, 2005). Worry involves anxious apprehension for future negative events and catastrophic thinking about potential outcomes (Barlow, 2002). While previously viewed as a symptom of anxiety, worry is now seen as an important construct in its own right (Borkovec, 1985; Purdon & Harrington, 2006).

Ruminative thought is focused on the causes and consequences of internal states, such as mood, and external states, such as problems (Kuhl, 1981; Nolen-Hoeksema et al., 2008). Rumination can have adaptive, goal-oriented functions and is not necessarily aversive (Carver & Sheier, 1982, 1990, 1998; Martin & Tesser, 1996; McLaughlin, Borkovec & Sibrava, 2007), however this construct is generally examined in the context of negative mood, where it is seen as involving repeatedly and passively focusing on the symptoms of distress, in addition to themes of loss, self-worth and meaning (Nolen-Hoeksema & Morrow, 1991). In attempting to understand the function of worry and rumination, researchers have suggested that these processes operate to allow individuals to avoid emotional distress by distracting them with cognitive-verbal activity (Borkovec, 1994; Borkovec et al., 1998; Giorgio et al., 2010). An avoidance model of worry and rumination has also been supported empirically (Borkovec and Hu, 1990; Borkovec, Lyonfields, Wiser, & Deihl, 1993; Cribb, Moulds, & Carter, 2006; Delgado, et al., 2009; Wells & Papageorgiou, 1995).
The role of worry and rumination in a range of psychological disorders is increasingly being recognised. Heightened levels of repetitive negative thinking are present in a large number of Axis I disorders (Ehring & Watkins, 2008), suggesting that worry and rumination are transdiagnostic processes prevalent across diagnostic categories. Worry and rumination have been identified as risk factors for multiple psychological disorders (Harvey, Watkins, Mansell, & Shafran, 2004), and have been linked to mood and anxiety disorders in particular. Throughout the literature, worry has been most closely associated with anxiety; however there is also research to suggest that worry is also associated with depression (Andrews & Borkovec, 1988; Brown, 2001; Starcevic, 1995, cited by Papageorgiou, 2006). Similarly, while researchers have traditionally focused on the relationship between rumination and depression (Teasdale et al., 2000; Watkins, 2008), it is now known that rumination is present in the anxiety disorders, and has a unique role in mixed depression anxiety presentations (Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, 2000;Watson, 2005).

In light of their role in the onset and maintenance of emotional disorders, it is important to identify effective treatments for pathological forms of worry and rumination. Researchers have recognized that repetitive negative thinking may be a promising target in the treatment of depression and anxiety (Topper, Emmelkamp, & Ehring, 2010). At present, however, the research literature on effective clinical interventions for worry and rumination is small and inconclusive. Common to interventions which have shown to be effective in treating worry and rumination is a focus on the process-related rather than content-related aspects of these constructs, with intervention efforts aimed at shifting attention away from maladaptive cycles of repetitive negative thought and onto adaptive action, as opposed to attempting to change or eliminate cognitive content. In light of this, a psychological intervention which may be effective in the treatment of worry and rumination is Acceptance
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and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). ACT is an acceptance and mindfulness-based therapy, which has been found to be efficacious in the treatment of depressive and anxiety disorders, in addition to transdiagnostic psychological problems (e.g. Arch et al., 2012; Clarke et al., 2012; Eifert et al., 2009; Forman et al., 2007; Lappalainen et al., 2007; Roemer & Orsillo, 2007).

**Rationale and Aims**

There is a clear need for the establishment of effective, empirically-supported psychological interventions for worry and rumination, and there are strong theoretical reasons for exploring the application of ACT in the treatment of these cognitive processes. ACT is highly relevant to the treatment of worry and rumination, as conceptualisations of these constructs as mechanisms of experiential avoidance are theoretically consistent with the ACT model of psychopathology. Furthermore, ACT encompasses a number of the therapeutic components which individually have been found to be effective in reducing worry and rumination. Researchers have highlighted the relevance and potential value of treating worry and rumination with ACT (Arch and Craske, 2008; Borkovec, 2002; Roemer & Orsillo, 2002; Twohig, 2012), however this has not previously been explored empirically. Therefore, the present research aims to contribute to the body of literature on worry and rumination interventions, in addition to the empirical research on ACT, by exploring whether ACT is a viable psychological intervention for pathological worry and rumination.

This thesis is structured in the following way. The first part of this document (chapters two to five) will establish a rationale for the application of ACT to worry and rumination by reviewing theory and research pertaining to these constructs. Chapter One began by introducing worry and rumination and outlining the important characteristics and theories of these cognitive processes. Chapter Two will review the empirical research on
psychological interventions for worry and rumination, highlighting the need to improve upon the current treatment options, and will suggest ACT as a viable option for the treatment of these processes. Chapter Three will then provide a detailed theoretical outline of ACT, and will review the current body of research on ACT for depression, anxiety, and transdiagnostic psychological problems, in order to establish the empirical status of ACT. Following this, Chapter Four will integrate the previous chapters by presenting a rationale for the application of ACT to the treatment of worry and rumination. Chapters Six and Seven are focused on the empirical examination of the central argument of the thesis, through studies One and Two. Finally, Chapter Eight will summarise the findings of both studies, outlining their clinical implications and suggesting directions for future research.
Chapter 2. Worry and Rumination: Definitions and Theory

Chapter Overview

This chapter provides an overview of the theory and research on worry and rumination. The chapter begins by reviewing the definitions, characteristics and measurement of worry and rumination as individual constructs. The theory on worry and rumination will then be integrated via an outline of the relationships between these cognitive processes, and their similarities and differences will be highlighted. The second part of this chapter will focus on the role of worry and rumination in psychopathology, emphasizing the transdiagnostic nature of these concepts and their prevalence across a range of psychological disorders, namely anxiety and depression. The final part of the chapter will review the theories of worry and rumination which have been suggested to explain the occurrence and function of these constructs. Particular attention will be given to avoidance models of worry and rumination, and the growing body of empirical support for these theoretical accounts.

Definitions and characteristics of worry and rumination

Worry and rumination are perseverative, repetitive, self-focused cognitive processes, which have been closely implicated in the onset and maintenance of psychological disorders throughout the empirical literature (Andrews & Borkovec, 1988; Holaway et al., 2006; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2008; Papageorgiou, 2006; Purdon & Harrington, 2006; Siegle et al., 2004; Teasdale et al., 2000; Watkins et al., 2007; Watkins, 2008). While worry and rumination have unique features, they also have significant commonalities, so much so that new research suggests that there may be a single construct representing negative thought (Ehring & Watkins, 2008).
Worry.

The phenomenon of worry has become increasingly of interest to researchers since the 1980s. Prior to this time, worry was viewed as merely a symptom of anxiety, as opposed to a key construct of interest in its own right (Purdon & Harrington, 2006). However, based on Borkovec and colleagues’ pioneering research (Borkovec, 1985; Borkovec, Robinson, Pruzinzky, & DePree, 1983), worry is now viewed as the cognitive component of anxiety, intrinsically related to the behavioural and physiological components, which may actually play a causal role in the onset of anxiety. As a consequence of Borkovec’s theory and research on worry, it is recognized that worry cannot simply be treated in the same way as anxiety, and interest in understanding this phenomenon has grown rapidly.

A widely accepted definition of worry offered by the pioneers of research in the area of worry is that it 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 et al., 1983, p.10).

More recent conceptualizations of worry have extended this definition by incorporating individuals’ reports of what they do when they worry. Worry is now also commonly described as “anxious apprehension” for future, negative events (Barlow, 2002), which involves questions of ‘What if…?’ and catastrophic thinking about future outcomes and potential threats. Worry is vague rather than concrete in nature, and verbal rather than imaginal in form (Purdon & Harrington, 2006). Borkovec and colleagues (1983) propose that worry is a predominately verbal activity, such that when we worry, we are effectively talking to ourselves about hypothetical negative, threatening future events. Borkovec and Inz (1990)
found empirical support for the verbal nature of worry in that when individuals with generalized anxiety disorder (GAD) – the psychological disorder with which worry is most closely associated – and non-clinical controls were exposed to either a worry or self-relaxation induction, nonanxious controls reported little thought and mostly positive imagery during relaxation, while GAD participants reported equal amounts of thoughts and images, both of which were negatively valenced. Furthermore, when participants were asked to worry about a current situation, both groups experienced a clear predominance of negative thought over images.

In order to better understand worry and why it occurs, researchers have examined the occurrence of worry empirically. While the majority of empirical evidence on worry is based research with nonanxious control groups (Holaway et al., 2006), this research provides an insight into what actually occurs when people worry, how often they worry, and what specifically they worry about. In one of the few direct explorations of the phenomenology of non-pathological worry, Tallis, Davey, and Capuzzo (1994) asked a mixed sample of 128 university students and working adults to report how often they worry, and how long their worry episodes last. Thirty eight percent of the sample reported worrying at least once per day; 19.4% reported worrying once every 2-3 days; 15.3% reported worrying about once a month; and 27.3% were unclear. Furthermore, 27% of the sample indicated that their worries lasted less than one minute, 38% described a typical worry duration of 1-10 minutes, and the remainder reported longer durations of worry. Participants reported that their worries commonly occurred in response to impending matters, such as upcoming events or interpersonal interactions, with the most commonly cited worry topics being competence at work, academic performance, health issues, financial circumstances, and intimate relationships. It appears that for the most part, normal worry is thought to take on a problem-
solving process: Szabó and Lovibond (2002) found that 48% of naturally occurring worry episodes reflected a problem-solving process, and 17% primarily involve the anticipation of negative outcomes. Recent research suggests that normal and pathological worry represent opposite ends of a continuum, rather than discrete constructs (Ruscio, Borkovec, & Ruscio, 2001). In light of this finding, Ruscio and colleagues suggest that theory and research on worry should be broadened to include an exploration of the causal and maintenance factors associated with varying levels of worry severity and associated disturbances, rather than simply focusing on worry extremes and the presence or absence of pathological worry.

The relative consistency in conceptualizations of worry throughout the literature is reflected in the consistency in the measurement of worry. While there are a number of psychometric measures of worry, the bulk of the empirical research on the subject has relied on the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is designed to assess the pervasiveness, excessiveness and uncontrollable nature of worry, and has been used with both clinical and non-clinical populations, in research and clinical contexts (Molina & Borkovec, 1994; Startup & Erickson, 2006). The PSWQ correlates significantly with anxiety and depression as measured by the State Trait Anxiety Inventory (STAI; Spielberger, 1983) and the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) respectively. Other measures of worry include the Worry Domains Questionnaire (WDQ; Tallis, Davey & Bond, 1992) which measures of the content of worry; and the Anxious Thoughts Inventory (AnTI; Wells, 1994), a multi-dimensional measure of worry aimed at distinguishing between content domains of worry and non-metacognitive and metacognitive concerns.
Rumination.

In comparison to worry, the literature on rumination is far less unified and consistent in its definitions of this concept. Researchers have offered a diverse array of alternative accounts of rumination, some of which conceptualise rumination as an adaptive process, and others which see rumination as a negative and unhelpful construct which is associated with psychological distress. A definition of rumination which cuts across all of the different theories of this construct is that it is a form of repetitive, analytical and self-focused thought which involves thinking about the causes and consequences of internal states, such as mood, and external states, such as problems (Kuhl, 1981; Nolen-Hoeksema et al., 2008).

A key aspect of the diversity in conceptualisations of rumination is that researchers have focused on both the positive and negative functions of this construct. According to various theorists, rumination serves adaptive, goal-oriented functions. Martin and Tesser (1996) see rumination as a generic term, involving repetitive thoughts around a discrepancy between the individual’s current state and desired goals or outcomes, which serves the function of facilitating progress towards goals. Grounded in control theory (Carver & Sheier, 1982, 1990, 1998), this conceptualization is known as global rumination, and is supported by a body of literature linking rumination with goal discrepancy (see Watkins, 2008). Other positive accounts of rumination have described rumination as the tendency to think about a distressing event in order to recover from the event (cognitive processing theory of rumination, Horowitz, 1986); and as a way of searching for meaning in relation to negative experiences (Fritz, 1999). According to Kuhl’s (1981, 1994) theory, rumination is one aspect of a broader impairment in control called “State Orientation”, which involves a pre-occupation with thinking about alternative plans and analysis and evaluations of past successes and failures.
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For the most part, however, the literature has generally focused on rumination as a maladaptive cognitive process associated with negative mood (Rippere, 1977). The conceptualization of rumination that has received the most empirical attention is based on the Response Styles Theory (Nolen-Hoeksema & Morrow, 1991), which suggests that rumination is a mode of responding to distress that involves repeatedly and passively focusing on the symptoms of distress and the possible causes and implications of these symptoms. Chains of ruminative thought involve themes of personal loss and failure, which are characterized by ‘Why’ type questions, for example, ‘Why did it happen to me?’ and ‘Why do I feel so depressed?’ (Papageorgiou, 2006). According to the Response Styles Theory, rumination exacerbates and prolongs distress by enhancing the effect of depressed mood on thinking, such that individuals draw on their negative cognitions and memories (which are initially activated by depressed mood) to understand their current circumstances (Nolen-Hoeksema & Davis, 1999). According to the theory, rumination perpetuates depression by interfering with effective problem solving and instrumental behavior, as ruminative cognitions are pessimistic and fatalistic, and eventually lead to a loss of social support (Nolen-Hoeksema & Davis). Nolen-Hoeksema and colleagues use the term depressive rumination to describe this phenomenon.

The diversity in accounts of rumination creates challenges in terms of furthering research and knowledge in this field. As a consequence, researchers have attempted to integrate the different theories of rumination in the aim of achieving a more unified understanding of this construct (McLaughlin et al., 2007; Treynor, Gonzalez & Nolen-Hoeksema, 2003). For example, it is now widely accepted that not all rumination is associated with negative outcomes, and researchers have differentiated maladaptive, negative ruminative thought content from the less emotional ‘reflection’, which does not appear to be
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associated with negative consequences (Siegle, 2008). In a psychometric analysis of the Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991), a self-report measure of rumination, Treynor et al. found support for a two factor model of rumination, comprised of ‘reflective pondering’, which involves analyzing and trying to understand situations and one’s thoughts and feelings, and ‘brooding’ which is associated with a repetitive and passive focus on one’s negative feelings, and is linked to depression. In another attempt to integrate approaches to rumination, McLaughlin et al. suggest that a way of amalgamating theories of global and depressive rumination is that global rumination may represent the foundation of the depressive cognitive process from which depressive rumination emerges. Thus, points of agreement within the field are that rumination may represent a relatively innocuous psychological process, but that in certain circumstances this construct can be associated with negative outcomes, including depression.

Due to the diversity in conceptualisations of rumination, it has been noted that it is important for researchers to make the definition of rumination they are using explicit, and to ensure that the measurement of rumination is consistent with this definition (Siegle, 2008; Treynor et al., 2003). Much of the research aimed at furthering our understanding of rumination has been based on the Response Styles Theory’s operationalization of rumination, and has utilized the Ruminative Responses Scale of the Response Styles Questionnaire (RRS; Nolen-Hoeksema & Morrow, 1991). Research has noted significant support for the Response Styles Theory of rumination, a detailed review of which is presented by Nolen-Hoeksema et al. (2008).

To summarise the findings of studies which have utilized the RRS to measure rumination, the research shows that the tendency to ruminate is relatively stable in individuals; that people who ruminate in the context of depressed mood are more negatively-
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biased and self-critical in their cognitions about the past, present, and future than those who do not have depressed mood; that rumination leads to impaired problem-solving abilities and the ability to take adaptive action; and that the tendency to ruminate is associated with a loss of social support, as ruminators have been found to behave in ways that are counterproductive to positive relationship with family and friends (see Nolen-Hoeksema et al., 2008). Importantly, while much of the research has utilized the RSS, scores on the RSS have been found to correlate significantly with scores on alternative measures of negative rumination, including the Revised Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979), Rumination on Negative Thoughts (Papageorgiou & Wells, 1999), Rumination on a Negative event (Luminet, Rime, & Alvarez, submitted), Multidimensional Rumination Questionnaire (Fritz, 1999), Emotional Control Questionnaire (Roger & Najarian, 1989), and Thought Control Questionnaire (Wells & Davies, 1994). The correlation between these measures of rumination suggests that while research findings on rumination have generally been based on the RRS, the relationship between rumination and depression has been consistently found across a range of alternative measures, which is indicative of the validity and reliability of this relationship.

The relationship between worry and rumination.

Rumination and worry have been linked in the research, and researchers have noted their important similarities. As cognitive processes, rumination and worry are comparable in nature in that they are both repetitive, perseverative, self-focused forms of thought (Nolen-Hoeskema et al., 2008). They have also been found to share a number of parallel features: they are both associated with concerns about control and uncertainty; they represent an abstract, over-general thinking style; are associated with cognitive inflexibility and difficulty switching attention from negative stimuli; are linked to adverse consequences such as
performance deficits, difficulties in concentration and attention, poor problem-solving, and inadequate solution implementation; and are implicated with the onset and exacerbation of depression and anxiety (see Nolen-Hoeksema et al., for a review of the research). Given their significant common features, it is unsurprising that rumination and worry are significantly correlated with each other (Fresco, Frankel, Mennin, Turk, & Heimberg, 2002; Muris, Roelofs, Meisters, & Boomsma, 2004; Segerstrom, Tsao, Alden, & Craske, 2000; Watkins, 2004; Watkins, Moulds, & Mackintosh, 2005). Fresco et al. submitted 784 undergraduate students’ scores on self-report worry and rumination scales (PSWQ and RSQ) to factor analysis, and found a strong positive correlation between the worry factor, ‘Worry Engagement’, and the rumination factor, ‘Dwelling on the Negative’, ($r = .46$). Muris and colleagues examined the relationships between self-reported rumination (Children’s Response Style Scale; CRSS; Ziegert & Kistner, 2002) and worry (Penn State Worry Questionnaire for Children; PSWQ-C; Chorpita et al., 1997) amongst a sample of nonclinical adolescents, and found that the CRSS rumination and PSWQ-C worry were substantially and significantly correlated ($r = .55$). Furthermore, Segerstrom et al.’s (2000) examination of the relationships between rumination and worry amongst a sample of 110 students and 40 patients with major depression revealed that global rumination, depressive rumination and worry were all significantly correlated, with the highest correlation occurring between worry and global rumination (students, $r = .52$; patients, $r = .55$).

Worry and rumination, however, also differ in a number of important ways, and represent statistically distinct constructs in that they load on different factors (Fresco et al., 2002; Hong, 2007; Muris et al., 2004; Segerstrom et al., 2000). Firstly, it is generally accepted that while ruminative thought is typically focused on past events and current internal states, worry is more concerned with the future (McLaughlin et al., 2007; Papageorgiou & Wells, 1999;
Watkins et al., 2005). Rumination and worry may also differ in terms of the content of cognition they give rise to: Nolen-Hoeksema et al. (2008) suggest that while rumination is concerned with themes of loss, self-worth and meaning, worry thoughts revolve around the anticipation of threat. Nolen-Hoeksema and colleagues summarise research which suggests that the drivers of rumination and worry are also distinct: whereas rumination is motivated by the need to understand events, gain insight and solve problems, worry is motivated by the need to prepare for the future. Researchers have also theorized about the function of rumination and worry, which will be discussed in detail later in this chapter.

At an intuitive level it is not difficult to see how rumination and worry would often co-occur in the same individual, in the same situation. As a very basic example, an individual’s rumination about current symptoms of depression may rapidly transform into worry about whether they will continue to have depression for a long time in the future. Similarly, someone with anxiety may worry about an event in the future, in addition to ruminating over how their anxiety has affected them in past social situations. In these examples it is evident that worry and rumination are similar cognitive processes that are likely to fuel and maintain one another. In fact, the overlapping features between worry and rumination have prompted some researchers to theorise about repetitive negative thinking as a transdiagnostic process (Ehring & Watkins, 2008). Ehring and Watkins suggest that heightened levels of repetitive negative thinking are present in a large number of Axis I disorders, and are characterized by the same process across disorders which is applied to disorder-specific content. Furthermore, McLaughlin, Sibrava, Behar, & Borkovec (in press) argue that worry and rumination are comparable in that they are generative of each other, and are both likely to occur and interact with each other during a negative mood state.
The role of worry and rumination in psychopathology

Research has implicated rumination and worry in a number of psychological disorders. Worry and rumination have been linked closely with mood and anxiety disorders, with researchers increasingly acknowledging the key role these cognitive phenomena play in the onset, exacerbation, perpetuation, and recurrence of depressive and anxious symptomatology. Consistent with the frequent comorbidity between anxiety and depression, research suggests that worry and rumination occur in both types of high-prevalence psychological disorders.

Worry and psychopathology.

Throughout the literature, worry has been linked with a host of negative psychological implications. In one of the first studies on the characteristics and processes of worry, Borkovec et al. (1983) found that self-labelled worriers were more anxious, depressed and hostile than non-worriers. Experimental inductions of worry have been shown to increase negative intrusive thoughts in the short term (York, Borkovec, Vasey, & Stern, 1987), in addition to anxiety and depression in non-clinical samples (Andrews & Borkovec, 1988). Worry has also been found to affect the process of recovery from stressful and anxiety-provoking events (Wells & Papageorgiou, 2006).

Undoubtedly, the negative correlate of worry most closely studied by researchers is anxiety. Throughout the literature on anxiety, worry and anxiety have been inextricably linked, and worry is a feature of most of the anxiety disorders (Barlow, 2002). The anxiety disorder most closely aligned with worry is generalized anxiety disorder (GAD). The hallmark feature of GAD is excessive, uncontrollable worry, which is present across all areas of life, and results in disruption to life and clinically significant distress (American Psychiatric Association, 2000). GAD is a highly prevalent disorder associated with a high
degree of impairment, and it typically has a chronic and unremitting course (Holaway et al., 2006). Research comparing individuals with GAD and nonanxious controls has revealed that individuals with GAD spend more time worrying, report more worry topics, worry more about miscellaneous topics, and perceive themselves as having significantly less control over their worries than their nonanxious counterparts (Holaway et al.). There is high comorbidity between GAD and other anxiety disorders. Amongst a large, clinical sample of 1,127 individuals, Brown, Campbell, Lehman, Grisham, and Mancill (2001) found that 20% of the individuals with diagnosis of either specific phobia, obsessive compulsive disorder (OCD), posttraumatic stress disorder (PTSD), or panic disorder with agoraphobia were also diagnosed with GAD. The comorbidity rate between GAD and panic disorder was even higher at 33%.

Even aside from comorbidity with GAD, worry is a key symptom in the anxiety disorders. A key criterion of panic disorder is worry about the implications of the panic attack or its consequences (APA, 2000). Furthermore, individuals with panic disorder worry about when their next panic attack will occur, and whether they will be able to cope with it (Purdon & Harrington, 2006). Worry is also a component of social anxiety, in that sufferers worry about upcoming social and performance situations, whereby individuals anticipate embarrassing themselves in public (Papageorgiou, 2006). In health anxiety, worry occurs over the consequences of not taking further medical action, and about the cause of certain symptoms (Purdon & Harrington, 2006). Researchers have proposed that worry is a key perpetuating feature of OCD, and is related to checking and doubting in particular (Tallis & De Silva, 1992). Worry may be used by sufferers of OCD to manage anxiety over distressing thoughts (Freeston et al., 1994). Finally, worry occurs in PTSD in the form of worry about experiencing intrusive symptoms such as flashbacks and nightmares, or worry about being
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exposed to trauma-related stimuli (Purdon & Harrington). There is strong evidence to suggest that worry predicts both anxious and depressive symptomatology in individuals with PTSD (e.g., Ehlers, Mayou, & Bryant, 1998; Holeva, Tarrier, & Wells, 2001; Mayou, Ehlers, & Bryant, 2002; Murray, Ehlers & Mayou, 2002, cited by Papageorgiou, 2006).

There is research to suggest that worry may also play a role in depression. Andrews and Borkevec’s (1988) induction of worry with normal participants elicited almost equivalent amounts of both anxiety and depression. Also, worry has been found to be elevated in individuals with depression (Starcevic, 1995, cited by Papageorgiou, 2006). In Brown et al.’s study (2001), 25% of individuals with major depressive disorder and 14% of individuals with dysthymia also suffered from GAD.

Rumination and psychopathology.

Over the last 10 years in particular, rumination has emerged as a key concept in psychopathology (Siegle, 2008), and has been linked to depression, anxiety, eating disorders, alcohol use disorders, pain disorders, and other physical conditions (Conway, Csank, Holm, & Blake, 2000; Fritz, 1999; Garnefski, Legerstee, Kraaij, van den Kommer, & Teerds, 2002; Gracie et al., 2006; Nolen-Hoeksema 2000; Nolen-Hoeksema and Harrell 2002; Tremblay et al., 2008). Correlates of rumination, which are implicated in a range of psychological disorders, include maladaptive coping styles including negative attributional styles, dysfunctional attitudes, hopelessness, pessimism, self-criticism, low mastery, dependency, sociotropy, neediness, and neuroticism (see Nolen-Hoeksema et al., 2008 for a detailed review).

The majority of research has consistently supported the existence of a relationship between rumination and depression. In a recent review, Watkins (2008) found that across numerous studies utilizing different populations, different measures, and different study
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designs, rumination predicted both the onset and maintenance of depression. For example, rumination predicted depression in studies with children (Abela et al., 2002), adolescents (Burwell & Shrink, 2007), undergraduate students (Butler & Nolen-Hoeksema, 1994; Calmes & Roberts, 2007; Ciesla & Roberts, 2007), gay males whose partners had recently died of HIV AIDS (Nolen-Hoeksema et al., 1997), patients with Major Depressive Disorder (after controlling for baseline symptoms; Raes, Hermans, Williams, Byers, et al., 2006) patients with Seasonal Affective Disorder (Rohan et al., 2003), and never depressed community members (Nolen-Hoeksema, 2000). This predictive relationship was observed across a range of different measures, including the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991), the Rumination to Sadness Scale (Raes et al., 2006), the Emotion Control Questionnaire – Rehearsal subscale (Rector & Roger, 1996), the Stagnant Deliberation and Outcome Fantasy subscales on the Measure of Mental Anticipatory Processes (MMAP; Feldman & Hayes, 2000), in addition to self-report (Nolen-Hoeksema, Morrow, & Fredrickson, 1993) and interview measures (Nolen-Hoeksema et al., 1997). Finally, rumination was found to predict the onset and maintenance of depression across the prospective longitudinal studies discussed, in addition to experimental studies (e.g. (Lavender & Watkins, 2004; Lyubomirsky & Nolen-Hoeksema, 1995; Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema & Morrow, 1993; Watkins & Teasdale, 2001), where rumination inductions lead to increases in participants’ negative affect. The fact that rumination was found to predict the onset and maintenance of depression across a diverse range of samples, measures and designs provides strong convergent evidence for the role of rumination in the development and perpetuation of depression.

As previously discussed, Nolen-Hoeksema and colleagues (2008) suggest that rumination exacerbates depression by enhancing the effect of negative mood on thinking, interfering with problem-solving, preventing instrumental behaviour, and eroding social
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support. Siegle et al. (2004) found that in a survey of 171 individuals incorporating seven
different measures of rumination, participants who were depressed ruminated more than
individuals with a physical illness (lupus), who ruminated more than healthy adults.
Rumination was consistently associated with dysphoria across measures, despite the fact that
some measures were not intended to measure depressive symptoms, suggesting the presence
of a moderately strong relationship between rumination and depressive symptomatology.

Research on treating recurrent depression strongly suggests that rumination plays a
key role in relapse following a depressive episode and future recurrence of depression.
Watkins and colleagues (2007) suggest that rumination plays a key role in residual depression
as it is a common residual symptom, is associated with less responsiveness to both
medication and cognitive behaviourial therapy (CBT) interventions, and prospectively
predicts the onset, severity and duration of depression. Watkins et al. targeted the treatment
of rumination in a case study of Rumination-Focused CBT with 14 individuals with residual
depression. Following participation in a 12-week intervention that explicitly focused on
ameliorating rumination, 50% of individuals achieved full remission from depression.

Teasdale et al. (2000) suggest that the people who experience major depressive
disorder (MDD) are vulnerable to relapse/recurrence of this disorder due to repeated
associations between depressed mood and the patterns of negative, hopeless thinking which
occur during episodes of major depression. According to this model, rumination is an
intrinsic factor in the perpetuation of depressive episodes. Furthermore, Teasdale and
colleagues suggest that individuals who have recovered from MDD differ from individuals
who have never had depression in the pattern of thinking they experience that is activated by
dysphoria (i.e. depressive rumination). By targeting this pattern of thinking – rumination –
through mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002),
Teasdale et al. found that amongst a sample of 145 recently recovered depressed patients, relapse/recurrence of depression was significantly reduced in patients with 3 or more previous episodes of MDD. This study suggests that rumination is a central component of chronic depression, and that addressing this cognitive construct has the potential to minimize the occurrence of future episodes of depression. A key limitation of this study, however, is that while the authors viewed rumination as fundamental to relapse and recurrence of MDD, this construct was not included as an outcome measure. Therefore, it is difficult to determine whether MBCT led to a reduction in rumination, and whether this was responsible for the reduced rate of depression relapse/recurrence.

While the evidence that rumination is associated with depression is strong, the causal direction of this relationship remains ambiguous, and it is unclear what accounts for the relationship between rumination and depression. Siegle et al. (2004) question whether rumination plays a causal role in cognitive aspects of depression (as suggested by Lyubomirsky, Kasri, & Zehm, 2003, and Sposojevic & Alloy, 2001), or if it is the negative thinking and self-focus produced by depression that leads to rumination (as hypothesized by Ingram, 1990). Alternatively, the authors suggest that it is possible that the same neural mechanisms in the brain are responsible for both rumination and depression. The studies described above (Teasdale et al., 2000; Watkins et al., 2007) show that there is a relationship between rumination and depression, however the results do not provide insight into whether it is rumination or depression that comes first. There are different theoretical and empirical perspectives on this issue. The Response Styles theory (Nolen-Hoeksema & Morrow, 1991) views rumination as a response to depressed mood (thus necessitating the presence of depressed mood before the onset of rumination), and there is some evidence to support the hypothesis that among depressed individuals, rumination prolongs and exacerbates depressed
mood, whereas distraction improves mood (Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema & Morrow, 1993). Conversely, however, more recent longitudinal research by Nolen-Hoeksema (2000) revealed that in a large community sample, rumination scores at time 1 predicted changes in depression one year later at time 2. This research suggests that rumination may in fact play a causal role in depression. It appears, therefore, that the present body of research on rumination and depression cannot provide an account of the exact nature of the relationship between rumination and depression. As such, Papageorgiou & Siegle (2003) suggest that further research on rumination is required in order to aid our understanding of mechanisms of depression as well as aspects of its onset, maintenance, and recurrence.

While the majority of the research has primarily looked at the relationship between rumination and depression, recent evidence suggests that the tendency to ruminate also occurs in individuals suffering from anxiety disorders (e.g. Clark & Wells, 1995; Rapee & Heimberg, 1997; Ehlers, Mayou, & Bryant, 1998; Ehlers & Steil, 1995; Nolen-Hoeksema, 2000; Nolen-Hoeksema & Morrow, 1991). This is not surprising, given the frequent comorbidity between depressive and anxiety symptoms (for reviews, see Mineka, Watson, & Clark, 1998; Hughes, Alloy, & Cogswell, 2008). Longitudinal prospective studies have found that people prone to rumination have higher levels of general anxiety and posttraumatic stress symptoms (Blagden & Craske, 1996; Fritz, 1999; Nolen-Hoeksema; Nolen-Hoeksema & Morrow; Schwartz & Koenig, 1996; Segerstrom et al., 2000), and rumination has been directly related to post-traumatic stress disorder (Ehlers et al; Ehlers & Steil). Rumination has also been found to play a role in social anxiety, where it involves repetitive thoughts about a recent social interaction, and is thought to contribute to social anxiety (Clark & Wells; Rapee & Heimberg). In large scale longitudinal study by Nolen-Hoeksema mentioned above, 1132
participants from a community sample completed questionnaires based on their depressive and anxiety symptoms, as well as their engagement in rumination (using the Ruminative Responses Scale of the Response Styles Questionnaire, Nolen-Hoekeisma & Morrow). Participants completed the same questionnaires after a one-year interval, and a longitudinal regression revealed that Time 1 rumination was equally strong in predicting changes in anxiety symptoms as it was in predicting changes in depressive symptoms. In addition, Nolen-Hoekeisma suggests that a ruminative response style may be particularly characteristic of people with mixed anxiety/depressive symptoms, as rumination was highest amongst individuals with mixed anxiety/depression. Thus, this research suggests that rumination may play a key role in the onset and maintenance of anxiety as well as depression, and that individuals with both anxious and depressive traits may be prone to rumination. The notion that rumination has a particularly significant role in the overlap between depressive and anxious symptoms was also found by Hughes et al., (2008).

In addition to depression and anxiety, rumination has been associated with a range of negative outcomes in the literature, including binge drinking and/or symptoms of alcohol abuse over time (Nolen-Hoekeisma & Harell, 2002; Nolen-Hoekeisma & Larson, 1999), bulimia nervosa (Nolen-Hoekeisma, Stice, Wade, & Bohon, 2007), lower behavioural inhibition (King, Emmons, & Woodley, 1992), increased fear (Davey, 1995), higher levels of aggression (Collins & Bell, 1997), impaired problem-solving ability (Lyubomirsky, Tucker, Caldwell, & Berg, 1999; Lyubomirsky & Nolen-Hoekeisma, 1995), poor concentration on academic tasks and impaired work performance (Lyubomirsky, Boehm, Kasri, & Zehm, 2007), and heightened negative affect (Lyubomirsky, Caldwell, & Nolen-Hoekeisma, 1998; Lyubomirsky & Nolen-Hoekeisma, 1993, 1995; Lyubomirsky et al., 1999; McLaughlin,
Theories of worry and rumination

The literature on the subject clearly indicates that rumination and worry are maladaptive cognitive processes that are associated with distress and impaired problem-solving abilities, and can often precipitate and maintain psychological disorders. In light of their deleterious implications, researchers have attempted to understand why individuals engage in these forms of repetitive thought. The following section summarises four theories of worry and rumination. The intolerance of uncertainty model of worry is an independent theory of worry, while the metacognitive model has been used to understand both worry and rumination. The experiential avoidance models of worry and rumination represent a group of theories which arise from different theoretical traditions, but which all account for the occurrence of worry and rumination via their avoidant functions. An overview of the experiential avoidance models of worry and rumination will be provided, followed by a summary of the separate theory and research pertaining to each construct.

The intolerance of uncertainty model of worry.

Dugas, Gagnon, Ladouceur & Freeston (1998) propose a model of GAD and worry which suggests that worry is caused by intolerance of uncertainty, and is associated with poor problem orientation and cognitive avoidance. Dugas and Ladouceur (2000) conceptualise worry as a cognitive phenomenon that is concerned with uncertain and negative future events and is accompanied by feelings of anxiety. Research has shown that intolerance of uncertainty (IU) is highly related to worry, regardless of anxiety and depression levels (Dugas, Freeston, & Ladouceur, 1997; Freeston, Rhéaume, Letarte, Dugas, & Ladouceur, 1994), and that IU differentiates GAD patients from those with other anxiety disorders.
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(Ladouceur et al., 1999). IU is also related to erroneous beliefs about worry, for example, individuals may believe that “worrying protects loved ones” because they have difficulty dealing with possible future events which are threatening.

Dugas and colleagues also suggest that worry and GAD are associated with poor problem orientation, which they describe as “a metacognitive process involving the operation of a set of cognitive-emotional schemas that describe how individuals think and feel about problems and their problem-solving ability” (Dugas & Ladouceur, 2000, p.637). While patients with GAD have similar knowledge of problem-solving skills to non-clinical individuals, they have difficulty applying these skills due to their ineffective problem-solving orientation (Ladouceur, Blais, Freeston, & Dugas (1998). Dugas and Ladouceur’s model also includes a cognitive avoidance component, suggesting that IU contributes to cognitive avoidance as images of uncertain future threatening events are more difficult to tolerate for individuals who are intolerant of uncertainty. Dugas and colleagues have tested this model by exploring the impact of treating IU in reducing worry. This research will be discussed later in this chapter.

The metacognitive model of worry and rumination.

According to the metacognitive theory of emotional disorder (Wells & Mathews, 1994; 1996), worry arises not from negative beliefs about the self and the world, but from a metacognitive knowledge base which controls the cognitive system and consists of positive and negative beliefs about thinking. Examples of metacognitive beliefs about worry are ‘some thoughts are harmful’, ‘paying attention to threat will keep me safe’, and ‘worrying helps me cope’ (Wells, 2006). In summary, the metacognitive model of pathological worry and GAD proposes that there are two types of worry: Type 1 and Type 2. Type 1 worry is triggered by an intrusive thought, such as a ‘what if?’ question or a negative image, and this
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trigger activates positive metacognitive beliefs about worrying as a way of coping with the feared event or planning a response. Type 2 worry involves negative metacognitive beliefs about worry as harmful or uncontrollable.

Research has found support for the notion that individuals understand their worry with reference to their beliefs about the function of worry. Borkovec and Roemer (1995) found that the highest rated reasons for worrying amongst GAD patients and nonanxious individuals are that (a) it helps them discover ways of avoiding negative future events and (b) it prepares them for the worst if they cannot avoid it. Ladouceur et al., (1998) found that individuals believed that worrying assists them in finding solutions to their problems and preventing negative outcomes, a belief that is reinforced when the feared event does not occur. Worry is also thought to be useful in helping individuals to find a better way of doing things, and to help the individual to avoid disappointment (Freeston et al., 1999). Furthermore, research also suggests that a high level of engagement in worry is also associated with stronger endorsement of such beliefs (Freeston et al., 1999; Ladouceur et al., 1998).

Research has also explored metacognitive beliefs about rumination, and has revealed that there are similarities in people's beliefs about the reasons why they engage in worry and rumination. Papageorgiou and Wells (2001, 2003) found that individuals believe that they ruminate in order to try and understand and solve their problems. In their 2001 study, Papageorgiou and Wells found that participants with recurrent major depression held positive and negative metacognitive beliefs about rumination: on one hand they felt that rumination helped them find answers to their depression and understand past mistakes and failures; yet they also saw rumination as uncontrollable and as resulting in negative social consequences. Other studies have reported that people who ruminate feel that they are gaining insight into their feelings, drawing connections between problems, trying to understand the reasons and
things happen to them, and attempting to make sense of unhappy memories (Lyubomirsky & Nolen-Hoeksema, 1993; Watkins & Baracaia, 2002). Martin and Tesser (1996) highlight the fact that while individuals may feel that rumination serves an adaptive purpose, the attempt to gain insight into one’s feelings and problems often leads to a counterproductive cycle of thinking that intensifies negative thoughts and promotes despair.

**Worry and rumination as experiential avoidance.**

Both rumination and worry have been conceptualized as forms of avoidance. Some, but not all, of the models and studies described below view avoidance through an Acceptance and Commitment Therapy lens (ACT; Hayes, Strosahl, & Wilson, 1999), incorporating the concept of ‘Experiential Avoidance’, that is, the tendency to avoid contact with unwanted, internal private experiences, such as thoughts, feelings, sensations, memories, and urges (Hayes, Wilson, Gifford, Follette, and Strosahl, 1996). From an ACT perspective, experiential avoidance, which will be discussed in greater detail in chapter four is seen as fundamental to all psychopathology and emotional problems. While the theories and studies of Borkovec and colleagues (1990; 1993; 1994; 1998; 2006), Lyubomirsky et al. (2006), Nolen-Hoeksema et al. (2008) are not associated with an ACT approach, their conceptualisations of the nature and functions of avoidance can be considered synonymous with experiential avoidance.

**Worry as experiential avoidance.**

Borkovec’s (1994) cognitive avoidance model of worry and GAD is the main theoretical model used to understand worry, and is well-supported by the empirical literature. According to this theory, worry is a cognitive-verbal activity that serves to distract individuals from deeper, more emotional topics, thereby allowing individuals to avoid emotionally distressing issues and perceived dangers. According to Sibrava and Borkovec
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(2006), at the most basic level, worry serves an avoidant function in that it is focuses on non-existent future threat which the individual has little control over, and because the perceived threat does not currently exist and there is no effective fight-or-flight response to avoid the threat, the individual must resort to mental problem-solving attempts to deal with this threat.

The cognitive avoidance model of worry suggests that because worry is predominately verbal rather than visual, it prevents the activation of somatic and physiological arousal that is associated with imagery (Vrana, Cuthbert, & Lang, 1986). Furthermore, worry may affect the processing of imagery as it is characterized by reduced concreteness, such that worrisome thought is associated with the activation of images that are less concrete and vivid, which evoke less emotional distress (Borkovec, Ray, & Stöber, 1998). If worry about a threatening event does not produce an emotional or physiological response – which Borkovec (1998) proposes is due to the fact that the verbal system operates in relative isolation from the emotional, physiological, and behavioural systems – the complete emotion underlying the imagined, threat-based event is unable to be processed. The psychological impact of this is that that distressing emotional meanings of potentially dangerous events cannot be fully tested or altered, which leads to repetitive processing of the feared stimuli.

The conceptualization of worry as a form of experiential avoidance is congruent with the efficacy of exposure therapy, in that exposure necessitates full emotional contact with the fear-related stimulus (that is, the absence of strategies aimed at maintaining avoidance) in order for extinction to occur (Borkovec et al., 1998). Thus, the avoidance model of worry suggests that worry inhibits emotional processing, and that by dealing with emotional material by worrying, the negative emotional disturbance is maintained (Borkovec et al.). Just as behavioural avoidance of the feared stimuli maintains phobias, worry as a form of
cognitive avoidance is negatively reinforced and strengthened. Furthermore, worry itself is maintained as it provides a false and reinforcing sense of control over emotions (Borkovec et al.).

Empirically, the avoidance model of worry has received strong support. Research has demonstrated that worry reduces emotionally distressing imagery (Wells & Papageorgiou, 1995) and physiological arousal in the short term (Borkovec et al., 1993; Delgado, et al., 2009). Borkovec and Hu (1990) tested this by priming speech-anxious individuals to think either worrisome or relaxing thoughts before giving a presentation, and found that individuals in the worry condition showed no cardiovascular response at all to the phobic image presentation, whereas individuals in the relaxation condition did show a response, which showed signs of extinction during repeated exposure. In another experiment, Borkovec et al. (1993) had individuals who were afraid of public speaking either worry or relax prior to imagining giving a public speech (exposure to feared stimulus). Individuals in the worry condition showed less heart rate response to this exposure than the individuals in the relaxation condition, suggesting that worry enabled individuals to suppress their heart rate response, meaning that they avoided the physiological reaction to the feared stimuli.

Rumination as experiential avoidance.

Given the similar properties and common psychological sequelae associated with worry and rumination, researchers have proposed that rumination may serve a similar avoidance function to worry. Giorgio et al. (2010) suggest that in light of the high rate of comorbidity between GAD and depression (60%; Brown et al., 2001) and the high correlations of measures of rumination and worry ($r = .66$; Beck & Perkins, 2001), rumination may serve an avoidant function as worry has been proposed to do. Giorgio and colleagues conducted three studies to test the experiential avoidance conceptualization of
depressive rumination, finding preliminary data to support the avoidance model of
rumination. Phase 1 of the research involved exploring associations among questionnaire
measures of rumination, experiential avoidance and fear of emotions amongst 138
undergraduate students. Phase 2 examined 100 students’ performance on a dichotic listening
task, which Giorgio et al. considered to be a behavioural index of avoidance that highlighted
preferences for non-depressive material following a rumination, relaxation or depression
induction. In addition, psychophysiological reactivity in response to an avoidance paradigm
(discrepancy between self-reported emotional response and physiological response to a sad
mood induction; Borkovec et al. 1993) was measured. Questionnaire measures confirmed the
relationship between rumination and avoidance, with high rumination individuals reporting
significantly greater experiential avoidance and fear of emotions than low rumination
individuals. Interestingly, high ruminators reported greater fear of both positively and
negatively valenced emotions, suggesting that high ruminators may experience discomfort in
response to any intense emotion, regardless of valence. However, there were no significant
effects for phase 2 of the study, which the authors suggest may be due to the fact that there
was a low percentage of words correctly recalled overall, potentially preventing the detection
of any differences in recall between the low and high rumination groups. Overall, therefore,
this study lends partial support for an avoidance conceptualization of rumination.

Cribb and colleagues (2006) investigated the relationship between rumination and
experiential avoidance in depression. One hundred and one non-clinical undergraduate
students completed self-report measures of depression, rumination, experiential avoidance
and mood state. In addition, participants viewed a low mood emotion-eliciting video stimulus
and completed a summary of the film, which was independently rated to determine whether it
was abstract or concrete. Results revealed that rumination, depression and cognitive,
behavioural and experiential avoidance were all significantly correlated, and remained so even when anxiety was controlled for. Furthermore, reduced concreteness of film description was associated with experiential avoidance and depression. In reflecting on their findings, Cribb et al. propose that avoidance is associated with the maintenance of depression (e.g., Jacobson, Martell, & Dimidjian, 2001; Martell, Addis, & Jacobson, 2001), and that future research is necessary to further clarify the nature of this relationship.

In attempting to understand the avoidant function of rumination, researchers have proposed that rumination can operate as a form of experiential avoidance via cognitive and/or behavioural pathways. Consistent with the avoidance model of worry, rumination has been conceptualized as a cognitive style that fosters avoidance by preventing the activation of emotional and somatic responses – that is, rumination allows the individual to avoid distressing emotions associated with more concrete, image-based thought content (Cribb et al., 2006). Furthermore, like worry, rumination is thought to be associated with reduced concreteness, such that thinking about problem causes, meanings and consequences in an abstract way may mean that the associated imagery and emotion is avoided. Watkins and Moulds (2004) found that depressed individuals generated less concrete descriptions of problems about which they were currently ruminating relative to remitted depression and control participants. In light of this finding, they suggest that the avoidant function of rumination may account for its persistence, just as worry has been thought to be maintained by experiential avoidance.

Rumination is also seen as representing a form of behavioural avoidance in that it may prevent engagement in environmental events that may be responsible for the maintenance of depression. Within the behavioural activation model of depression (Jacobson et al., 2001; Martell et al., 2001) rumination is conceptualized as a problematic, avoidant behaviour,
functionally similar to other examples of overt avoidance (inactivity, social withdrawal). Nolen-Hoeksema and colleagues (2008) suggest that at a nonconscious level, rumination serves the purpose of allowing the individual to avoid aversive situations and the responsibility to take action, in that they see more obstacles, are less willing to commit to solutions, and are more likely to disengage from real-life problems than attempt to solve them. Nolen-Hoeksema et al. argue that from a behavioral perspective, rumination helps individuals avoid engaging in environment by preoccupying their attention and time. To build on this, they suggest that rumination serves an additional avoidant function in that it involves collecting evidence to support the view that the individual is hopeless, thereby justifying withdrawal and inaction (Nolen-Hoeksema et al., 2007). This is consistent with research by Lyubomirsky et al. (2006) who found, in a sample of women who had previously received a diagnosis of breast cancer, that women who ruminated waited 2 months longer than non-ruminators to report their initial symptoms to their health care professionals.

Summary

Rumination and worry constitute repetitive, perseverative cognitive processes, which are perceived as relatively uncontrollable, and are often associated with emotional distress. Research has established that there is much that these two processes have in common, including abstract thought, concerns with control, and cognitive inflexibility (Nolen-Hoeksema et al., 2008), and they are likely to co-occur in the same individual, potentially representing a unified construct of negative repetitive thought (Ehring and Watkins, 2008). However, these cognitive processes also differ in important ways; namely in their temporal orientation, and in the thought content they give rise to: where worry is focused the anticipation of future threat, rumination is more associated with trying to understand the meaning of past events and one’s present situation (Noelen-Hoeksema et al., 2008). While
rumination and worry are common experiences which occur in both clinical and non-clinical populations, they are also associated with a broad range of negative consequences, and been implicated in the onset and maintenance of a range of psychopathology to the extent that they can be considered transdiagnostic processes which cut across various psychological disorders.

In light of the fact that these constructs are associated with such deleterious consequences, researchers have tried to explain their occurrence. The most prominent theoretical model of worry is Borkovec’s avoidance model, which suggests that worry facilitates emotional avoidance by occupying the individual’s attention with cognitive activity. In light of the close similarities between worry and rumination, researchers have more recently considered whether rumination also serves as an avoidance mechanism. Thus, both worry and rumination can be considered to be responses to a distressing emotion or psychological state, which function to allow the individual to temporarily avoid this experience. While Nolen-Hoeksema et al. (2008) see rumination as existing as a response to depressed mood, based on the avoidance theories of worry and rumination, these cognitive processes occur in response to a range of difficult emotions and psychological states, such as sadness, fear, guilt, shame, uncertainty, confusion, and so forth. This approach is also consistent with the IU model of worry, which proposes that worry is associated with cognitive avoidance brought on by intolerance of uncertainty. Thus, an avoidance perspective of worry and rumination suggests that in ameliorating the distress associated with engaging in these cognitive processes, it is important to focus on their avoidant functions and help individuals to explore different ways of responding to psychological distress. This point will be expanded on further in chapters four and five, in a discussion of the viability of applying Acceptance and Commitment Therapy to the treatment of rumination and worry.
As has been discussed in this chapter, researchers have begun to recognize the importance of focusing specifically on targeting rumination in treating depression and preventing relapse (e.g., Teasdale et al., 2000; Watkins et al., 2007), however on the whole, the relevance of treating of worry and rumination has been under-recognised in the treatment literature, which is problematic given their deleterious psychological correlates. It is therefore necessary first to explore the range of interventions that have currently been explored in relation to rumination and worry.
Chapter 3. Treatments for Worry and Rumination

Chapter Overview

The previous chapter established a rationale for targeting worry and rumination via dedicated psychological interventions, based on the pivotal role these cognitive processes play in the onset and maintenance of a range of psychological disorders. This chapter will review the literature on the current range of psychological therapies which have been applied to the treatment of worry and rumination. The interventions for worry will be outlined first, followed by the rumination interventions. The review of the treatment literature will highlight the growing trend towards process-focused rather than content-focused interventions for worry and rumination. The final part of this chapter will summarise the limitations of the current suite of interventions for worry and rumination, thereby establishing the need for alternative psychological treatments to be explored. The chapter will conclude by proposing Acceptance and Commitment Therapy (ACT) as a viable and potentially valuable option for the treatment of worry and rumination.

Psychological Interventions for Worry and Rumination

In light of the relationship between rumination, worry and various forms of psychopathology, researchers are increasingly exploring ways to minimize the negative outcomes associated with their occurrence. Given the strong link that has been established between these forms of negative repetitive thought and anxiety and depression in particular, it is somewhat surprising that the body of empirical evidence looking specifically at treating worry and rumination is relatively small. A possible reason for this is that the key role of the processes of worry and rumination in the maintenance of depression and anxiety is under-recognised by clinicians, who may focus generally on treating the broader psychological conditions with which they are associated. Nevertheless, researchers are recognizing the need
for psychological interventions to specifically target worry and rumination across diagnostic categories, in order to reduce the distress and broader psychological disturbances with which they are associated (Topper et al., 2010).

**Worry Interventions**

The treatment of worry has primarily been focused on in the context of GAD, as pathological worry is the defining symptom of this disorder. However, it is becoming increasingly evident that clinicians need to consider the role of pathological worry in the primary presenting issue, and to incorporate interventions specifically targeted at reducing worry as a means of improving the target symptoms (Purdon & Harrington, 2008). The treatment outcome literature for GAD is small relative to other anxiety disorders (Covin, Ouimet, Seeds, & Dozois, 2008), and researchers have suggested that the success rate of psychological therapy for GAD and worry is unsatisfactory (Ballenger, 2001; Fisher, 2006). Given that conceptualizations of GAD have been highly variable historically, assessment and evaluation of these models have lagged behind relative to other anxiety disorders, which has had implications for identifying and measuring effective treatments for this disorder (Covin, et al., 2008). Thus, the optimal treatment for GAD remains under debate, despite strong advances in the treatment of other anxiety disorders (Dugas & Ladouceur, 2000).

**Cognitive Behavioural Therapy.**

There are a range of different CBT-based protocols for the treatment of GAD. Components of a CBT intervention for GAD and worry may include worry awareness and self-monitoring, relaxation techniques, cognitive techniques (such as the completion of a worry outcome diary, letting go of predictions and expectations, cognitive restructuring), behavioural experiments, imagery rehearsals of coping strategies, stimulus control treatment,
exposure therapy (imaginal and in-vivo), systematic desensitization, and behavioural activation.

Covin and colleagues (2008) conducted a meta-analysis of CBT for pathological worry amongst clients with GAD. This meta-analysis, which included 10 studies, was the first quantitative review to examine the efficacy of CBT in reducing worry specifically, rather than overall anxiety. As such, only studies which used worry rather than anxiety as the prime outcome measure (i.e., the Penn State Worry Questionnaire; Meyer et al., 1990), and those that included both cognitive and behavioural components in their interventions were included in the analysis. Meta-analytic calculations revealed a large effect size for CBT that was moderated by age and modality of treatment: the largest gains were reported for younger adults and individual treatment, however all effect sizes were significant. Mean PSWQ scores at post-treatment and follow-up were well within the normal range, suggesting that CBT is effective in reducing pathological worry in individuals with GAD. The authors note that the effect sizes reported in their study were greater than those reported in previous analyses, suggesting that this could be due to the possibility that worry demonstrates greater overall change relative to the composite anxiety variables used in previous studies. Alternatively, they propose that their results could be explained by differences in study selection criteria, or by the fact that only very recent studies were used. They also highlight the fact that given the small number of studies included in the review, it should only be considered to be a preliminary analysis. Furthermore, their findings revealed that GAD may be less effective for older adults, indicating that there is room for improvement in CBT for worry in this population.

While the study by Covin et al. (2008) provides preliminary evidence that CBT is an effective treatment for worry, CBT is less efficacious for GAD than for other anxiety
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disorders, and the benefits of exposure techniques have been questioned for this disorder (Ballenger et al., 2001). While exposure therapy is an established intervention in the treatment of anxiety disorders, the application of exposure is less straightforward for GAD. Given that the anxiety-provoking stimuli associated with GAD are thoughts and mental images, which are intangible, covert and largely uncontrollable (compared to the anxiety-provoking stimuli associated with specific phobias, social phobia, or panic disorder), the development of an exposure hierarchy and completion of exposure therapy with individuals experiencing GAD is far more difficult. In some cases where generalized anxiety is associated with particular situations, images or with anxiety symptoms, situational and interoceptive exposure may be used in the treatment of GAD, however, these techniques do not deal with the cardinal symptom of GAD, worry. To rectify this, worry exposure, a specific form of imaginal exposure (Craske, O’Leary, & Barlow, 1992), has been introduced in recent GAD protocols as a means of explicitly targeting anxiety associated with the experience of worry about situations which the individual cannot exert control over (Dugas & Ladouceur, 2000).

**Worry exposure.**

Worry exposure requires the client to visualize their most feared image, in addition to coping strategies and alternative outcomes. Hoyer, Beesdo, Gloster, Runge, Höfler & Becker (2009) examined worry exposure in the attempt to identify which treatment components of CBT were most effective in reducing worry in GAD. In one of the few studies looking specifically at the effectiveness of worry exposure, Hoyer and colleagues explored whether worry exposure (WE) was as efficacious as applied relaxation (AR) – an empirically-supported stand-alone treatment for GAD – amongst a sample of 73 outpatients meeting DSM-IV criteria for GAD as a primary diagnosis. In this randomized clinical trial,
individuals participated in 15 sessions of either WE or AR. The WE intervention involved psychoeducation about GAD using concepts of avoidance, and incorporated imaginal exposure (exposure in sensu) to worry-related thoughts and images. AR involved psychoeducation on the role of body arousal in the maintenance of GAD, and participants were taught techniques and instructed to use them in everyday life when signals of tension, worry and anxiety occurred. Outcomes on self and therapist rated measures of symptomatology, worry and thought suppression indicated that the interventions did not differ with regards to treatment effects or dropout effects: the proportion of patients reaching high end state functioning was 48% in the WE condition and 56% in the AR condition. Furthermore, worrying, negative metacognitive appraisals of worrying and thought suppression were reduced, and gains were maintained at the 6-month and 1-year follow-up for both treatment conditions.

This study by Hoyer et al. (2009) provides support for the importance of treating worry, in that focusing on worry alone can lead to significant improved in overall anxiety. Importantly, the results also indicate that it is not necessary to change or suppress thoughts in order to reduce worry – while the WE condition incorporated a cognitive focus in that it required individuals to focus their attention on worry-related imagery, the AR condition was equivalent in effectiveness and did not incorporate any emphasis on cognitions at all. Given that worry is a cognition phenomenon, this result is somewhat surprising, and it may be that the effectiveness of AR in reducing worry can be partially accounted for by an additional mechanism. Given that AR requires the individual to focus their attention on sequentially relaxing parts of their body – thereby shifting their attention away from their thoughts and onto the present moment – this exercise can be considered as being a form of mindfulness. It is possible, therefore, that the mindfulness aspect of AR (which was not measured by the
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authors of this study) was a contributor to the effectiveness of this treatment, which would lend further support to the notion that worry can be reduced without engaging with the content of worry-related cognitions at all. This said, while this study yields support for the use of both WE and AR in the treatment of worry, it appears that in their present form or used in isolation these techniques are not effective enough to treat GAD, as the response and remission rates were only moderate and did not exceed the typical rates found in other studies (Hoyer et al.)

**Cognitive restructuring versus coping desensitization.**

The effect of cognitive restructuring, a core intervention in CBT, has also been explored as an isolated treatment component in the treatment of self-reported worry. Robinson (1989) compared cognitive restructuring to coping desensitization, a procedure which is somewhat similar to worry exposure in that it requires the individual to notice worry and see it as a signal to relax, and work through an imaginal exposure hierarchy while undertaking relaxation training. The cognitive restructuring intervention involved teaching individuals to recognize the unrealistic and unhelpful nature of their worries and to substitute them with more realistic thoughts. Participants in this condition also worked through an imaginal exposure hierarchy. As part of the different interventions, 48 participants received 8 twice weekly, 60 minute group therapy sessions of either cognitive restructuring, coping desensitization, or the placebo, progressive relaxation. In the cognitive restructuring condition, participants were trained to realistically evaluate imaginally-presented worry situations. Participants in the coping desensitization condition were taught to use relaxation in response to worry images within a coping framework. Results revealed that there were significant worry reductions in both the cognitive restructuring group and coping desensitization groups, but that the cognitive restructuring group was more effective. There
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was no change in worry and anxiety observed in the placebo and wait-list control groups. Subjects in the cognitive restructuring condition reported significant increases in attention and decreases in the frequency of thought intrusions.

Based on these findings, Robinson (1989) suggested that the cognitive component of treatment for worry is most effective. However, this conclusion should be interpreted with caution for a number of reasons. Firstly, the cognitive restructuring technique utilized by Robinson was essentially a form of thought suppression: it did not involve assisting participants to restructure their beliefs, but rather simply required them to replace thoughts deemed unhelpful with more positive thoughts. This was clearly effective in the short-term, which is unsurprising given that thought suppression does reduce distress temporarily. However the study did not include a follow-up assessment of anxiety and worry, and therefore it is impossible to determine how well the intervention effects were maintained. It is possible that, as the thought suppression literature would indicate (e.g., Wenzlaff, Wegner, & Roper, 1988), the individuals’ worry-related thoughts rebounded in greater intensity a short period after the conclusion of the treatment. Second, worry was measured by participants recording the percentage of the day they spent worrying and how they felt at the end of the day. This is not a psychometrically-validated measure of worry, and while all self-report measures are subjective, asking individuals to make estimates about their entire day at the end of the day is likely to yield inaccurate and highly subjective outcomes. In line with this, it may be that the cognitive restructuring intervention gave individuals a false sense of control over their worry, in that by feeling like they were actively stopping or replacing their worry (however temporarily this may have been) they were more inclined to feel – in the short term – that they were able to reduce their worry, which may have impacted their assessment of their level of daily worry. Participants in the coping sensitization condition, however, were
not encouraged to focus on their thoughts at all, which, in light of the dominant view that worry is negative and should be stopped, may have caused them to feel less in control of their worry, leading them to perceive the intervention as less effective. Finally, the cognitive restructuring and coping desensitization conditions both resulted in significant improvements in worry rates, and only differed on one criteria used to class individuals as worriers: that of worrying at least 50% of the day. Thus, while this study appears to yield support for the use of cognitive restructuring in treating worry, its findings should be interpreted in light of its limitations and potential alternative explanations for the observed results.

Metacognitive therapy.

Research has also explored the application of metacognitive therapy to worry. Metacognitive therapy for worry and GAD (Wells, 1995, 1997) differs from traditional CBT in that it focuses exclusively on metacognitive appraisals, beliefs and strategies. Treatment components include formulation of the problem (based on the metacognitive model); socialization to a metacognitive understanding of the presenting problem; challenging metacognitive beliefs about the uncontrollability of worry, the danger of worry and the associated emotion and the need to worry in order to cope; and relapse prevention strategies. The effectiveness of metacognitive therapy for GAD has been examined in two studies. Wells and King (2006) found that amongst a sample of 10 individuals with GAD, 3-12 sessions of metacognitive therapy resulted in significant reductions in anxiety, worry, and depressed mood. In a randomized clinical trial of applied relaxation versus metacognitive therapy (Wells et al., 2010), scores on the PSWQ revealed that 80% of participants in the metacognitive therapy condition had recovered at post-treatment, with a further 20% showing improvement (compared to the 10% recovery rate associated with the AR condition). These findings provide strong support for the notion that it is not necessary to engage with and
change the specific thoughts that occur during chains of worry, but rather that worry can be treated effectively by focusing on the cognitive process which it involves, and how the individual perceives and relates to this process. In metacognitive therapy the individual is encouraged to shift their attention away from and disentangle themselves from the specific content of their worry-related cognitions, and the strong improvement rates observed in these studies indicate that this is an important therapeutic intervention in the treatment of worry. Thus, these results provide a convincing argument for the importance of taking a process-oriented approach to the treatment of worry, suggesting that interventions which attempt to target the specific content of worry may in fact be redundant.

**Mindfulness-based therapies.**

The focus on attentional shifting emphasised in metacognitive therapy is a key component of mindfulness based therapies. The body of research on mindfulness for worry is very small, and the studies that have been conducted have examined the impact of mindfulness on worry only within the context of GAD. Two studies have examined the effectiveness of mindfulness-based cognitive therapy for GAD (MBCT; Craigie, Rees, Marsh, & Nathan, 2008; Evans et al., 2008). MBCT is a group therapy program which represents an integration of CBT for Depression (Beck, 1979) and components of Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1990), designed to teach individuals to become aware of thoughts and feelings as “mental events” rather than as aspects of the self or accurate reflections of reality. Thus, there is little emphasis on changing the content/meaning of thoughts. In the study by Craigie et al., 29 individuals received nine weekly, two-hour sessions of MBCT. Findings indicated significant improvements in worry, stress, and quality of life at post-treatment and follow-up, however the rate of recovery for pathological worry at post-treatment was very small, with only 5% of treatment completers
achieving recovery status ($n = 20$). Evans et al. examined the effectiveness of MBCT for GAD amongst a sample of 11 participants, who completed eight two-hour group sessions. Analyses indicated that MBCT yielded significant reductions in worry, anxiety and depressive symptoms, however the authors caution against the generalization of the findings given the small sample size and lack of control condition. In evaluating the findings of both of these studies, Topper and colleagues (2010) highlight that while they provide support for the further exploration of MBCT for GAD, the results in both cases were weaker than those observed follow multi-component treatments for GAD.

**Treatment of worry as intolerance of uncertainty.**

The intolerance of uncertainty model of worry (IU; Dugas et al., 1998) proposes that worry is a cognitive phenomenon which arises from a trait-based tendency towards intolerance of uncertainty, which is associated with the avoidance of images related to possible future threat as well as erroneous beliefs about the worry (for example, that worry will protect loved ones). Dugas and Ladouceur (2000) explored the IU model of worry empirically, using an intervention aimed at helping individuals to become more tolerant of uncertainty. This treatment differs from other CBT interventions for GAD and worry in that it teaches individuals with GAD to discriminate between two types of worries – those that they have some control over and those that are uncontrollable – and to apply a different strategy to each type. Employing a multiple baseline across participants design, four individuals with a primary diagnosis of GAD received weekly one hour therapy sessions (14-18 in total based on the participants’ needs). Treatment involved presentation of the treatment rationale, awareness training, worry interventions (including re-evaluation of beliefs about worry, problem orientation training, and cognitive exposure), and relapse prevention. The results of the intervention indicated that three out of four participants achieved high end state
functioning at post-treatment and 6-month follow-up, however by the 12-month follow up, two of these individuals had reverted to moderate end-state functioning. Treatment was less effective for the fourth participant, possibly due to high comorbid OCD. Dugas and Ladouceur suggest that their results indicate that cognitive change was highly related to treatment outcome, but that it is unclear whether cognitive change preceded or followed change on symptom measures. In addition, changes in IU preceded changes in time spent worrying for three out of four participants. Given the very small sample size and the fact that IU was only associated with change in worry in three of the four participants, conclusions about the effectiveness of focusing on IU in the treatment of worry cannot be drawn from this study. However, the findings do lend further support to the notion that worry can be reduced without the modification of worry content, as the IU intervention did not include a cognitive restructuring component, instead focusing solely on increasing awareness of worry. While the intervention was associated with cognitive change, this was not targeted explicitly but occurred as byproduct of participant’ increased awareness of worry images and beliefs about worry.

Summary of worry interventions.

To summarise, the empirical literature on psychological interventions for worry is small, and findings are mixed. There is some evidence for the effectiveness of CBT for worry, however this is not applicable to all samples, and only examines worry in the context of GAD. It is evident in reviewing the treatment literature that a shift is occurring in the focus of worry interventions, with newer interventions omitting a focus on worry content altogether, instead taking a more process-oriented approach to the treatment of worry. Common to metacognitive and mindfulness-based interventions for worry is an emphasis on shifting attention away from worry, towards more helpful styles of thinking and behavioural
change. While worry exposure and IU interventions include a focus on worry imagery, there is no emphasis on changing thoughts or mental images in any way – rather, change occurs in relation to the impact the worry has on individuals. Furthermore, the only study which endorses cognitive restructuring in treating worry is dated (Robinson, 1989) and has several important limitations. Thus, the small number of worry intervention studies and the fact that the treatment effects observed across several studies are modest highlight the difficulty associated with treating worry, as well as the need for further research to explore treatments that target the process aspects of worry rather than the restructuring of worry content.

**Rumination interventions**

Siegle (2008) argues that rumination is a strong candidate for consideration in the development of personalized treatments. Like worry, however, the body of literature looking specifically at effective treatments for this maladaptive thought process is relatively small. Given the fact that rumination occurs across a broad range of different psychological disorders, there is a clear need to identify effective interventions for reducing the frequency and intensity of ruminative thought.

**Cognitive Behavioural Therapy.**

While there is very limited data on treating rumination with cognitive-behavioural therapy (CBT), it is likely that this therapeutic modality is used frequently in clinical settings as part of treatment for depression and/or anxiety. A CBT intervention for rumination would involve challenging the content of ruminative cognitions with the aim of reducing their form, frequency, intensity and believability (Harrington, 2008). Examples of commonly used treatments include: verbal challenges to beliefs, directed focus, distraction, and improving perceived control over distressing thoughts, among other methods (Alford & Beck, 1994; Bentall, Haddock, Slade, & Peter, 1994; Chadwick & Lowe, 1990,1994; Haddock, Slade,
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In the only research to evaluate the impact of specifically targeting rumination in the treatment of depression, Watkins and colleagues (2007; 2011) conducted two studies investigating the efficacy of Rumination-Focused CBT (RFCBT) for individuals with residual depression. Within RFCBT, rumination is conceptualized as a form of avoidance, and treatment is focused on assisting clients to switch from rumination to more helpful styles of thinking. Therapeutic techniques used to facilitate this include functional analyses, which involves helping individuals to notice rumination warning signs, develop alternative strategies, and alter environmental and behavioural contingencies maintaining rumination; behavioural activation to assist participants to replace avoidance with approach behaviours; experiential/imagery exercises and behavioural experiments.

In the first study on RFCBT, a case series, participants were 14 patients suffering from residual depression following pharmacological treatment. Participants were treated individually for 12 weekly, 60-minute sessions. As indicated by scores on depression outcome measures (Hamilton Rating Scale for Depression, Hamilton, 1960; Beck Depression Inventory-II; Beck et al., 1996) and on the Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991), RFCBT resulted in significant improvements in depressive symptoms, rumination, and comorbid disorders. Seventy one per cent of the sample met criteria for treatment response, and half of the participants achieved full remission. Watkins et al. suggest that these results indicate that focusing on rumination may yield generalised improvement across depressive symptoms. In a recent RCT, Watkins et al., (2011) explored the efficacy of RFCBT versus treatment as usual (TAU) for residual depression. The findings revealed that
RFCBT plus TAU was more effective than TAU alone in reducing depressed mood and rumination, and change in rumination mediated the effects of treatment condition on reduction in depressive mood.

These findings provide support for the effectiveness of RFCBT in treating rumination. Tellingly, RFCBT does not include any focus on changing cognitive content – rather, RFCBT encourages the individual to notice when they start to ruminate (and to be aware that this occurs as an avoidance strategy), and to then shift their attention away from their ruminative thought and onto more helpful thinking styles and adaptive actions. In light of this, RFCBT represents a significant departure from a traditional CBT protocol, and the omission of cognitive restructuring from the RFCBT intervention indicates that, as is the case with worry, researchers are recognising the futility of applying this technique to the treatment of rumination, instead focusing on more process-oriented strategies. While the RFCBT intervention approach does not explicitly incorporate mindfulness, it requires the individual to be aware (and thus mindful) of the thoughts entering their consciousness, in order to deal with the thought in a different way to how they would typically (i.e. through rumination). In this emphasis on attentional awareness and managing the process of thinking rather than the content, the RFCBT approach shares some basic similarities with Acceptance and Commitment Therapy, a mindfulness and acceptance-based intervention (ACT; Hayes et al., 2011). Attention Training.

The value of mindfulness and attentional shifting in the treatment of rumination has also been explored in a study on Attentional Training (ATT; Wells, 1990). Practice of ATT involves external auditory monitoring exercises that require progressively greater attentional capacity. The therapist guides the individual’s attention to different sounds inside and outside of the consulting room through 3 specific phases: selective attention, attention switching, and
divided attention. Papageorgiou and Wells (2000) examined the effectiveness of Attention Training (ATT; Wells, 1990) for recurrent MDD. While not explicitly stated by the authors, this intervention clearly targets ruminative thinking, as it aims to reduce negative self-focus and increase attentional and metacognitive control in order to disrupt the activation of specific styles and dimensions of thinking. Utilising a single case-series methodology, four participants with recurrent MDD completed 5-8 weekly sessions of ATT. All participants showed clinically-significant reductions in depression and anxiety, negative automatic thoughts, rumination, and attentional and metacognitive factors, and treatment gains were maintained at the 12-month follow-up. Papageorgiou and Wells (2000) argued that it is unlikely that the observed effectiveness of ATT can be attributed to the effects of distraction, as there is little evidence to suggest that distraction alone can produce stable improvements in depression. In the fact that it is associated with focusing attention and staying present while not engaging with thought content, ATT shares common features with mindfulness. While mindfulness was not measured as part of this study, it is possible that the treatment effects can be accounted for by change in participants’ levels of mindfulness, such that they were more engaged with the present moment, more aware of their mental activity, and therefore better able to shift their attention away from maladaptive cognitive processes. Thus, this study may provide some support for the use of mindfulness techniques in the treatment of rumination.

**Mindfulness-based therapies.**

A number of studies have focused specifically on the application of mindfulness to rumination. Schmaling, Dimijian, Katon, & Sullivan (2002) suggest that as mindfulness promotes the development of a mindset that is aware yet not focused on grappling with the content of thought, it may be a more useful treatment for rumination than a behavioural
intervention such as problem solving. As described in the previous chapter, Teasdale and colleagues (2000) explored the efficacy of mindfulness in targeting the thinking patterns associated with relapse/recurrence of MDD: depressive rumination. In a randomized clinical trial, Teasdale et al. compared the efficacy of Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002) to treatment as usual (medication and clinical management) amongst a sample of 145 recently recovered depressed patients. Participants in the MBCT condition received 8 weeks of therapy, and relapse/recurrence to MDD was assessed in both conditions over a 60-week period. Results revealed that MBCT significantly reduced relapse/recurrence for patients with 3 or more previous episodes of MDD (77% of the sample), but not for patients with only 2 previous episodes. In explaining these findings, the authors suggest MBCT may not be effective for acute MDD, as difficulties in concentration and intensity of negative thinking may inhibit attentional control skills which are central to the program.

A more recent study by Kuyken and colleagues (2008) examined the effectiveness of MBCT compared to anti-depressant medication in preventing depressive relapse and improving quality of life. Sixty one individuals completed an 8-week program of MBCT while tapering off anti-depressants, while 62 others continued with maintenance anti-depressant treatment. The results revealed that MBCT was more significantly effective than maintenance anti-depressants in reducing residual depressive symptoms and psychiatric comorbidity, and improving quality of life. Furthermore, rates of anti-depressant use in the MBCT group was significantly reduced, and 75% of participants in this condition ceased use altogether. At 15-month follow-up, 47% of MBCT participants had experienced a depressive relapse, compared to 60% in the anti-depressant maintenance condition. Taken together, these studies on MBCT for rumination in the context of residual depression provide support for the
use of mindfulness in the treatment of rumination, in addition to the effectiveness of targeting
rumination in ameliorating recurrent and residual depression.

In a recent study, Hilt and Pollack (2012) examined the impact of mindfulness for
rumination with a sample of 102 young people (mean age=11.51). The mindfulness
intervention was one of three brief interventions targeted at reducing rumination, the others
being distraction and problem-solving. The participants underwent a negative mood induction
before being randomly assigned to one of the three interventions, which involved 8-minute
audio recordings of directions for the participants. The results revealed that mindfulness and
distraction were associated with reduced state rumination compared to problem-solving,
suggesting that even brief mindfulness interventions have clinical value for reducing
ruminative thought.

Three studies have explored the impact of mindfulness on the thought processes that
occur during episodes of depression. While these studies do not involve testing specific
interventions, they shed light on the relationship between mindfulness and rumination. In a
study by Watkins and Baracaia (2002), 32 currently depressed, 26 recovered depressed, and
26 never depressed participants were randomly allocated to one of three conditions and
required to complete a problem solving task. In the state-oriented condition, participants were
presented with questions commonly reported by depressive ruminators (i.e. “What am I doing
wrong?” “What caused this problem?”) and were asked to bear these in mind while
completing the task. The process-oriented condition was designed to increase awareness of
the mental processes involved in problem solving (i.e. “How am I deciding on a way to solve
this problem?”), and in the third condition no questions were shown. The results indicated
that for the recovered depressed and currently depressed groups, thinking style during
problem solving significantly influenced problem-solving outcome, and that process-oriented
thinking rectified the problem-solving deficit in depression. The findings of this study are highly relevant to a discussion of the effectiveness of mindfulness for rumination, as it shows that by increasing their awareness of mental processes (which is facilitated by mindfulness), participants were able to shift themselves away from ruminative thinking and towards more effective problem-solving strategies. The findings also highlight the impact rumination has on problem-solving abilities in people with depression, which is further indicative of the importance of treating it effectively.

Watkins and colleagues (Watkins, 2004; Watkins & Teasdale, 2004) also found that it was possible to change an individual’s focus during rumination to a more mindful state of being, and that this leads to improvements in quality of thinking. Watkins and colleagues distinguished between two types of rumination: the abstract analytical processing mode, which is focused on evaluating higher level causes, meanings, consequences and implications of self-experience, and the concrete experiential processing mode (or mindful experience), which is focused on lower level, specific and direct experience of one’s thoughts, feelings and sensations in the present moment. Research by Watkins and colleagues has shown that it is possible to induce different modes of focus during rumination, and that different modes have different implications for mood and depressive symptoms. Drawing on this theory, Ehring and Watkins (2008) found that abstract rumination resulted in slower recovery from negative affect than concrete rumination or distraction, while concrete rumination led to fewer negative intrusions than abstract rumination and distraction. This research suggests that interventions do not need to focus on eliminating rumination altogether, but that changing an individual’s focus during rumination may be sufficient in reducing negative outcomes.

An additional benefit of mindfulness for the treatment of rumination is the impact it has on thought suppression. Research by Wenzlaff and Luxton (2003) suggests that
mindfulness may be a way of effectively targeting thought suppression, which has been found to be prominent in individuals with depression and is associated with numerous negative effects. Wenzlaff and Luxton found that in a sample of 225 undergraduate students, individuals who were high in thought suppression and stress ruminated the most and experienced the most dysphoria. They found that people who ruminated the most also initially devoted the most effort to suppression, and that thought suppression efforts can fuel depressive rumination (particularly when associated with high levels of stress, which undermines mental control). These findings led the authors to conclude that mindfulness meditation may be beneficial in the treatment of rumination, as thoughts are allowed to enter and leave consciousness without intent or deliberation.

**Competitive Memory Training (COMET).**

A relatively new intervention for rumination which is consistent with the trend in the literature towards dealing with thought process rather than content is Competitive Memory Training (COMET). COMET views the amount of involvement the patient has in negative thoughts and emotions as problematic, rather than the content of cognitions themselves. Consequently, COMET aims to reduce the negative effects of rumination through the installation and repetitive activation of an “incompatible emotional network” in the client, by countering distressing memories and encouraging the adoption of an attitude of indifference or acceptance.

In two studies on the application of COMET to mixed diagnoses (Olij et al., 2006) and mixed psychological problems (Maarsingh et al., 2010), COMET led to reductions in depressed mood and increased self-esteem. However, it is difficult to gauge the effectiveness of COMET from these studies as they did not incorporate control groups. A recent controlled study exploring the impact of COMET with elderly depressed patients revealed that adding
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COMET to care as usual was more effective than care as usual alone in improving depressed mood and reducing the frequency of rumination (Ekkers et al., 2011).

**Summary of rumination interventions.**

A review of the rumination intervention literature indicates that the trend in the treatment of rumination echoes the trend in worry interventions – that is, researchers are recognising the importance of focusing on the processes that underlie and are associated with rumination, as opposed to targeting therapeutic efforts at the modification of the specific content of ruminative cognitions. It is clear from the research that interventions which incorporate mindfulness, awareness, and acceptance components, in addition to a focus on the alteration of behaviour rather than cognition, show promise in the treatment of rumination. Furthermore, the studies reviewed lend additional support for the notion that focusing on rumination may yield generalised improvement across depressive symptoms.

**Limitations of current treatments for worry and rumination**

To summarise, the body of literature on interventions for worry and rumination is small, and current psychological approaches to treating pathological forms of these cognitive constructs are limited. While the need for effective rumination interventions has been established (Siegle, 2008), a response to this need in the form of effective, evidence-based psychological treatments for rumination has not yet occurred. Similarly, there is extensive room for improvement in the psychological treatment of worry. A review of 11 studies on psychological treatments for GAD, including individual cognitive therapy (CT), individual CBT, Individual applied relaxation, group CT (intolerance of uncertainty model), and individual metacognitive therapy, revealed that only 31% of the total sample of GAD patients from all studies recovered at post-treatment (N= 495). Furthermore, for worry specifically, only three of the 10 active treatments resulted in a recovery rate of at least 50% (Fisher,
Evans et al. (2007) highlight that amongst GAD patients who respond to treatment, the persistence of residual GAD symptoms is a problem. While newer approaches to treating worry and rumination have shown some promising support (e.g. RBCT, Watkins et al., 2007; metacognitive therapy; Wells, 1995, 1997), these treatment frameworks do not account for the fact that rumination and worry often co-occur in the same individual, and are implicated in both anxiety and depression. Thus, an examination of the theory and research on worry and rumination and their role in the onset and maintenance of psychopathology highlights a clear need for the exploration of a unified approach to treating these processes, across a range of psychological disorders.

There is currently no clear consensus regarding the most effective interventions to address these cognitive processes which are implicated in a range of psychological disorders. However, given its status as the current treatment of choice for anxiety and depression, it is likely that CBT is frequently used in clinical settings to manage worry and rumination. This may be problematic for a number of reasons. Firstly, as is evident from the literature reviewed in this chapter, rumination and worry interventions are moving away from a traditional CBT approach, which would emphasise the engagement with thought content and cognitive restructuring, towards a more process-oriented approach. This shift in focus is consistent with the way in which worry and rumination and worry are understood theoretically – the models of these constructs described in the previous chapter emphasise that it is the processes associated with worry and rumination that are their most salient and defining features, whereas the specific thoughts that occur during chains of worry and rumination are far less relevant.

Second, there are also important reasons why CBT may not be the most effective treatment for worry and rumination. One key reason is CBT’s emphasis on the reduction of
negative thinking. This emphasis might encourage thought suppression and over-control, which have been shown to result in a paradoxical increase in negative thoughts (Hayes et al., 1999; Wenzlaff et al., 1988). Hayes et al. (1999) suggest that cognitive restructuring, a core intervention used in CBT, not only focuses too much on cognitive content, but also communicates to the client that anxious and depressive thinking needs to be suppressed (Heimberg & Ritter, 2008). In addition, Arch and Craske (2008) suggest that cognitive restructuring may facilitate thought suppression by emphasizing the modification of thought content, and placing judgment on whether certain thoughts are good versus bad, helpful versus unhelpful, and so forth, which may increase the desire to suppress them. Arch and Craske also suggest that engaging in cognitive restructuring may result in rumination about whether the original maladaptive thought or the newly restructured thought has more supporting evidence, thereby incorporating the therapeutic technique into the rumination instead of countering it.

If cognitive restructuring does facilitate thought suppression, as suggested by Arch and Craske (2008), this therapeutic technique may be particularly problematic for individuals who worry and ruminate excessively: a view that has been supported by empirical evidence (Beevers & Meyer, 2008; Hayes et al., 1999). In research with individuals with current major depression, those who had recently recovered from a depressive episode, and never-depressed controls, Watkins and Moulds (2009) found that thought suppression was positively correlated with rumination. Clearly, if cognitive restructuring can cause an individual to ruminate more, as has been suggested (Arch and Craske, 2008); this is going to be particularly detrimental for individuals who are already prone to engaging in repetitive, perseverative thought processes such as worry and rumination.
There are a number of other important reasons why CBT may not be the most appropriate treatment for worry and rumination. Firstly, the “why” and “what if” cognitions that characterize worry and rumination – for example, thoughts such as “what if my child doesn’t get home safely?”, “Why do I feel so depressed?”, “What is wrong with me?”, “What if I never feel better?” – are not easily amenable to cognitive restructuring, as they are difficult (and often impossible) to dispute via argumentation and logic (Arch & Craske, 2008). While worriers and ruminators desperately seek certainty, clarity, and answers to their questions and problems, in most cases, this is just not possible to achieve, and because these cognitions cannot be disputed the individual is left entangled in their chain of thoughts. Also, because worry and rumination involve cycles of the same thoughts, even if an individual is able to successfully dispute a thought, it is more than likely that this same thought will continue to re-occur.

Furthermore, not only is it likely to be futile for individuals to attempt to dispute thoughts that arise during chains of worry and rumination, it may also be detrimental; given that repetitive, uncontrollable and perseverative negative thought are the hallmarks of worry and rumination, is likely that closely engaging with the content of cognitions (which is required for cognitive restructuring) is likely to “add fuel to the fire”, and exacerbate the cycle of repetitive thinking. It is clear that worry and rumination are more than just the sum of the negative cognitions that occur during episodes; they are processes of thought, which are closely linked to the worsening of depression and anxiety symptoms. Worry and rumination are also often supported by a strong scaffolding of positive beliefs about engaging in these processes (Wells & Mathews, 1994; 1996), and therefore do not represent merely a collection of stand-alone thoughts. As such, interventions that focus solely on the content of worry and ruminative thoughts are not sufficient; a notion that has been recognized by the
more recent CBT-based interventions for rumination and worry, such as RFCBT. Rather, treatment needs to look at the context associated with the occurrence of worry and rumination, and to assist the individual to disentangle themselves from these repetitive, perseverative chains of thought.

The empirical research indicates that CBT is not currently as effective as it needs to be in treating worry and rumination. As highlighted by Ballenger et al. (2001), CBT has been found to be less efficacious for the treatment of GAD (the key symptom of which is worry) than for any of the other anxiety disorders. Given the high prevalence of this disorder, it is clear that other therapeutic approaches need to be explored. Furthermore, the body of research of interventions for rumination is small and inconclusive at present. Clearly more widespread improvement is necessary, given that rumination is a key residual symptom of depression, and a mediator of the impact of CBT on depression (Teasdale, et al., 2000; Watkins et al., 2007, 2011). No study has looked at the treatment of rumination and worry in the same individual, which is problematic given that worry and rumination often co-occur in the same individual, and these disorders have been considered to be key transdiagnostic processes common to anxiety and depression (Ehring & Watkins, 2008; Harvey et al., 2004; Topper et al., 2010).

The need for a new treatment for worry and rumination: ACT

To summarise, this chapter has outlined the current psychological interventions which have been applied to rumination and worry, and has established that at present, this offering is clearly limited. The importance of targeting worry and rumination and worry specifically in psychological treatment has also been established, based on the research which positions these cognitive constructs as important contributors to the development, perpetuation, exacerbation, and recurrence of depression and anxiety. It is therefore essential that
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researchers and clinicians continue to explore and improve upon the offering of psychological interventions which can be applied to rumination and worry.

One growing therapy which hasn’t been applied to the treatment of worry and rumination is Acceptance and Commitment Therapy (ACT; Hayes et al., 1999). There are many reasons why ACT would be a useful and potentially valuable treatment of worry and rumination as transdiagnostic processes which occur across a range of psychopathology. Before discussing the rationale for using ACT to treat rumination and worry, it is necessary to establish a theoretical and empirical understanding of ACT. The next chapter will outline the theoretical basis and treatment components of ACT, and will review relevant empirical research on ACT interventions in the aim of establishing a context for the application of ACT to worry and rumination.
Chapter 4. Acceptance and Commitment Therapy

Chapter Overview

This chapter provides a comprehensive review of the theory and research on Acceptance and Commitment Therapy (ACT). The chapter will begin by outlining the theoretical basis of ACT and the ACT model of psychopathology, which accounts for the occurrence of psychological distress via two key constructs: experiential avoidance and cognitive fusion, together which produce psychological inflexibility. The second part of the chapter will focus on the translation of the ACT model into clinical practice, by describing the core treatment processes of ACT: creative hopelessness, acceptance, cognitive defusion, mindfulness, self-as-context, values, and committed action. The third part of the chapter will outline the differences between ACT and cognitive behavioural therapy (CBT), the current dominant psychotherapeutic modality, in order to further illuminate the unique theoretical features of ACT, and how these translate into clinical practice. The final part of the chapter will review clinical studies on ACT for depression, anxiety and transdiagnostic psychological problems in order to establish the empirical evidence base for ACT, and to support the application of ACT to the treatment of emotional disorders in particular. In the conclusion of this chapter, it is argued that there is a need for more research on the effectiveness of ACT for a range of psychological issues.

Theoretical basis

At a broad level, acceptance and commitment therapy (ACT; Hayes, Strosahl & Wilson, 1999) is a mindfulness, acceptance and values-based psychotherapy that is grounded in behavioural and cognitive theory (Hayes, Masuda, & De Mey, 2003). In contrast to other therapeutic approaches, such as cognitive behavioural therapy (CBT), ACT is somewhat unique in that it is built on a complex philosophical and theoretical foundation. At a
philosophical level, ACT is grounded in functional contextualism (Hayes, 1993; Hayes, Hayes, & Reese, 1988; Biglan & Hayes, 1996), a philosophy of science which consists of a number of assumptions and rules used to construct and test theories.

Functional Contextualism serves as a philosophical basis for Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), which is the theoretical foundation of ACT. RFT is a theory of language and cognition that attempts to explain how human beings infer relationships between arbitrary objects (Fox, 2006). A detailed discussion of RFT is beyond the scope of this thesis (see Hayes et al., 1999, for a comprehensive explanation of both functional contextualism and RFT), however the basic premise of RFT is that humans form relationships between stimuli via language and cognition, and that individuals respond to stimuli (or “verbal events”; Hayes et al.) based on these relationships. According to RFT, once the “relational frame” around two stimuli has been established it acts as a cue for how the stimuli will be responded to in the future, and once this frame has been created it is very difficult to break (Wilson & Hayes, 1996). For example, if an individual forms an association between a particular feeling (anxiety) and a specific situation (public speaking), it is likely that future encounters with the situation or even thoughts about the situation will elicit the feeling. Thus, according to RFT, the “events” themselves (anxiety; public speaking) are not what matters, it is the relationships that exist between these events that give them their meaning and their psychological functions.

The ACT Model of Psychopathology

On the grounds of RFT, ACT emphasizes the role of the context rather than the content of language and cognition in psychological distress. According to this model, there are no thoughts, feelings, or other private experiences that are faulty or “wrong”, and psychological disorders and distress are not inherently pathological in themselves (Hayes et
al., 1999). Rather, it is the way individuals relate to these private experiences through language and cognition that is potentially harmful, for example, through the assumption that these experiences must be controlled or suppressed in order to reduce distress, or through an over-reliance on beliefs, rules, fears, and judgments in the regulation of behavior.

Within an ACT framework, there are two key processes which represent maladaptive ways of relating to private experiences: experiential avoidance and cognitive fusion. These constructs are seen as contributing to the development and maintenance of psychopathology via the effects of language. Experiential avoidance occurs when a person is unwilling to remain in contact with particular private experiences (e.g. thoughts, emotions, urges, bodily sensations, memories), and involves “mental and behavioural strategies aimed at changing the form or frequency of one’s current internal experience” (Orsillo, Roemer, & Holowka, 2005, p.11). These strategies can include either suppression, which involves active attempts to control and/or eliminate the experience of negative private events; or situational avoidance, which constitutes the avoidance of or escape from contextual factors which are associated with the emergence of unwanted private experiences (Hayes et al., 2004). Hayes and colleagues (1999) suggest that experiential avoidance has evolved from the generalization of cultural rules which suggest that negative thoughts and emotional states can and should be controlled. For example, common phrases such as, “look on the bright side”, “boys don’t cry”, and “just forget about it”, for example, are seen as perpetuating the idea that one can achieve control over their internal experiences, which creates further distress for individuals when attempts at control are futile (Hayes et al., 2004). According to ACT, experiential avoidance leads to a long-term increase in the frequency and intensity of difficult private experiences, which then leads to the restriction of life activities (López, 2009).
A number of studies across different domains of research have demonstrated the
negative impact of experiential avoidance. In the coping literature, emotion-focused and
avoidant strategies have been found to negatively predict outcome in depression (De Genova,
Patton, Jurich, & MacDermid, 1994), substance abuse (Ireland, McMahon, Marlow, &
Kouzakanani, 1994), and recovery from child sexual abuse (Leitenberg, Greenwald, & Cado,
1992). The research on thought suppression indicates that attempting to suppress a thought
results in it rebounding to a greater intensity than its original state (Wenzlaff et al., 1988).
Wegner and Zanakos (1994) found that depressive symptoms are increased in individuals
who exhibit trait-based avoidance of emotions, particularly when this is also combined with
thought suppression. In a review of studies looking at the relationship between
psychopathology and experiential avoidance, Ruiz (2010) found that the weighted
correlations between the experiential avoidance and depressive and anxiety symptoms were
$r=.55$, and $r=.52$ respectively. Finally, Hayes et al. (1999) suggest that the incorporation of
acceptance (the antidote of experiential avoidance) and mindfulness components into a
number of established psychotherapies (including Dialectical Behaviour Therapy, Linehan,
1993; behavioural marital therapy, Jacobson, 1992; Jacobson, Koerner, & Christensen, 1994;
and emotion-focused therapy, Greenberg & Johnson, 1988) has improved treatment outcomes
is indicative of the role of avoidance in psychological distress. Overall, this literature presents
convincing evidence for the detrimental effects of experiential avoidance and its role in
psychological suffering.

Cognitive fusion is defined as “fusing with or attaching to the literal content of private
experiences whereby we respond to a thought or feeling not just as a thought or feeling but as
the actual event it describes” (Eifert & Forsyth, 2005, p.88). According to ACT, human
beings’ over-reliance on verbally-derived relationships between stimuli means that they are
vulnerable to becoming “fused” with the content of cognitions (Hayes et al., 1999). Through the process of cognitive fusion, thoughts and the actual stimuli or events represented by these thoughts become fused together, such that the functional properties of the stimuli can be present in a psychological sense. Hayes and colleagues suggest that the fact that thoughts can produce panic symptoms is an example of cognitive fusion, because the individual is reacting as if the feared situation is immediately present. The ACT model emphasizes that thoughts themselves are not problematic – rather, it is the fusion with and subsequent avoidance of thoughts, feelings and situations that leads to distress (Hayes et al., 1999).

In view of its conceptualization of psychopathology and philosophical and theoretical foundations, ACT does not attempt to reduce, change, suppress or avoid thoughts, feelings, memories, urges, and emotions. Rather, it aims to reduce the impact or influence of painful private events on the individual (Harris, 2006). ACT views human suffering as normal, and rejects the notion that happiness is dependent on the absence of negative affect (Hayes et al., 1999). Thus, symptom reduction is not an explicit goal of ACT, rather it is seen as a natural consequence of acceptance, defusion from unwanted thoughts, increased engagement with the present experience, and increased engagement in values-consistent action.

Core Treatment Processes

In terms of intervention, the two major goals of ACT are to foster (a) acceptance of problematic, unhelpful thoughts and feelings that cannot be controlled, and (b) commitment and action toward living a life that is consistent with one’s values (Eifert, Forsyth, Arch, Espejo, Keller, & Langer, 2009). These goals are achieved through the six core treatment processes of ACT: acceptance, defusion, contact with the present moment (through mindfulness), the observing self (self-as-context), values, and committed action. In ACT, these treatment processes are not necessarily worked through in sequential order, rather they
are introduced as needed based on the client’s presentation, and are revisited and utilized in a dynamic way throughout the therapeutic process. An additional component of ACT called “creative hopelessness” is incorporated early in treatment, as a means of motivating the client to recognize the futility of control and avoidance behaviours. 

Given ACT’s stance that language is the cause of psychological suffering, therapeutic processes and techniques such as metaphors and experiential exercises are employed to overcome the trap of language. Hayes and colleagues (1999) maintain that changing verbal relations by adding new verbal relations elaborates the existing network of such relations in the mind rather than eliminating it, and that the most effective way of weakening verbal relations is to change the context supporting the verbal process, rather than by focusing on the verbal content. In other words, maladaptive and distressing cognitive content cannot be ameliorated with more cognition, and thus ACT is aimed at facilitating growth through engagement with the present moment, where real opportunity for change is thought to occur.

Creative Hopelessness.

Generally the first therapeutic component in ACT protocols, creative hopelessness involves helping the client to realize that past efforts to change, control and avoid difficult thoughts, feelings, sensations, memories and so forth have not worked, and that the struggle with these difficult private experiences has actually impeded the client’s ability to engage in valued life activities.

Metaphors and experiential exercises are utilized to raise the client’s awareness of the various ways in which they have attempted to both avoid and control difficult internal experiences, for example, through substance use, therapy, positive thinking, numbing, and so forth, thereby establishing the futility (and the costs) of these efforts. The ideal outcome of the creative hopelessness phase of therapy is that the client is ideally able to recognize the
“unworkable change agenda” which has been instilled in them by broader society, that is, the notion that symptom control is a prerequisite for living a happy, fulfilling and successful life (Eifert et al., 2009). Once the individual gains insight into the fact that this agenda is not actually effective, the rationale for acceptance as an alternative to control and avoidance is established.

Acceptance.

Acceptance within ACT is defined as “an active taking in of an event or situation… [an] abandonment of dysfunctional [symptom] change agendas and an active process of feeling feelings as feelings, thinking thoughts as thoughts… and so on” (Hayes et al., 1999, p.77). Acceptance involves opening up to and making room for thoughts, feelings, sensations, urges, and memories, and the client is encouraged to adopt a stance of willingness in the face of the difficult internal experiences that human beings inevitably face. The notion of acceptance in ACT represents the antithesis to the idea that symptoms must be controlled or avoided and that difficult thoughts and feelings need to be absent in order for meaningful therapeutic change and psychological health to occur. Therefore, ACT offers acceptance as the alternative to avoidance, and it is cultivated in therapy to counter the client’s efforts to avoid their difficult private experiences. Importantly, however, acceptance is not framed as being an end in itself, but rather it is developed and used to enable values-consistent change to occur in the individual’s external world (Cullen, 2008).

The ACT therapist encourages acceptance through the use of metaphors and mindfulness techniques. The client is encouraged to experience affect states and bodily sensations, such as anxiety, in the moment, as they occur, rather than trying to control the frequency or intensity of such feelings, as in traditional CBT (Cullen, 2008). It is introduced
early on in ACT sessions, and the practice of acceptance and willingness is thought to allow for valued and committed action to occur.

**Cognitive Defusion.**

Cognitive defusion is employed in ACT to undermine cognitive fusion with thoughts that perpetuate psychological distress and inhibit value-based action. It is ACT’s major tool for dealing with difficult and distressing thoughts, and unlike cognitive therapy, it emphasizes altering the context rather than the content of thought. That is, within an ACT framework, the specific thoughts a client has are not important; what is significant is the meaning people attach to their thoughts and the context in which certain thoughts occur. In light of this, the cognitive defusion component of ACT is aimed at weakening the literality of difficult thoughts (Cullen, 2008), so that the individual is able to avoid getting “caught up” in specific thoughts as well as in the “ruminative trap of cognition” (Arch, 2008, p. 266).

Cognitive defusion is facilitated in therapy via experiential exercises, through which the client is taught to distance themselves from the literal meaning and content of language (by seeing thoughts as thoughts instead of facts), and to be mindful of the continuous ebb and flow of thoughts. For example, a particularly distressing thought, such as “I am worthless” will be inspected, spoken out loud, and repeated until it is seen for what it actually is – a group of words – rather than the actual painful event it describes (Cullen, 2008). Cullen highlights the parallels between cognitive defusion techniques and exposure therapy, in that the more an individual can stay in contact with a painful or uncomfortable thought or feeling, the more likely that the distress associated with that thought or feeling will diminish.

**Mindfulness.**

Mindfulness, which involves the practice of being deliberately and purposefully present in the current moment, is a key process practiced in ACT. Twohig (2012) defines
“being present” as “flexible, fluid, and voluntary attention to internal and external events as they are occurring, without attachment to evaluation or judgment” (p. 503). Thus, mindfulness is considered to help the client to live fully and purposefully in the moment, while accepting difficult private experiences and decreasing the negative impact of language and cognition (Twohig, 2012). Mindfulness is not unique to ACT, with many other therapeutic modalities incorporating this practice, several which were published prior to ACT (e.g., Kabat-Zinn, 1990; Linehan, 1993).

In ACT, mindfulness goes hand-in-hand with the notion of self-as-context or the observing self. The combination of these processes is aimed at assisting the client to experience being in the present moment, observing the self and the surrounding environment, rather than living in their mind and ruminating over past events or worrying about the future (Arch & Craske, 2008; Cullen, 2008). The individual is taught to recognize when they are not in the present, and to flexibly shift their attention (Twohig, 2012). Mindfulness is also an important element of ACT as it helps to counteract experiential avoidance strategies aimed at controlling or reducing discomfort.

**Self-as-Context (The Observing Self).**

As discussed, ACT endorses the differentiation between the content of internal experiences and the context in which these experiences occur (Strosahl, Hayes, Wilson, & Gifford, 2004). That is, distinguishing the “conceptualized self”, or the image of the self that is derived from one’s thoughts, feelings, memories and roles, from the “self-as-context”, or the self that is constant, and which acts as the neutral setting in which these events occur. Twohig (2012) suggests that people attempt to protect or retain the conceptualized self even when this is maladaptive. For example, if a person has labeled themselves as “depressed”,
they may continue to engage in behaviours that perpetuate that self-description, in order to protect the self.

ACT interventions work to develop the individual’s sense of self-as-context in order to assist the client to disentangle themselves from their symptoms and to promote psychological flexibility. With this sense of self, the individual can experience internal and external events and experiences, without being defined by them.

Values.

The strong and explicit emphasis on values in ACT differentiates it from other therapeutic approaches. Arch and Craske (2008) argue that the ultimate goal of ACT therapy is for the client to achieve valued living (via values-driven behavior), and that this is one of the major ways in which ACT differs from CBT, for which symptom reduction is the primary therapeutic objective. Together with committed action, understanding and clarifying values are ACT’s “activation processes”, which assist clients to move forward in their chosen life directions (Cullen, 2008).

Values can be contrasted with goals in that they are pursued in an ongoing way across one’s life, whereas goals are obtainable. In ACT, various exercises are used to assist the client to uncover and clarify their values, in order to help them to regain a sense of life direction that is consistent with these values (Strosahl et al., 2004). For example, the “epitaph exercise” aims to elicit the client’s values by asking them to imagine what they would like to be written about the kind of person they were on their tombstone. As foreshadowed, value-guided exposure is also utilized in ACT, with the aim of increasing one’s ability to live in accordance with their values, while mindfully accepting difficult thoughts and feelings (Arch & Craske, 2008).
Committed Action.

ACT is a behavioural therapy, and the therapeutic component of committed action is a key aspect of therapy. Committed action involves the client choosing to behave in ways that are consistent with their values, and part of the goal of this phase of treatment is to show the client how to gradually build patterns of sustainable, committed, value-driven behaviour (Strosahl et al., 2004). Thus, traditional behavior change procedures such as goal-setting are incorporated into therapy, and barriers (in the form of challenging thoughts, emotional reactions, and other difficulties) are prepared for and worked through. Any behavioural intervention, including exposure exercises and skills training, can be incorporated at this stage as long as it is consistent with ACT processes and principles (Twohig, 2012). What differentiates the committed action component of ACT to behavioural aspects of other therapies is the motivation behind engaging in the behavior – for example, while exposure to feared stimuli may be incorporated into ACT, it is used to assist the client to accept uncomfortable feelings and thoughts so that they can live in better alignment with their chosen values, as opposed to being aimed solely at fear extinction. Thus, the client practices acceptance, defusion, and mindfulness, and self-as-context to deal with potential difficult private experiences that may come up for them as they engage in committed action based on their values.

Committed action is generally the culmination of ACT, as the client is encouraged to draw upon the various other tools of ACT to assist them in defining and engaging in committed action that is grounded in their values and aimed at bringing them closer to where they want their life to be.
Differences between ACT and CBT

Given its emergence as a “third wave” behavioural therapy (Hayes et al., 1999), researchers have inevitably been concerned with trying to define similarities and differences between ACT and traditional CBT. Much of the debate in this literature has been focused on determining whether ACT is meaningfully different to traditional forms of CBT, such as cognitive therapy (e.g. Arch & Craske, 2008; Hayes, 2008; Herbert & Forman, in press; Hofmann & Asmundson, 2008). It is necessary to understand the hypothesized similarities and differences between ACT and CBT and the current state of the debate in this area in order to provide a contextual backdrop in regards to theory and research surrounding ACT, and to evaluate its therapeutic value. In order to evaluate the therapeutic value of ACT in relation to worry and rumination, there is an important need to understand where ACT fits in relation to the current dominant psychotherapeutic modality.

There is consensus regarding the notion that CBT and ACT have distinct conceptual and theoretical foundations, which translate to differing theories of psychopathology. CBT, which Hofmann and Asmundson (2008) suggest is not a single therapy but “a family of interventions that share a number of key treatment approaches and the same general structure” (p. 3), views psychological distress as arising from the presence of maladaptive cognitions, which stem from systematic biases in information processing (Beck, Rush, Shaw, & Emery, 1979). Conversely ACT, as discussed earlier in this chapter, views the root of psychopathology as being psychological inflexibility caused by emotional avoidance, problematic attempts to control internal experiences, and fusion with thoughts and emotions (Hayes et al., 1999). CBT is based on the premise that emotional and behavioural responses are moderated by cognitions, and that cognitions need to be targeted in order to promote psychological change. By contrast, ACT fundamentally rejects the assumptions of the
cognitive model and the notion that the content of cognitions have a causal influence on
emotions and behavior. In line with the theoretical differences in their views of
psychopathology, ACT and CBT have opposing therapeutic goals: whereas the explicit goal
of CBT is symptom reduction, ACT prioritizes behaving consistently with one’s values, and
sees symptom reduction as a possible but not essential consequence of this (Forman,
Chapman, Herbert, Yuen, & Moitra, 2011).

At the heart of the differences between ACT and CBT is the issue of whether to
dispute and restructure maladaptive thoughts or whether to accept and embrace them (Marker
& Abramova, 2011). Consequently, there are differing therapeutic processes associated with
each modality: where CBT focuses on challenging irrational thoughts and substituting them
with rational, adaptive cognitions, ACT advocates mindful acceptance of cognitions,
emotions and symptoms, with behavior alone being targeted for change (Arch & Craske,
2008). CBT’s main approach for dealing with thoughts is through cognitive restructuring,
which involves challenging and reframing automatic thoughts and appraisals in order to
modify deeper belief systems, while ACT endorses cognitive defusion as a strategy for
dealing with difficult cognitions (Arch & Craske). Whereas CBT directly challenges the
evidence surrounding a deeply held negative cognition, ACT focuses not on dealing with the
content of the thought, but instead takes a contextual approach, viewing thoughts as neither
good nor bad (Hayes et al., 1999). ACT’s stance towards how cognitions are dealt with is
influenced by its theoretical and philosophical underpinnings – that is, to target difficult
cognitions with more cognition is viewed as being akin to trying to fight fire with fire, and so
defusion and acceptance strategies are employed in the aim of fostering contact with the
present experience.
In their analysis of the similarities and differences between ACT and CBT, Arch and Craske (2008) highlight the different ways in which the two frameworks approach dealing with emotions and emotional symptoms. Arch and Craske suggest that whereas CBT focuses on the prediction and control of emotions and physiological symptoms with the aim of reducing their frequency and intensity (through strategies such as breathing retraining, relaxation and cognitive restructuring), ACT endorses acceptance of symptoms and the willingness to experience emotions. Arch and Craske suggest, however, that these approaches are not in opposition to one another, and that the lines between the two are blurred. For example, in ACT an individual may see acceptance of emotions as a control strategy if they learn that it can decrease aversive internal stimuli, and mindfulness may increase the predictability of emotions and symptoms. Further, an element of acceptance of difficult emotions and symptoms is required in CBT exposure tasks. Hofmann and Asmundson (2008) take a different approach to conceptualising the differences between ACT and CBT in relation to how emotions are dealt with, suggesting that the critical difference between ACT and CBT is the target of emotion regulation strategies. Based on Gross’ model of emotions (Gross 1998, 2002; Gross & John, 2003; Gross & Levenson, 1997), Hofmann & Asmundson view CBT as involving antecedent-focused emotion regulation strategies, in that therapy aims to change the way that internal and external emotion cues are evaluated, whereas ACT represents a response-focused approach to emotion regulation in that emotional responses are manipulated. Hofmann and Asmundson also share Arch and Craske’s view that acceptance is not exclusive to ACT, and that “acceptance strategies are simply another tool in the arsenal of a CBT therapist to combat emotional disorders” (p. 13).

Based on a close examination of the differences between ACT and CBT, the notion that acceptance strategies are commonly employed in CBT is not entirely accurate. While
acceptance may not be unique to ACT, it is unlikely that even its strongest critics could
dispute its position as the therapeutic modality that most explicitly emphasizes acceptance as
a key therapeutic component and mechanism of change. CBT practitioners may draw on
acceptance strategies, however given that acceptance is not made explicit in CBT treatment
protocols, it is likely that it is often omitted. Furthermore, CBT’s focus on the control,
prediction and reduction of symptoms is clearly incongruent with acceptance. While CBT
therapists may incorporate an element of acceptance as part of exposure therapy, for example,
ultimately this is done with the aim of eventually facilitating change. In ACT, on the other
hand, acceptance is essentially an end in itself, cultivated so that the individual can devote
less effort to struggling against emotional symptoms and more to living their life in a way
that is meaningful to them.

Research has explored the hypothesized mechanisms of change associated with both
ACT and CBT in order to shed light on the efficacy of each therapy. In one of the few studies
to examine mediational effects continuously across time among patients randomised to either
ACT or cognitive therapy (CT), Forman and colleagues (2011) explored the therapeutic
drivers of change in both conditions. In the study, 174 individuals with anxiety and/or
depression were randomly assigned to the ACT or CT condition, and completed an
assessment of theorized mediators and outcomes before each session. The results revealed
that for individuals in the CT condition, therapeutic outcomes were mediated by the increased
use of cognitive and affective change strategies (such as challenging and restructuring
dysfunctional cognitions, and distraction from unhelpful thoughts and feelings) relative to
utilization of psychological acceptance strategies, whereas for individuals in the ACT
condition, the mediation effect was in the opposite direction. Furthermore, equivalent
mediators across both conditions were decreases in self-reported dysfunctional thinking,
cognitive defusion, and willingness to engage in behavioural activity despite unpleasant thoughts or emotions.

Also in pursuit of clarifying the mechanisms of action in ACT and CBT, Zettle, Rains, and Hayes (2011) reanalyzed data from Zettle and Rains’ (1989) randomized clinical trial of ACT versus CT, excluding a third condition involved in the original research, which comprised of a modified form of CT that did not include distancing. In analyzing data from 80 females with depression on the Beck Depression Inventory (BDI; Beck et al., 1961) Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980), and Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978). Zettle et al. found that there was no significant effect of treatment condition, but a significant effect for time and interaction of condition and time such that BDI scores improved in the ACT condition to a significantly greater degree across time than in the CT condition. Participants in the ACT condition experienced reduced occurrence of and believability in depression-related thoughts, and cognitive defusion effects accounted for more of the differences in follow-up outcomes between ACT and CT. Changes in dysfunctional attitudes did not mediate outcomes. Zettle and colleagues argue that the results suggest that early differences in ACT and CT processes of change predict ultimate outcomes, which, they argue, is evidence that ACT and CT are theoretically distinct models and methods.

While there are certainly some theoretical and conceptual differences between ACT and CBT – pertaining primarily to their therapeutic goals, approach to cognitions, and emphasis on acceptance – there is ongoing debate in the literature regarding just how salient these differences are, and what each approach’s hypothesized theoretical differences actually mean for client outcomes. While Hayes and colleagues (1987; Hayes et al., 1999) argue that ACT and CBT are vastly different in terms of their theoretical foundations, principles,
assumptions, and application, other researchers have concluded that there are more similarities than differences between ACT and CT/CBT, but that this is not a criticism of ACT (Arch & Craske, 2008; Heimberg & Ritter, 2008; Herbert & Forman, 2011). Herbert and Forman (2011) maintain that there is significant overlap between ACT and CBT, and that the most critical differences between these approaches are the level of theory and philosophy. Researchers have also suggested that focusing too much on the differences between ACT and CBT only amplifies these differences and is not helpful in moving the field forward, it may limit exploration of the common mechanisms underlying effective therapies (Arch & Craske, 2008; Herbert and Forman, 2011). Importantly, Herbert and Forman argue that, in order to maximize outcomes for clients, therapists from each model need to recognize that there are certain contexts in which the other therapy may be more appropriate.

**Empirical Research on ACT**

The empirical status of ACT remains an issue of contention and one that features heavily in the “ACT versus CBT” debate, due primarily to the fact that the body of research looking at the efficacy of ACT is small relative to CBT and other more established therapies. This is to be expected given that compared to CBT ACT is a relatively new therapy; and gathering clinical and empirical evidence takes time. Clinical and experimental studies have, however, yielded some positive findings regarding the efficacy of ACT in treating a range of disorders.

In the attempt to clarify its status amongst established therapies, three separate meta-analyses have looked at the efficacy of ACT in relation to a range of conditions (Hayes et al., 2004; Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009; Öst, 2008). In an initial meta-analysis of the efficacy of ACT in 12 randomised controlled trials (RCTs), Hayes,
Luoma, Bond, Masuda, & Lillis (2006) found a mean controlled effect size of $d=0.48$ across ACT studies.

Öst (2008) conducted the first independent review of ACT, in addition to other third wave behaviour therapies. All therapies were assessed against a sample of comparative CBT studies, using a psychotherapy outcome study methodology rating scale to evaluate whether the therapies constitute empirically-supported treatments (ESTs). A total of 13 ACT randomized control trials (RCTs) looking at a range of psychiatric and non-psychiatric disorders (for example, maths anxiety) were reviewed, with a total of 677 participants across all studies. The mean effect size was 0.68 ($z=5.11, p>0.001$), which constitutes a moderate effect. Two studies found significantly better treatment effects than psychological placebos, and four found ACT to be significantly better than treatment as usual (TAU), but were deemed by the author to have too many methodological issues to be considered “good” research. The two studies considered methodologically sound did not find ACT to be superior to comparison therapies. On the basis of his review, Öst concluded that none of the third wave therapies fulfilled criteria for ESTs, and that overall the third wave therapy RCTs used research methodologies that were significantly less stringent than those used in CBT studies. Gaudino (2009), however, cautions that these conclusions needs to be considered in light of the fact that a re-analysis of Öst’s data revealed that 38% of the ACT studies included could not be “matched” with a CBT study because the studies looked at different disorders, and that for the most part, the treatment populations included in the ACT studies were more complex and more resistant to treatment than those included in the CBT studies.

The most recent ACT meta-analysis (Powers et al., 2009) included 18 randomized control trials comparing ACT to either control conditions or established treatments (CBT and CT). Studies without control conditions were omitted from the meta-analysis. The measure of
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effect size used in the study was Hedges’ $g$, which can be interpreted equivalently to Cohen’s convention of small (0.2), medium (0.5), and large (0.8) effects. The overall results of the meta-analysis suggested that ACT performed significantly better than control conditions ($g = 0.42$), with the average participant in an ACT condition improving 66% more than participants in control conditions. However, ACT was not significantly more effective than established treatments overall, and was not superior to control conditions for anxiety and depression (effect size = 0.03). In spite of this, Powers et al. suggest that the effects of ACT are promising, given that it is not uncommon to fail to find a significant difference between established treatments (for example, comparing CBT with CT and exposure therapy; Powers, Sigmarsson, & Emmelkamp, 2008). Interestingly, Levin and Hayes (2009) re-analysed the data reported in Powers and colleagues’ meta-analysis, and concluded that ACT actually performed better than CBT and CT ($g = 0.27; p = .03$).

**ACT for depression and anxiety.**

Of particular significance to the present discussion is the literature on ACT for depression and anxiety, given that rumination and worry are central features in these disorders. Several studies have examined the efficacy and effectiveness of ACT in treating depression and anxiety disorders. Some of these have utilized experimental designs to compare the outcomes of ACT versus CBT; others have looked at the effectiveness of ACT through single or multiple case reports, by comparing pre- and post-treatment data. Given ACT’s theoretical view of what improvement entails (that is, reduced experiential avoidance and increased engagement with values), most ACT studies also include measures of ACT-related constructs and quality of life or life functioning.

Interestingly, in spite of the fact that worry and rumination are increasingly recognized as key components in the onset and maintenance of depression and anxiety
disorders, the ACT treatment literature (like the CBT literature) does not reflect this. While
ACT emphasises the importance of changing the context of maladaptive cognitions and
thought processes, the treatment of worry and rumination has not been given theoretical nor
empirical attention until now. While it is assumed that the treatment protocols utilized in the
studies described below addressed client participants’ worry and rumination to a certain
extent through the ACT processes of cognitive defusion and mindfulness, which are aimed at
helping individuals to manage the impact of their difficult and distressing thoughts), the
literature has not explicitly discussed the application of ACT to worry and rumination as
transdiagnostic constructs. The next section will review the empirical literature on the
application of ACT to samples of individuals with anxiety, depression, and transdiagnostic
psychological problems featuring anxious and depressive symptomatology.

**ACT for anxiety.**

Studies have looked at the impact of ACT as a treatment for most of the anxiety
disorders, including GAD, social phobia, OCD, panic disorder, PTSD and mixed anxiety
problems.

Two randomized clinical trials have been conducted comparing the efficacy of ACT
and CBT for mixed anxiety disorders. In a recent study by Arch, Eifert, Davies, Plumb
Vilardaga, Rose, & Craske (2012), 128 individuals with heterogeneous anxiety disorders
received 12 sessions of either ACT or CBT, delivered by clinical psychology doctoral
students. Both treatments involved behavioural exposure. Participants were assessed at pre-
treatment, post-treatment, and 6 and 12-month follow up on anxiety specific measures
(principal disorder Clinical Severity Ratings [CSRs], Anxiety Sensitivity Index, Penn State
Worry Questionnaire, Fear Questionnaire Avoidance) and non-specific-anxiety measures
(Quality of Life Index [QOLI], Acceptance and Action Questionnaire-16). Findings revealed
that ACT and CBT showed substantial and similar improvement across all measures, however ACT showed steeper CSR improvements and higher psychological flexibility than CBT during follow-up, and lower CSTs than CBT at 12-month follow-up. However, more ACT than CBT patients utilized outside therapy during the initial follow-up interval. ACT was associated with higher scores on the AAQ-16, whereas CBT was associated with higher QOLI scores.

An RCT comparing the efficacy of ACT and CBT for anxiety in a group therapy context is currently being undertaken at the University of New South Wales (Glaser, Blackledge, & Deane, 2008). This study is comparing the impact of a 6-session ACT group treatment program with a 6-session CBT treatment program on mild to severe mixed anxiety problems among students. Preliminary data suggest that the ACT and CBT produced equivalent results at post-treatment, however participants from the ACT group reported fewer anxiety symptoms than the CBT group at 12-month follow-up. This represents early support for the efficacy of ACT run as a group therapy.

Two case studies have looked at the effectiveness of ACT for mixed anxiety disorders. Eifert and colleagues (2009) conducted a study looking at the impact of ACT for 3 individuals with differential anxiety disorder diagnoses. Treatment involved 12 weeks of individual therapy sessions lasting 1 hour each, delivered by three advanced doctorate clinical psychology students. The treatment followed the manual developed by Eifert and Forsyth (2005). The results of this study showed positive pre- to post-treatment changes in ACT-relevant process measures (experiential avoidance, acceptance and mindfulness skills), increases in quality of life, and significant reductions in traditional anxiety and distress measures.
Codd, Twohig, Crosby and Enno (2011) also utilized a case series design in exploring the impact of ACT on three individuals with anxiety disorders (panic disorder with agoraphobia, comorbid social phobia and GAD, and PTSD) in a private practice setting. Clients received 9-13 sessions of ACT, and in-session exposure therapy was not utilized in order to better allow the effects of ACT to be determined. Clients completed measures of symptomatology and acceptance before and after treatment, in addition to a weekly measure of avoidance and anxiety. Following treatment, participants showed clinical reductions in anxiety severity, which were maintained at 8-month follow-up. Weekly data revealed marked reductions in avoidance throughout the course of treatment but very little change in anxiety, with the authors suggesting that these results indicate that an anxiety disorder can be effectively treated by focusing on the functional impact of anxiety on behavior, rather than the level of anxiety. Thus, these results are consistent with the ACT model. Furthermore, exposure was not necessary to produce changes in anxiety severity.

Two studies have explored the application of ACT to GAD, a chronic condition for which CBT has been found to be ineffectual for a significant proportion of sufferers (Gould, Otto, & Pollack, 1995). In a study by Roemer and Orsillo (2007) which employed a single-group repeated measures design, 16 participants with diagnosed GAD received 16 sessions of individual ACT, the structure for which was derived from a treatment manual developed specifically for the study. The therapists were the authors and doctoral students. Results from client questionnaires and clinician ratings showed significant improvements of a large magnitude in GAD, worry, anxiety and depressive symptoms immediately following the completion of therapy as well as at a 3-month follow up, and participants displayed a significant decrease in avoidance of internal experiences. Limitations of this study are the
lack of control group, and the fact that effect sizes of improvement decreased between post-treatment and follow-up.

Wetherall and colleagues (2011) examined the impact of ACT for GAD in older adults. In this pilot investigation, seven older primary care patients with GAD received 12 individual sessions of GAD, and nine received CBT. Participants in the ACT group experienced significant reductions in worry and depression following the intervention, however reductions in anxiety were non-significant. Participants in the CBT condition experienced significant reductions in depression and anxiety, however reductions in worry were not significant. Interestingly, all ACT participants completed treatment, whereas four individuals in the CBT group dropped out.

Three studies have looked at the effectiveness of ACT interventions for social phobia. Ossman, Wilson, Storaasli, and McNeil (2006) conducted a preliminary investigation of the effectiveness of a group ACT intervention for social phobia. 12 adults diagnosed with social phobia received 10 two hour sessions of group ACT, the protocol for which was based around the central therapeutic elements of ACT and incorporated exposure, however no symptom-specific work included. The intervention was associated with a significant decrease on the social phobia and experiential avoidance measures at post-treatment and follow-up, with effect sizes of 0.83 and 1.71 respectively. In addition, participants’ ratings of effectiveness in living (specifically in social relationships) significantly increased at follow-up. This study provides support for the ACT theoretical model in that social phobia symptoms decreased despite the fact that they were not specifically targeted as part of the treatment. Ossman and colleagues suggest that this symptom reduction may have occurred as a consequence of participants’ increased willingness to experience difficult emotions and engage in social behaviours that are values-consistent, but were previously avoided.
Dalrymple and Herbert (2007) conducted a pilot study on the effectiveness of ACT for Generalised Social Anxiety Disorder with a sample of 19 individuals diagnosed with social anxiety. The intervention incorporated a 12-week program incorporating ACT in addition to exposure techniques. Analyses of the findings revealed no changes across a 4-week baseline control period, followed by significant improvements in symptoms and quality of life from pre-treatment to follow-up. There were large effect size gains, which were similar to those obtained by previous studies that have examined CBT for SAD. Treatment also resulted in significant changes in quality of life and ACT-consistent process measures, and earlier changes in experiential avoidance independently predicted later changes in symptom severity. The authors suggest, therefore, that further exploration of experiential avoidance as a potential mechanism of change in ACT is necessary.

Two studies have been conducted on ACT for obsessive-compulsive disorder (OCD). In a multiple baseline design involving four participants, ACT yielded positive outcomes for all participants (Twohig, Hayes, & Masuda, 2006). In a randomized clinical trial comparing ACT with progressive relaxation training (PRT) for OCD (Twohig et al., 2010), 79 adults with OCD received 8 sessions of either therapy, with no in-session exposure. Analyses revealed that ACT resulted in greater changes in OCD severity than PRT at post-treatment and follow-up, and produced greater changes on depression measures amongst participants reporting at least mild depression before treatment. Furthermore, quality of life improved in both conditions, but was marginally higher in the ACT condition at post-treatment.

Two studies have looked at the application of ACT for panic disorder with agoraphobia. Meuret, Twohig, Rosenfiled, Hayes and Craske (2012) conducted a pilot study on brief ACT for panic disorder, in which 11 patients with panic disorder with or without agoraphobia received four sessions of ACT followed by six sessions of exposure therapy. The
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intervention was associated with clinically significant improvements in panic symptom severity, increased mindfulness, and reductions in avoidant behavior. In a case study by López (2000), 12 sessions of ACT (which included exposure) resulted in notable reductions on all anxiety measures, a moderate reduction in worry (measured by the PSWQ), and substantial reduction in the frequency of panic attacks and engagement in escape behaviour.

Finally, the application of ACT to PTSD is beginning to be explored. In a case study by Twohig (2009), an adult woman with treatment-resistant chronic PTSD and major depressive disorder was treated with 21 sessions of ACT for PTSD. Assessments undertaken throughout the intervention revealed significant reductions in PTSD severity, depression, anxiety, and trauma-related thoughts and beliefs, and an increase in psychological flexibility.

Act for depression.

Fewer studies have explored the impact of ACT on depressive disorders. Six RCTs have been conducted on ACT for depression. In an early study by Zettle and Rains (1986), 18 females with depression were randomly assigned to “comprehensive distancing” (CD, an early form of ACT; Hayes, 1987) cognitive therapy, delivered in individual format. Outcomes revealed that participants who received CD displayed a significantly greater decrease in depression, relative to individuals in the cognitive therapy condition (as measured by the Hamilton Rating Scale for Depression; HRSD).

Zettle and Rains (1989) randomly assigned 31 depressed females to one of three treatment conditions: CD, complete cognitive therapy, and partial cognitive therapy (which did not include distancing strategies). Following treatment, all three groups displayed significant symptom improvement in depression, automatic thoughts, and dysfunctional attitudes. While there were no significant differences in treatment condition on any outcome measure and all conditions reported experiencing a decrease in the frequency of negative
automatic thoughts (as measured by the ATQ), individuals in the ACT condition reported rapid decrease in the believability of thoughts from pre- to post-treatment, relative to the cognitive therapy groups. This finding is consistent with the ACT model in that a goal of therapy is to teach individuals to defuse from the content of thoughts and see them as merely thoughts instead of facts. However, in terms of providing support for the efficacy of group ACT for depression, Forman et al. (2007) note that this study should be interpreted with caution, CD differs in many ways from modern ACT, and neither the ACT nor the CT protocols used in the study were as behaviourally-oriented as current standards. Furthermore, like the studies discussed earlier, this study had a small sample size.

Bohlmeijer, Fledderus, Rokx and Pieterese (2001) explored the efficacy of an early intervention based on ACT for adults with depressive symptomatology in an RCT. Ninety-three adults with mild to moderate depressive symptomatology were randomly assigned to either the ACT intervention or to a wait list control group. Treatment was group-based, comprising of eight two-hour weekly sessions delivered by psychologists. Participants completed measures of depression, anxiety, fatigue, alcohol use and acceptance before and after the intervention, and at three-month follow-up. The intervention resulted in a significant reduction in depressive symptomatology, anxiety and fatigue, and changes in depressive symptomatology were maintained at the three-month follow. Importantly, the follow-up effects were mediated by an increase in participants’ levels of acceptance.

Hayes, Boyd, and Sewell (2011) conducted a pilot study on ACT for the treatment of depression amongst adolescents clinically referred to a psychiatric outpatient setting. Thirty adolescents diagnosed with depression were randomly allocated to receive either ACT or treatment as usual (TAU), being CBT. Study outcomes revealed that ACT participants showed significantly greater statistical improvement on depression measures than TAU
participants, with. Measures of global functioning revealed significant improvements for both groups, however clinical change measures supported the ACT group only, with 58% of adolescents in this condition showing clinically reliable change. Data taken at the 3-month follow-up suggested that improvements observed at post-treatment increased in magnitude.

Folke, Parling, and Melin (2012) explored the effectiveness of ACT for depression in individuals on long-term sick leave amongst a sample of 34 unemployed Swedish adults. The study compared the effectiveness of an ACT intervention to a non-standardised control condition. Findings revealed that participants in the ACT condition improved significantly on measures of depression, general health and quality of life from pretreatment to follow-up (18 months), relative to the control condition. However, the conditions did not differ at any point in employment status or sick leave, with large proportions of both groups remaining on disability pensions.

In a study conducted in 2007, Forman and colleagues compared ACT and cognitive therapy (CT) as treatments for both anxiety and depression. This study involved a comparatively large sample of 101 outpatients reporting moderate to severe levels of anxiety and/or depression. Participants were randomly allocated to either the ACT or the CT condition, and minimal exclusion criteria were used in order to enhance the generalisability of the findings to a wider community population. The therapists were doctoral students with no prior experience with either model. The ACT and CT conditions yielded equivalent results in terms of large improvements in depression, anxiety, functioning difficulties, quality of life, life satisfaction, and clinician-rated functioning. However, the mechanisms of change for each model were different: change amongst participants in the CT condition was mediated by observing and describing one’s experiences, while change in the ACT condition was mediated by experiential avoidance, acting with awareness and acceptance. Limitations
associate with this study include the fact that there was no control (wait list) group, and that a high number of participants (42.2% of the CT group and 33.9% of the ACT group) did not complete treatment.

**ACT for transdiagnostic psychological problems.**

In line with the fact that ACT views the same mechanisms as underlying all psychopathology, several studies have explored the effectiveness of ACT as a transdiagnostic therapy, that is, without including any symptom-specific therapeutic components.

A Finnish study compared individual CBT and ACT therapy administered by student therapists (Lappalainen et al., 2007). There were 28 participants involved in the study, most of whom sought treatment for depression/mood problems and interpersonal problems (there was no inclusion or exclusion criteria). Participants were randomly assigned to either the ACT or CBT conditions, and each therapist was allocated one CBT client and one ACT client. Treatment consisted of 10 individual sessions, and both methods of therapy were manualised. Client outcome data was collected 3 times – between sessions 1 and 2, after the last treatment session, and 6 months after treatment completion. Results indicated positive results for both models in terms of improvement in psychopathological symptoms, depression, social functioning, mood and life satisfaction, and ACT clients showed better symptom improvement overall (as indicated by scores on the SCL-90 GSI (Global Severity Index of SCL-90; Derogatis & Cleary, 1977). At post-treatment, CBT had improved clients’ self-confidence to a greater degree than ACT, and ACT improved acceptance to a greater degree than CBT. Lappalainen and colleagues suggest that the use of student therapists was a strength of the study in that the therapists did not have extensive previous experience with either ACT or CBT, which minimizes allegiance effects and makes the findings more generalisable. However, limitations of this study include the fact that some aspects of CBT
with less specific empirical support were not included (e.g. cognitive restructuring), and some therapy techniques such as clarification of treatment goals and homework were included in both therapies. In addition, the sample size was small and the study did not target a specific clinical disorder, however the authors argue that this enhances the generalisability of the findings.

Clarke, Kingston, Wilson, Bolderston and Remington (2012) also conducted a study with a transdiagnostic sample, looking at the impact of ACT on treatment resistant clients. There were 10 participants in the study, all of whom met criteria for Axis I presentations, and half of whom met criteria for Axis II disorders. Treatment, which was delivered in groups over 16 weeks, led to significant improvements in psychological complaints, depression, quality of life at post-treatment, acceptance and mindfulness at 6- and 12-month follow-up. The most marked reductions in symptomatology occurred at 6-month follow-up.

Markanday and colleagues (2012) looked at the application of ACT for treatment-resistant depression in a sample of 19 individuals with treatment-refractory mood and anxiety disorders. A manualised ACT intervention was delivered within a group setting, over the course of four weekly sessions lasting 3 hours each. The intervention resulted in significant improvements of participants’ scores on the AAQ-II and the Self-Compassion Scale (Neff et al., 2007), which incorporates measures of self-kindness and mindfulness, and has been found to be correlated with anxiety and depression. Interestingly, Markanday et al. did not incorporate traditional measures of psychological symptomatology into this study, and did not include a follow-up assessment phase.

The empirical status of ACT.

Based on the literature discussed, it is clear that research has yielded some very promising findings regarding the effectiveness of ACT in treating anxiety disorders and
dep from worry and rumination

To summarise, the results of RCTs suggest that ACT performs just as well as CBT in treating depression and anxiety, with some studies suggesting that ACT may result in superior and longer-term symptom improvement (Arch et al., 2012; Bohlmeijer et al., 2011; Glaser et al., 2008; Forman et al., 2007; Lappalainen et al., 2007; Zettle & Rains, 1989). Case studies and single group effectiveness studies lend further support, suggesting that ACT is an effective treatment for GAD (Roemer & Orsillo, 2007; Wetherall et al., 2011), social phobia (Dalymple & Herbert, 2007; Ossman et al., 2006), OCD (Twohig et al., 2006; 2010), panic disorder with and without agoraphobia (López, 2000; Meuret et al., 2012), PTSD (Twohig, 2009), depression (Folke et al., 2012; Hayes et al., 2011).

Importantly, the research also indicates that ACT is associated with enhanced acceptance (Bohmeijer et al., 2001; Forman et al., 2007), mindfulness (Meuret et al., 2012), and psychological flexibility (Twohig, 2009), and reduced experiential avoidance (Dalymple & Herbert, 2007; Ossman et al., 2006). While few, the mediation analyses that have been done lend some support to the mediational effect of experiential avoidance and acceptance in producing symptom improvement (Bohmeijer et al.; Forman et al.). ACT has also been associated with improvements in quality of life (Clarke et al., 2012; Dalrymple & Herbert; Forman et al.; Twohig et al., 2010), self-compassion (Markanday et al., 2012), and effectiveness in living (Ossman et al.). Interestingly, none of the studies described included a measure of valued living, which is surprising given that this is one of the key hypothesized indicators of improvement within an ACT framework.

In spite of the results of this relatively small albeit convincing body of research, there remain some areas of contention and confusion in the literature in regards to the empirical status of ACT. In attempting to reconcile this and reach a conclusion about the empirical
status of ACT based on the findings of the meta-analyses described earlier (Öst, 2008; Power et al., 2009), Ruiz (2010) finds that: (1) ACT is better than control and TAU conditions (Hayes et al., 2006; Öst, 2008; Power et al., 2009); (2) more evidence is required to determine if ACT is better than established treatments (Levin & Hayes, 2009; Powers et al., 2009); (3) the RCTs conducted in ACT literature have methodological issues that could be improved (Öst, 2008).

One thing that both ACT and CBT researchers are in agreement about is that there is a need for more research to be undertaken to further clarify the effectiveness of ACT in relation to a range of psychological issues. The next chapter of this thesis will discuss the application of ACT to worry and rumination by outlining a theoretical rationale for this application and the research evidence which provides support for this.
Chapter 5. The Application of Acceptance and Commitment Therapy to Worry and Rumination

Chapter Overview

The preceding chapters have established the importance of treating worry and rumination with targeted psychological interventions, and the limitations of the current treatment options have been highlighted. Acceptance and Commitment Therapy (ACT) has been proposed as a potentially effective treatment for worry and rumination, and a detailed outline of ACT has been provided to support this contention. As highlighted in Chapter 4, studies which have examined ACT in the treatment of anxiety and depression have not included an explicit focus on worry and rumination, in spite of the fact that there is very strong theoretical rationale for applying ACT in this area. This chapter will bring together the previous three chapters by providing a comprehensive rationale for the application of ACT to worry and rumination. In the first part of the chapter, a theoretical rationale for applying ACT to the treatment of worry and rumination will be provided. This rationale will draw on the theoretical consistency between the ACT model of psychopathology and the avoidance theory of worry and rumination, and the congruence between the characteristics of worry and rumination and the ACT therapeutic processes. The second part of this chapter will review the existing research on ACT for worry and rumination, which consists of three studies on ACT for worry in the context of GAD, and one study on ACT for rumination.

ACT for worry and rumination: theoretical rationale.

A key reason for the logical fit between ACT and worry and rumination is that conceptualisations of worry and rumination as mechanisms of experiential avoidance are theoretically consistent with the ACT model of psychopathology. As discussed in Chapter 1, Borkovec’s (1994) prominent avoidance model of worry suggests that chronic worry and
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GAD are maintained by experiential avoidance of uncomfortable psychological experience. Rumination has also been conceptualized as a form of experiential avoidance, and preliminary research has supported this perspective (Cribb et al., 2006; Giorgio et al., 2010; Nolen-Hoeksema et al., 2008). Furthermore, avoidance has also been linked to both worry and rumination in a behavioural sense, in that people who worry and ruminate commonly respond to unwanted thoughts with avoidance behaviours such as thought suppression and distraction, which often lead to a resurgence of negative thoughts and emotionality (Harrington, 2008; Nolen-Hoeksema et al., 2008). In light of the conceptualization of worry and rumination as forms of experiential avoidance, ACT is a highly appropriate and relevant treatment approach, as it specifically targets experiential avoidance in reducing psychological distress. In ACT, acceptance – the antidote to experiential avoidance – is cultivated as an alternative to strategies aimed at avoiding unwanted private experiences. Thus, if the individual is able to adopt an accepting standpoint in relation to their difficult emotions and cognitions and “make space” for their occurrence, this should reduce the impetus to manage difficult psychological experiences by worrying and ruminating.

Researchers have highlighted the logical application of ACT to rumination and worry because of its emphasis on acceptance as an alternative to avoidance of difficult thoughts and emotions. Arch and Craske (2008) and Twohig (2012) have noted that acceptance may be a much more viable approach to dealing with cognitions like worry and rumination, which (as previously discussed) are difficult to dispute via argumentation and logic. That is, for individuals who experience pathological worry and rumination, learning to accept that they experiencing these thought processes rather than trying to grapple with them each time they occur is likely to be a far more feasible and adaptive strategy. This is also likely to be a more sustainable way of managing worry and rumination in the long-term, which is necessary
given that rumination and worry have been found to be relatively stable in individuals
(Bagby, Rector, Bacchiochi, & McBride, 2004; Just & Alloy, 1997; Kuehner & Weber, 1999;
Nolen-Hoeksema et al., 1993; Nolen-Hoeksema et al., 1994). Acceptance may also provide
an alternative to thought control strategies that are targeted at suppressing worry and
ruminative thoughts, which research has been found to be ineffective in the long-term (e.g.
Nolen-Hoeksema et al., 2008; Wenzlaff et al., 1988).

Another important theoretical reason for applying ACT to the treatment of worry and
rumination is ACT’s approach to dealing with cognition. Given that ACT focuses on
fostering a context of acceptance surrounding the occurrence of distressing thoughts, rather
than encouraging the engagement with the specific content of cognitions, an ACT approach
should allow the individual to bypass the negative effects of thoughts suppression and
cognitive restructuring, which have been found to be particularly detrimental for those who
worry and ruminate excessively, leading to the exacerbation of repetitive negative thoughts
(Beevers & Meyer, 2008; Hayes et al., 1999). While CBT “keeps an individual caught up in
the cognitive world” (Twohig, 2012, p.), the cognitive defusion component of ACT may be a
valuable therapeutic strategy in helping the individual to distance themselves from the
repetitive, seemingly uncontrollable processes of worry and rumination, by helping to
undermine the literality of the cognitive content in these chains of thought. That is, the
individual would learn to identify when they have become “caught up” in a cycle of worry or
rumination, and could employ cognitive defusion techniques to distance themselves from the
literal content of their thoughts. Thus, cognitive defusion provides a framework and specific
techniques to release the individual is released from an internal struggle aimed at trying to
suppress or change their thoughts, and is therefore afforded more opportunity to engage in the
external world, in which effective changes can be made. As discussed in the previous chapter,
this approach to managing cognitions is particularly suited to worry and rumination, given the futility of attempting to dispute thoughts that are generally immutable to rational logic, and which are likely to continue to re-occur in spite of disputation attempts.

Acceptance and cognitive defusion are facilitated by mindfulness, and the strong emphasis of “being present” in ACT means that it is likely to be a highly useful approach for targeting worry and rumination. Twohig (2012) proposes that rumination and worry can be seen as the antithesis to being present, given that during these chains of negative repetitive thought the individual is stuck in the cognitive world in their mind. When an individual is worrying excessively they are not engaged in their present experience, they are mentally “fused” with thoughts of possible future threat. When someone ruminates, they are fused with perceived past failures and attempts at making sense of their problems and symptoms, rather than attending to their external world with mindful awareness. Mindfulness skills taught in ACT are likely to assist the individual to notice when they mentally caught up in a chain worry or rumination, and to refocus their attention to the present moment.

The empirical research on mindfulness for worry and rumination (summarized in Chapter 3) lends support for the ACT’s effectiveness in treating negative repetitive thought. Sugiura (2004) found evidence for a negative relationship between worry and mindfulness, suggesting that as mindfulness increases, level of worry declines. Evans and Segerstrom (2010) established that mindfulness was correlated with less total repetitive thought, and with more positively valenced repetitive thought. Research by Watkins and various colleagues has found that mindfulness assisted depressed ruminators to shift themselves away from their ruminative thoughts and towards more effective problem-solving strategies and improvement in the quality of their thinking (Watkins & Baracaia, 2002; Watkins, 2004; Watkins & Teasdale, 2004). The findings of the treatment studies on mindfulness for worry and
rumination suggest that mindfulness is effective in reducing worry and rumination (Craigie et al., 2008; Evans et al., 2008; Hilt & Pollack, 2012; Teasdale et al., 2000). A number of researchers have also highlighted the intuitive fit and potential value associated with using mindfulness to manage worry and rumination (Schmaling et al., 2002; Roemer & Orsillo, 2002; Wenzlaff & Luxton, 2003). Schmaling and colleagues note: “to the extent that rumination characterizes depression, an intervention that cultivates the development of an observant, aware, and nongrasping mind may be more useful in stopping rumination than teaching the episodic skill of problem solving” (p. 355).

ACT’s incorporation of acceptance, cognitive defusion, and mindfulness make it highly conducive to the treatment of worry and rumination. As discussed in Chapter Three, elements of these therapeutic components are present in some of the more recent interventions for worry and rumination, which target the process-related aspects of worry and rumination as opposed to cognitive content. For example, worry exposure (Craske et al., 1992) can be seen as a form of cognitive defusion in that it facilitates change in one’s relationship with distressing mental images, as opposed to attempting to change the thoughts and images themselves. RFCBT (Watkins et al., 2007) encourages individuals to be mindful of when they begin to engage in rumination, to accept this cognitive process rather than attempting to minimize or eliminate its occurrence, and to focus change efforts on behavior alone. There is also a growing interest in the application of mindfulness to the treatment of both worry and rumination. MBCT, which has been found to be effective in the treatment of worry and rumination, does not engage with the content or specific meaning of thoughts, and emphasizes the view that “thoughts are not facts” and “I am not my thoughts” (Teasdale et al., 2000, p. 116– statements which would commonly form part of an ACT therapy session
also. The fact that these treatments have been found to be effective provide support for the hypothesis that ACT should also be effective in treating worry and rumination.

There are also strong reasons why the other key aspects of ACT – self-as-context, committed action and values – would be beneficial in the treatment of worry and rumination. Self-as-context interventions should promote wellbeing and psychological flexibility by assisting the individual to distinguish their self-image that is derived from their ruminations and worries from the self that is the constant and neutral setting in which these events occur. Given that rumination and worry interfere with instrumental behaviour (Nolen-Hoeksema et al., 2008) the committed action and values components of ACT may assist individuals in defusing from repetitive, aversive thoughts and making positive changes in their lives that are consistent with their values. These therapeutic components are yet to be explored and evaluated in the treatment of worry and rumination.

No ACT technique is designed to be delivered in isolation, and it is likely that all ACT therapeutic processes would complement each other in alleviating worry and rumination in individuals with anxiety and depression. The combination of acceptance, mindfulness and cognitive defusion may allow the individual to notice when they are engaging in worry or rumination, tune into the underlying emotion and practice willingness to experience it, defuse from worry or ruminative cognitions, and redirect their attention to the present where there is the capacity for values-guided, committed action, which is likely to alleviate depressive and anxious symptomatology. For example, through ACT training, an individual would learn to notice and observe their thoughts without having to struggle with them; they may also learn to identify when they are becoming entangled in a chain of worry and ruminative thoughts, and would able to notice and accept this habit of their mind, without going deeper into the thoughts in the attempt to try to understand or dispute them. They would use mindfulness and
acceptance techniques to “make space” for any underlying distressing emotion which may be present, which the episode of worry or rumination may have been triggered in the attempt to avoid. With greater awareness of their mental processes and increased engagement with the present moment, they have the flexibility to implement meaningful, values-based action. The repeat occurrence of this process is likely to lead to improved outcomes for the individual, in both their internal and external worlds. Thus, as highlighted by Twohig (2012), ACT may provide a way for sufferers of chronic rumination and worry to bypass these processes by being mindful of their thoughts without engaging in cognitive content, and shifting their attention to the present moment where adaptive, valued action can take place.

A final and important reason for using ACT to treat rumination and worry is that based on its view of the origins of all psychopathology, ACT is a transdiagnostic therapy, and rumination and worry have been found to be transdiagnostic psychological constructs. As outlined in Chapter 4, ACT is a transdiagnostic therapy which views the same maladaptive processes – experiential avoidance and cognitive fusion – as underlying all forms of psychological distress. As a consequence, ACT treatment protocols cover the same key therapeutic components, with minimal focus on disorder-specific symptoms. ACT has been found to be effective in reducing symptomatology and improving quality of life amongst transdiagnostic samples (Clarke et al., 2012; Lappalainen et al., 2007; Markanday et al., 2012). As such, ACT lends itself well to treating rumination and worry, which, while most closely associated with depression and anxiety, are present across a range of psychological disorders (Ehring & Watkins, 2008). Furthermore, given that rumination and worry have been conceptualized as forms of experiential avoidance, it would be expected that ACT would be effective in reducing the occurrence of negative repetitive thought without focusing
specifically on these constructs in treatment, given that an ACT intervention should result in reduced experiential avoidance overall.

**Research on ACT and worry and rumination**

**ACT and worry.**

To date, there are no studies that have specifically evaluated the effectiveness of ACT for pathological worry. However, the research on ACT for GAD lends positive support to the application of ACT to the treatment of worry, given that worry is the hallmark symptom of GAD, and several studies (described in the previous chapter) have found that ACT resulted in significant reductions in worry and anxiety severity (Codd et al., 2011; Roemer & Orsillo, 2007; Wetherall et al., 2011). Furthermore, there is some support for superiority of ACT relative to CBT in treating worry, based on the findings of Wetherall and colleagues’ randomized control trial. Thus, there is some preliminary empirical support to suggest the application of ACT as an intervention for worry. Furthermore, the strong conceptual fit between ACT and worry has been noted previously; Borkovec (2002) states that what is known about ACT and mindfulness-based therapies and what is known about GAD and worry “overlap so considerably that the possibility of an integration of their respective conceptualisations and treatment techniques is compelling and nearly seamless” (p. 76).

**ACT and rumination.**

At present, only one study has looked specifically at the efficacy of ACT for rumination. This study by Harrington (2008) compared a brief, group-skills-learning ACT-based intervention to thought control techniques amongst a non-clinical population of self-reported ruminators. The participants were 10 psychology students who reported frequent, consistent distress from efforts to control unwanted negative thoughts. The format was a single-case, repeated measures, multiple baseline across participants experimental design,
ACT FOR WORRY AND RUMINATION

incorporating a screening phase and an experimental phase. All participants received two 90-minute thought control placebo (TCP) sessions (these were not actual therapy sessions) followed by two 90-minute ACT-based interventions delivered in a group-skills learning format. The ACT therapy comprised components drawn from an ACT manual and exercises adapted to apply to rumination. The results of the study indicated that experiential avoidance and believability of ruminative thoughts decreased from the TCP intervention to the ACT intervention. In addition, thought suppression decreased moderately from TCP to ACT for half of the participants.

Overall, this study and the literature on ACT for GAD lend preliminary support for the usefulness of ACT as a treatment for worry and rumination. It is clear, therefore, that more research is needed to clarify whether the strong theoretical rationale for applying ACT to the treatment of negative repetitive thought translates to empirically-supported and clinically-relevant outcomes.
Chapter 6. Study One: Acceptance and Commitment Therapy for worry and rumination: a qualitative and quantitative n=1 analysis

Chapter Overview

This chapter is comprised of a review of the first of two studies which were conducted to empirically examine the present research question. This chapter provides a detailed review of Study One, which is a combined quantitative and qualitative case study of the effectiveness of ACT for worry and rumination. This chapter will first provide a description of the study, including the study aims and hypotheses. Four hypotheses pertaining to the effectiveness of ACT for worry and rumination, psychological symptomatology, ACT-related variables, and functionality will be presented. A detailed outline of the study will be provided, including a description of the participant, measures, assessment and intervention procedures, and approach to data analysis. The quantitative and qualitative results will then be presented. In the final part of the chapter, the discussion will summarise the findings of the study, addressing each research hypothesis and in turn discussing the findings in relation to the broader theoretical and research literature. This chapter will conclude with an overall summary of the findings of Study One, a discussion of the study’s implications and limitations, and suggestions for future research.

Study Description, Aims and Hypotheses

As discussed in chapters 1 and 2, worry and rumination are key cognitive processes implicated in the onset and maintenance of a range of psychological disorders, and depression and anxiety in particular (Borkovec et al., 1983; Covin et al., 2008; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2008; Siegle et al., 2004; Teasdale et al., 2000; Watkins, 2008; Watson, 2005). Worry causes significant distress and is associated with impaired processing of negative affect (Borkovec et al., 1983; Borkovec et al., 1998). Likewise, rumination is a
key feature in residual depression, and has been found to be resistant to change (Teasdale et al., 2000; Watkins et al., 2007). In spite of their well-recognised negative correlates, however, only a handful of studies have examined the effects of specifically targeting worry and rumination in the treatment of depression and anxiety. Furthermore, no research has examined the impact of Acceptance and Commitment Therapy on worry and rumination.

There is a strong theoretical rationale for using ACT for worry and rumination. ACT views experiential avoidance and psychological inflexibility as underlying all psychopathology, and the therapeutic processes associated with ACT are targeted at reducing experiential avoidance and increasing acceptance (Hayes et al., 1999). Research has shown that ACT is effective in reducing avoidance of internal experiences (Roemer, Orsillo, & Salters-Pedneault, 2008; Roemer, Salters, Raffa, & Orsillo, 2005). Given that worry and rumination have both been conceptualized as forms of experiential avoidance (Borkovec, 1994; Giorgio et al., 2010; Nolen-Hoeksema et al., 2008), an ACT intervention may be able to create a shift in the frequency and intensity with which one engages in these processes. Other key therapeutic processes which are part of ACT interventions may also be effective in reducing worry and rumination. Cognitive defusion techniques may assist the individual in mentally stepping back from their worry and ruminative cognitions and disengaging from the cycle of repetitive thought, promoting greater psychological flexibility and the opportunity for more workable action to take place. Mindfulness may be effective in helping worriers and ruminators to cope by teaching them to engage in the present moment instead of their maladaptive thought processes (Schmaling et al., 2002). Finally, given that rumination and worry interfere with instrumental behaviour (Nolen-Hoeksema et al., 2008), the committed action and values components of ACT may assist individuals in defusing from repetitive,
aversive thoughts and making positive changes in their lives which are conducive to psychological health.

Given that there has been no published research to date on ACT for rumination and worry, a single case design is warranted to explore the effectiveness of this approach. Kazdin (2010) argues that there is an important role for single-case designs in exploring new fields of research where interventions may not be well developed. Case study designs are commonly used as a first step to establishing the effectiveness of an intervention or therapeutic modality for a psychological disorder, before this is investigated experimentally. For example, in the ACT literature, case studies have recently been used to explore the impact of ACT for Asperger Syndrome (Cook, 2000), panic disorder with agoraphobia (Lopez, 2000), PTSD (Twohig, 2009), relationship difficulties (Peterson, Eifert, Feingold, & Davidson, 2009), and anorexia nervosa (Berman, Boutelle, & Crow, 2009).

The present study adopted a combined quantitative and qualitative case study approach. Qualitative and quantitative research methods are often combined to form a “mixed methods” approach, as qualitative research enhances quantitative findings by adding richness of insight and capturing an individual perspective (Howitt, 2010). To date, there has been no published research on ACT that has incorporated a qualitative component. A qualitative examination of ACT will offer insight into how an ACT intervention is perceived by the most important element of the therapeutic equation – the client. Qualitative research into an individual’s experience of ACT can provide an indication of the extent to which they feel engaged with the ACT approach and core therapeutic process, factors which are key to the overall impact of any psychological intervention. Qualitative analysis also affords a deep and specific understanding of the perceived outcomes of an ACT intervention, and the identification of what the individual perceives to be the most important treatment
components; details which are often lost in the collection and analysis of quantitative, self-report, pre- versus post-treatment data. In the present case study, qualitative research was used to explore a single individual’s experience of participating in an ACT intervention, their attitudes towards ACT, and their perceptions of the impact of ACT on their psychological distress, worry and rumination.

The primary aim of this study was to explore the impact of the ACT therapeutic processes (acceptance, cognitive defusion, mindfulness, self-as-context, committed action and values) on engagement in worry and rumination - two maladaptive cognitive processes which have been implicated in the development and maintenance of anxiety and depression.

Based on a review of the literature presented in Chapters Two to Five the following hypotheses were formulated:

_Hypothesis 1:_ It was predicted that the participant would experience a substantial and clinically meaningful reduction in worry and rumination following the ACT intervention, which would be maintained at the 3-month follow-up

_Hypothesis 2:_ It was predicted that the participant would experience a substantial and clinically meaningful reduction in clinical symptomology (depression and anxiety) following the ACT intervention, and that this would be maintained at follow-up

_Hypothesis 3:_ It was predicted that the participant would experience a substantial and clinically meaningful reduction in experiential avoidance and an increase in mindfulness and valued living following the ACT intervention, and that these changes would be maintained at follow-up
**Hypothesis 4:** It was predicted that the participant would experience a substantial and clinically meaningful reduction in functional impairment following the ACT intervention, and that this would be maintained at follow-up.

**Method**

**Participant.**

The participant was a 24-year-old female Australian student who lived with her boyfriend. She had experienced anxiety and depression for approximately 10 years, and had spent time in an inpatient psychiatric unit. Her treatment history included psychological therapy (including CBT in individual and group format), counselling, and pharmacotherapy. At the time of screening assessment the participant met DSM-IV criteria for anxiety disorder not otherwise specified, minor depressive disorder, and past major depressive disorder recurrent. The participant was not engaged in any other form of psychological therapy or counselling at the time of treatment, however she was not prevented from doing so as a result of her involvement in the study. She was taking anti-depressant medication (SSRI), and continued to do so for the duration of the ACT intervention.

The participant was one of three individuals who participated in the ACT group treatment. She was selected to be the subject of this n=1 analysis for purely pragmatic reasons. She was the only participant in the group program who responded to invitations from the researcher (made by phone and email) to take part in the post-intervention qualitative interview. Potential participants for the group intervention aged between 18 and 65 years who were suffering from depression and/or anxiety were invited to participate through advertisements placed at the RMIT University Bundoora campus (including the RMIT psychology clinic and counselling service) and the Anxiety Disorders Association of Victoria support group meetings, the RMIT student web portal, a press release from the RMIT media
centre, and various mental health websites (including beyondblue and Anxiety Recovery Centre of Victoria). General practitioners in the Bundoora and surrounding area were also informed about the study and encouraged to refer suitable and interested patients.

The inclusion criteria for participation in the study were a diagnosis of minor or major depressive disorder, dysthymic disorder or an anxiety disorder where worry and rumination are prominent features (i.e. generalized anxiety disorder, panic disorder with or without agoraphobia, social phobia, and specific phobia). Individuals who met the inclusion criteria but who had co-morbid psychosis, suicidal intent, obsessive compulsive disorder, posttraumatic stress disorder or an eating disorder were excluded from participating in the study. Eligibility for participation in the study was assessed using the

**Measures.**

**Screening measures.**

Eligibility for participation in the ACT intervention was assessed using the Modified Mini Screen (MMS; Alexander, Haugland, Lin, Bertollo & McCorry, 2006) and the depression and anxiety modules of the Structured Clinical Interview for DSM-IV-TR Patient Edition (SCID-I/P; First, Gibbon, Spitzer, & Williams, 2007). The MMS is a mental health screening tool which consists of 22 items covering current symptoms of major depression, dysthymia, suicidality, hypomania, panic, agoraphobia, social phobia, obsessive compulsive disorder, PTSD, psychosis and generalized anxiety. Alexander et al. note that the internal consistency of the MMS, measured by Chronbach’s alpha is excellent (0.92), inter-rater agreement is excellent (92%), and test–retest reliability, based on 42 screens, is good overall (79%), with 100% agreement when administrations were performed within 1 week. The Negative Predictive Value of the MMS ranges from 0.75 to 0.82, meaning that approximately three quarters to four fifths of the time, the clinician can be sure that a person who is
not identified as having a mental health problem actually does not meet criteria for a current psychiatric diagnosis.

The SCID-I/P is a standardised semi-structured clinical interview and commonly used to assess psychopathology and to screen for participant suitability for research. The participant was asked questions about the nature and severity of her symptoms, based on the DSM-IV-TR criteria. Several studies (Basco et al., 2000; Fenning et al., 1994; Fenning et al., 1996; Kranzler, et al., 1995; Kranzler et al., 1996) have demonstrated superior validity of the SCID-I/P over standard clinical interviews at intake episode. The most recent and comprehensive study of the reliability of the SCID-I/P (for DSM-III) yielded kappa values of .80 for Major Depressive Disorder (indicating good agreement) and .63 for GAD (indicating fair agreement; Zanarini et al., 2000).

Self-report measures.

The participant completed 7 questionnaires (see Appendix A) before and after the intervention and at the 3-month follow-up. She also completed 3 of these measures (those measuring depression and anxiety symptomatology, rumination and worry) each week during the intervention, before each group session. The following self-report questionnaires were completed by the participant to measure 10 variables: mental health difficulties (depression, anxiety and stress), rumination, worry, experiential avoidance, dispositional mindfulness, valued living, and functional impairment.

Depression Anxiety and Stress Scale -21 (DASS-21; Lovibond & Lovibond’s, 1995). The DASS-21 is a measure of symptoms of depression, anxiety and stress. The 21-item scale consists of three 7-item self-report subscales taken from the 42-item full version of the DASS. The subscales measure the extent to which an individual has experienced depression, anxiety and stress over the past week as rated on a 4-point severity scale ranging from 0 = “Did not apply to me at all” to 3 = “Applied to me very much or most of the time”. Internal consistency of the DASS-21 scale has been
reported to be high for the Depression scale ($\alpha = .88$), Anxiety scale ($\alpha = .82$), Stress scale ($\alpha = .90$) and for the total scale ($\alpha = .93$). The DASS-21 has also demonstrated good construct validity against independent measures of depression, anxiety and stress (Henry & Crawford, 2005).

Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991). The RRS is a 22-item measure which asks the individual to rate the extent to which they experience responses to depressed mood that are self-focused, symptom focused, and focused on the possible consequences and causes of the mood on a scale from 1 = “Almost never” to 4 = “Almost always”. The two subscales of the RRS, reflection and brooding, show good reliability, with coefficient alphas of .72 and .77 respectively, and test re-test correlations of $r=.60$ and $r=.62$ respectively (Treynor, Gonzalez, & Nolen-Hoeksema, 2003).

Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is a 16-item scale assessing general worry. Participants are asked to rate how typical items are of themselves, where 1 = “Not at all typical” and 5 = “Very typical”, generating a range of total scores from 0–80. Items include “I worry if I do not have enough time to do everything” or “Many situations make me worry.” Meyer et al. report that the PSWQ is a valid measure of worry, with high test-retest reliability ($\alpha=.95$) and high internal consistency ($\alpha=.91$).

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011). The AAQ-II is a 7-item, self-report measure of experiential avoidance, or the tendency to avoid negative private events such as thoughts, feelings or bodily sensations. An example of a typical item is “It’s ok if I remember something unpleasant”. The participant was instructed to rate how true each of the 10 statements was for them using a 7-point Likert scale ranging from 1 = “Never true” to 7 = “Always true”. Higher scores indicate a greater level of experiential avoidance and psychological inflexibility. Scores from the AAQ-II correlate significantly with measures to which they are theoretically connected, such as depression, anxiety and overall psychological distress, and do not correlate significantly with a
ACT FOR WORRY AND RUMINATION

measure of social desirability, thus supporting their validity. In a total sample of 2,816 participants across six studies, Bond et al. found the AAQ-II to have high internal consistency, with a mean alpha coefficient of .84, and good 3- and 12- month test-retest reliability, at .81 and .79 respectively (Bond et al.).

The Mindful Attention and Awareness Scale (MAAS; Brown, 2003). The MAAS is a 15-item questionnaire that measures dispositional mindfulness. Sample items include “I rush through activities without being really attentive to them” and “I drive places on ‘automatic pilot’ and then wonder why I went there”. The participant was asked to report how often she believes she has experiences by rating each item on a 6-point Likert scale from 1 = “Almost always” to “Almost never”. Higher total scores reflect higher dispositional mindfulness. Cronbach’s alpha for the MAAS was reported to be high (α = .85; Brown, 2003).

Valued Living Questionnaire (VLQ; Wilson, Sandoz, Kitchens & Roberts, 2010). The VLQ is a 2-part self-report questionnaire, designed to measure valued living, defined as “the extent to which an individual contacts his or her chosen values in everyday life” (Wilson et al., p. 254). The first part measures which domains of living the individual chooses to value, and consists of a 10-point Likert scale where participants rate the importance of 10 domains of living from 1 = “Not at all important” to 10 = “Extremely important”. The second part of the VLQ measures how consistently the respondent is living in accord with each of the 10 valued domains of living from 1 = “Not at all consistent” to 10 = “Extremely consistent”. A Valued Living composite score represents how consistent the individual has been in living in accord with their important values across all life domains, with higher scores indicating higher values consistency. Internal consistency of the VLQ Valued Living composite is reported to be good with a coefficient alpha value of .77 reported in a non-clinical undergraduate student sample (Wilson et al., 2010) and .75 in a moderately depressed undergraduate sample (Bourchier & Davis, 2008).
Sheehan Disability Scale (Leon, Shear, Portera, & Klerman, 1992). The Sheehan Disability Scale is a 3-item self-rated measure that assesses functional impairment in the areas of work, social and family life. The scale has been reported to be sensitive to change over time and is a valid and reliable measure of the functional impact of symptomatology (Leon et al.).

Procedure.

Assessment Procedure.

The participant was administered the depression and anxiety modules of the SCID I/P and the MMS by the author, during one assessment session. The author had previously received training in diagnostic interviewing using both assessment tools. The participant completed a questionnaire package containing all outcome measures at three time points: prior to receiving the intervention, post-intervention, and at a 3-month follow-up. The pre-intervention questionnaire package was given to the participant immediately after the initial assessment interview, and she returned the completed package at the first group session. She completed the post-intervention questionnaire package during the week following the last session of the program, and returned it via post. The follow-up questionnaire was provided and returned via post. In addition to the three main assessment occasions, the participant completed the measures of psychological symptomatology, worry, and rumination on a weekly basis throughout the duration of the intervention, before the beginning of each group session. Following the completion of the treatment, the participant was interviewed about her experience of participating in the ACT intervention and her impressions of ACT.

Treatment Procedure.

The ACT intervention was delivered in group format by two therapists over 9 weeks (7 sessions in total). The therapists were the author and another provisional psychologist who was undertaking her Master of Clinical Psychology degree. The protocol was designed to involve 8 weekly sessions of two hours each in duration, however due to group members’ personal
commitments and timing factors, no therapy session took place in week three, and sessions seven and eight were combined and run in the final week. Clinical supervision was provided to the therapists by the project supervisor, and the group sessions were video recorded for the purposes of supervision and adherence to the treatment protocol. The participant completed the baseline measures (T1) prior to the first group session, and weekly measures were completed before the commencement of each group session. Post-treatment measures were completed by the participant within a week following the cessation of the intervention. Follow-up measures were completed 3 months after the last treatment session. All measures were paper-based. The baseline and post-treatment measures were provided to the participant following the assessment interview and final group session. The baseline questionnaire package was returned by the participant in person at the initial group session, and the post-treatment questionnaire was returned by post. The follow-up measures were provided and returned by post.

The treatment was based on a manualised protocol adapted from the treatment manual developed by Glaser, Blackledge, Shepherd, & Deane (2009) used in their study on brief group ACT for anxiety. While ACT is a transdiagnostic therapy and is therefore broadly applicable, two extra sessions were added to the protocol to ensure that thoughts and emotions more closely related to depression were also covered. These additional sessions were drawn from Zettle’s (2007) “ACT for Depression” protocol. Table 1 outlines the core areas covered in each treatment session.

Table 1.

ACT group treatment overview

<table>
<thead>
<tr>
<th>Session</th>
<th>Activities</th>
</tr>
</thead>
</table>
| Introduction to Group Therapy and Creative Hopelessness | • General Introduction & setting therapeutic frame  
• Introduction to the nature of treatment  
• Initial problem discussion  
• Creative hopelessness – discussion of patterns and costs of avoidance  
• Homework – Rationale for LIFE exercises and Daily |
<table>
<thead>
<tr>
<th>Section</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control is the Problem and Introduction to the Why and How of Willingness</strong></td>
<td>ACT Ratings</td>
</tr>
<tr>
<td>- Questions and concerns</td>
<td>- Centering exercise</td>
</tr>
<tr>
<td>- Homework review – LIFE exercises and Daily ACT Ratings</td>
<td>- Control is the problem</td>
</tr>
<tr>
<td>- Nature and function of normal fear and anxiety</td>
<td>- Nature and function of normal sadness and depression</td>
</tr>
<tr>
<td>- Willingness as an alternative to control</td>
<td>- Carrying your pain exercise</td>
</tr>
<tr>
<td>- Homework – LIFE exercises and Daily ACT Ratings</td>
<td>-</td>
</tr>
<tr>
<td><strong>Building Acceptance by Defusing Language and Negative Automatic Thoughts</strong></td>
<td>Exercise – being willing to be out of breath</td>
</tr>
<tr>
<td>- Homework Review – LIFE exercises and Daily ACT Ratings</td>
<td>- Learning to accept thoughts and feelings through mindfulness</td>
</tr>
<tr>
<td>- Undermining the power of language and introducing defusion</td>
<td>- Defusing negative automatic thoughts</td>
</tr>
<tr>
<td>- Exercise – being willing to be out of breath</td>
<td>- Exercise – being willing to be out of breath</td>
</tr>
<tr>
<td>- Homework – reasons for depression/anxiety exercise and taking inventory exercise</td>
<td></td>
</tr>
<tr>
<td><strong>Mindfulness and Defusion for Reason-Giving</strong></td>
<td>- Review homework</td>
</tr>
<tr>
<td>- Breathing mindfully exercise</td>
<td>- Thinking self vs Observing self</td>
</tr>
<tr>
<td>- Values dignify willingness and make the hard work worthwhile</td>
<td>- Indirect values assessment</td>
</tr>
<tr>
<td>- Making a commitment</td>
<td>- Homework – writing your life story exercise, mindfulness exercise</td>
</tr>
<tr>
<td><strong>Self-as-context and Introduction to Values</strong></td>
<td>- Review homework</td>
</tr>
<tr>
<td>- Breathing mindfully exercise</td>
<td>- Review of life compass and commitment</td>
</tr>
<tr>
<td>- Thinking self vs Observing self</td>
<td>- Building awareness of self as context</td>
</tr>
<tr>
<td>- Values dignify willingness and make the hard work worthwhile</td>
<td>- Rationale for FEEL exercises</td>
</tr>
<tr>
<td>- Indirect values assessment</td>
<td>- Determining appropriate interoceptive feel exercises</td>
</tr>
<tr>
<td>- Making a commitment</td>
<td>- Interoceptive FEEL exercises</td>
</tr>
<tr>
<td>- Homework – writing your life story exercise, mindfulness exercise</td>
<td>- Discussion of homework</td>
</tr>
<tr>
<td><strong>Developing Self-as-context and Promoting Value-Guided Action in the Real World</strong></td>
<td>- Review homework</td>
</tr>
<tr>
<td>- Breathing mindfully exercise</td>
<td>- Review of life compass and commitment</td>
</tr>
<tr>
<td>- Review of life compass and commitment</td>
<td>- Building awareness of self as context</td>
</tr>
<tr>
<td>- Building awareness of self as context</td>
<td>- Rationale for FEEL exercises</td>
</tr>
<tr>
<td>- Determining appropriate interoceptive feel exercises</td>
<td>- Interoceptive FEEL exercises</td>
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<tr>
<td>- Discussion of homework</td>
<td>- Discussion of homework</td>
</tr>
<tr>
<td><strong>Bringing it All Together: Building Acceptance and Value-guided</strong></td>
<td>- Centering exercise</td>
</tr>
<tr>
<td>- Homework review</td>
<td>-</td>
</tr>
</tbody>
</table>
Qualitative Interview.

The participant took part in a qualitative interview about her experience of participating in the ACT intervention and her impressions of ACT. The participant was invited to take part in this interview as an opportunity to provide feedback on the treatment program, and she was informed that she was under no obligation to participate.

The interview occurred approximately 6 months after the final session of the ACT program, and was 60 minutes in duration. The interview was conducted by the author, and was semi-structured in that the participant was asked several questions devised by the author, yet she was encouraged to speak freely about her experience of ACT and the group program, and to discuss and elaborate on topics as they arose. The areas of coverage included in the interview are presented in table 2.

Table 2.
Qualitative Interview Areas of Coverage

<table>
<thead>
<tr>
<th>Topic</th>
<th>Example questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>• Explain the purpose of the qualitative research</td>
</tr>
<tr>
<td>Reflecting on the group program</td>
<td>• What was your experience of the ACT group program?</td>
</tr>
</tbody>
</table>
### ACT FOR WORRY AND RUMINATION

- What did you like about group therapy?
- What did you find challenging about group therapy?
- What would you change if you could?

### Positives and negatives of ACT

- What did you like about ACT?
- What didn’t you like about ACT?
- What – if anything – did ACT bring to your life that was new/different?
- In your opinion and experience, how does ACT compare with other psychological therapies?

### The Impact of the ACT group program: perceptions at post-treatment

- What techniques and strategies did you find helpful/what “worked” for you?
- How did it work?
- How did the ACT group program impact your depression and anxiety?
- How did the ACT group program impact your worry and rumination?
- Was there a specific session/exercise/moment in the program that you recall as having the greatest impact on you? How?

### The impact of the ACT group program: current perceptions

- What – if anything – do you still use from the ACT program? (Probe for specific techniques, metaphors, ways of looking at things, etc.)
- How, if at all, do you use the following
  - Willingness/acceptance
  - Cognitive defusion
  - Mindfulness
  - Self-as-context/the observer self
  - Values
  - Committed action
- How do you use these?
- Overall, what was the most important thing you got out of your involvement in the ACT group program?

### Ethical Considerations.

This project was approved by the RMIT University Human Research Ethics Committee (Project No. 62/10; see Appendices B and C). Prior to taking part in the intervention, the participant was provided with a plain language statement outlining the purpose of the research, the relevant questions being addressed, requirements associated with participation, potential risks and disadvantages of involvement, information regarding data management, the individual’s rights as a participant, the voluntary nature of participation and
the contact details of the principal investigator and project supervisors (see Appendix D). Following the ACT intervention, the participant was invited to participate in the qualitative interview, and was informed that she was under no obligation to do so (as previously stated, the other two participants who took part in the ACT intervention did not respond to the invitation to participate in the interview). The participant was informed of the purpose of the interview and was encouraged to be honest in her feedback. Both the interview and the treatment sessions were video recorded, and the recording of the interview was then transcribed by the author. A number of measures were taken to protect the participant’s privacy. All digital data was stored on a secure server, password protected and de-identified. A document containing the participant’s contact details was kept separate from other research data. Access to both digital and hard-copy data was restricted to the researcher and the supervisors. All completed measures and assessments generated in the course of the project were stored in a locked filing cabinet located within the Discipline of Psychology and electronic data were stored on a secure RMIT server with access granted only to the researcher and the supervisors. Video footage was stored in a locked filing cabinet in the clinic that was accessible only to the researcher. All video footage and participant information will be kept for 5 years after the completion of the project and subsequently destroyed. Electronic data will be disposed of through an approved method of electronic deletion, and paper materials will be shredded.

**Data Analysis.**

**Quantitative analysis.**

The effectiveness of the intervention was explored by examining the degree of change in outcome measures that occurred across the three assessment points and by determining whether this change was reliable and clinically meaningful.
Inference by eye.

Consistent with single-subject research, visual inspection of the participant’s scores on all outcome measures was used to determine the effect of the intervention using a technique called inference by eye (Cumming & Finch, 2005). A set of graphs were created and the participant’s scores at pre-intervention, post-intervention, and 3-month follow-up were plotted for visual inspection. Standard error of measurement (SEm) bars were included in these graphs so that change could be assessed using inference by eye. Two independent raters who were not involved in the study rated each graph according to criteria specified by Wade (2007). The raters were a registered psychologist experienced in visual inspection, and a provisional psychologist. The two independent raters evaluated each graph according to the following criteria:

1. Substantial change – data demonstrated that the intervention resulted in a significant increase or decrease in the variable (i.e., an increase towards the maximum possible score; decrease towards the minimum possible score). That is, a gap between the Standard Error of Measurement bars was clear and evident.

2. Moderate change – data demonstrated that the intervention resulted in a clear increase to decrease in the variable; but the change was not sufficient to be considered substantial. That a minimal overlap between the Standard Error of Measurement bars was evident.

3. No change – data demonstrated that the intervention resulted in no change in the variable across time. Significant overlap between the Standard Error of Measurement bars was evident.

A graphical representation of these criteria is presented in Figure 1.
ACT FOR WORRY AND RUMINATION

Figure 1. Inference by eye change criteria

The raters were given these criteria, along with a set of instructions (see Appendix F) detailing how to complete the visual inspection task. Each graph summarises the participant’s pre-intervention, post-intervention, and follow-up data for a particular variable. Each graph was presented to the raters on an A4 sheet of paper, and the variable name that the graph represented was not shown on the graph, so as not to influence raters’ opinions. Percentage of agreement was then calculated between the independent raters. If the raters disagreed on the rating for any of the graphs, then they conferred until an agreement could be reached, resulting in a 100% agreement rate.

Reliable and clinical change.

To supplement the findings from visual inspection, the participant’s data over the three points of measurement were analysed to determine whether reliable and clinically meaningful change had occurred. The Clinical Change Generator component of ClinTools version 4 (Devilly, 2005) was used to assess reliable and clinical change. This program relies on Jacobson and Truax’s (1991) approach to calculating reliable change, and therefore takes into account the Standard Error of the Difference (SED) between two administrations of the test. Thus, when there is change that occurs over and above the SED, it is likely that this is due to a genuine difference rather than the psychometric properties of the measure, and it can therefore be considered reliable change. The
program provides three confidence intervals for assessing reliable change. In interpreting the present data, all changes in the participant’s outcome measures that occurred with 95% confidence (1.96 $SD$) or above were considered reliable change.

Once a change in scores has been found to be reliable it is possible to determine whether this change is clinically meaningful. According to Jacobson and Truax (1991), the assumption can be made that individuals enter therapy with certain problems, and that the expectation is that therapy will reduce or eliminate these problems. As such, those entering therapy are considered to be part of a dysfunctional or clinical population. Those who successfully complete therapy should no longer fall into this population, and ideally should return to the levels of the normal population. Thus, Jacobson and Truax suggest three criteria for assessing whether clinically meaningful change has occurred: the individual’s post-treatment level of functioning is outside of the range of the dysfunctional population, where range is defined as extending to two standard deviations beyond the mean for that population, in the direction of functionality (Criterion A); the individual’s post-treatment level of functioning falls within the range of the normal population (Criterion B); and the individual’s post-treatment level of functioning is closer to the mean of the functional population than to the mean of the clinical population (Criterion C). Either criterion A, B or C can be used to determine whether clinical change has occurred, and the criterion that is selected is often dependent on the availability of data for normative and clinical samples (Devilly, 2005). For the present study, Criterion C was used to assess clinical change on all outcome measures except the SDS, as normative and clinical data was available for these measures. Criterion A was used to measure clinical change on the SDS, as data for a clinical population only was available for this measure.

**Qualitative analysis.**

The interview with the participant was transcribed and analysed using the thematic analysis approach outlined by Braun and Clarke (2006). This approach has been validated in numerous
studies, including Bell and Treleaven (2011) and Hellsten and Prytula (2011). This approach includes six phases: familiarization with the data, generation of initial codes, search for themes, review of themes, definition and naming of themes, and selection of extracts. The first phase, *familiarization with the data*, involved immersion in the data through the transcription and repeated reading of the interview. The second phase, *generation of initial codes*, involved the line-by-line coding of the data, designed to capture the key themes in each segment of the text. The coding was data-led rather than theoretically-led, in that the coding was determined by what was in the text rather than guided by a theoretical framework of some sort. The third phase involved *searching for themes*, that is, exploring commonalities and contradictions between codes. Six key themes were identified, and the relevant extracts of text were organized under these themes. These themes were refined further in the fourth phase, *review of themes*. This phase involved reviewing the relevance of the themes and checking them against the original data to ensure that they were accurate and representative. Themes were clarified to ensure that they were internally coherent, consistent, and distinctive (Braun & Clarke, 2006), and some data was recoded at this point. In the fifth phase, *definition and naming of themes*, each theme was labeled and defined based on its unique story and its contribution to the story of the data as a whole (Braun & Clarke). The sixth and final phase of the thematic analysis involved the *selection of extracts* to illustrate the themes.

**Results**

**Quantitative results.**

The participant’s scores at pre-intervention (T1), post-intervention (T9), and follow-up (T10), are displayed in the figures below. The results of the reliable and clinical change analyses are represented in table 3. To be considered meaningful, change needed to occur in both inference by eye and reliable and clinically significant change analyses. Based on these criteria, meaningful change was observed in the participant’s scores on measures of
rumination, anxiety, stress, mindfulness, and disability following the intervention, and reductions in rumination, anxiety and stress were maintained at 3-month follow-up. A moderate reduction was observed in the participant’s experiential avoidance at post-treatment.

The participant’s scores on the PSWQ and RRS over the nine assessment points are displayed in figure 2. There was some moderate change in the participant’s worry scores during the intervention (beginning at T3), however worry increased again towards the end of the intervention, and there was no overall change in worry scores from pre- to post-treatment. Inference by eye analysis indicated a substantial reduction in rumination at post-treatment (which also began at T3), which was maintained at 3-month follow-up. Reliable and clinical change analysis indicated that the reduction in rumination was reliable and clinically meaningful (see table 3).
Figure 2. Weekly worry scores as measured by the Penn State Worry Questionnaire (PSWQ) and weekly rumination scores as measured by the Ruminative Response Scale (RRS) for participant one from baseline (T1), to post-treatment (T9) and follow-up (T10).

Figure 3 represents the participant’s scores on the DASS across the nine assessment points. There was no change across the treatment in depression scores, however the participant’s depression score was in the normal range at baseline. A substantial reduction in anxiety scores was detected at post-treatment, and was maintained at follow-up. This change was found to be reliable and clinically meaningful (see table 3). Stress scores decreased substantially from baseline to follow-up, and represented reliable and clinically significant change. The substantial reduction in stress was also maintained at follow-up.
Figure 3. Weekly depression, anxiety and stress scores on the Depression Anxiety and Stress scale (DASS-21) for the participant from baseline (T1), post-treatment (T9) and follow-up (T10).

The participant’s scores on the ACT process measures are depicted in figure 4. A moderate change was detected in experiential avoidance scores from baseline to follow-up, however this was not reliable or clinically meaningful. No change was detected in valued living scores. There was substantial change in mindfulness scores from baseline to post-treatment, which was reliable and clinically significant. The increase in mindfulness from baseline to follow-up was moderate.
Figure 4. ACT process measures, experiential avoidance as measured by the Acceptance and Action Questionnaire-II (AAQ-II), valued living measured by the valued living questionnaire (VLQ), and mindfulness measured by the mindful attention and awareness scale (MAAS).

The participant’s disability scores are depicted in figure 5 below. A substantial reduction in disability was detected from baseline to post-treatment and this was found to be reliable and clinically meaningful. This change, however, was not maintained at follow-up and scores returned to baseline levels.
Figure 5. Disability scores on the Sheehan Disability Scale (SDS) at baseline (T1), post-treatment (T2) and follow-up (T3) for participant one.

The results of the reliable and clinical change analyses are summarized and combined with the results of the inference by eye analyses in table 3. As depicted, the change that occurred in the participant’s scores on outcome measures was examined across three time points (baseline to post-treatment, post-treatment to follow-up, and baseline to follow-up) to determine whether it could be considered reliable and clinically significant. As stated previously, to be considered meaningful, change needed to occur in both inference by eye and reliable and clinically significant change analyses.

Table 3. 

Inference by eye and reliable and clinical change on outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Baseline to Post-treatment</th>
<th>Post-treatment to Follow-up</th>
<th>Baseline to Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Change</td>
<td>Reliable</td>
<td>Clinical</td>
</tr>
<tr>
<td>Depression</td>
<td>none</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Anxiety</td>
<td>moderate</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stress</td>
<td>significant</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Worry</td>
<td>none</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Rumination</td>
<td>significant</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Qualitative results.

Six main themes emerged from the interview with the participant about her experience of the ACT intervention: (i) use of mindfulness, (ii) experiential avoidance and difficulty with acceptance, (iii) strong control agenda and focus on symptom reduction, (iv) perceived impact of values and committed action, (v) lack of connection with defusion and self-as-context, and (vi) perceived impact of ACT on worry and rumination.

Mindfulness.

The participant maintained that the mindfulness component of the ACT intervention was the most helpful part of the therapy, and was one aspect of ACT that she was still using at the time of the interview. She talked spontaneously about mindfulness more than any other aspect of ACT.

It was clear, however, that the participant used mindfulness within a CBT rather than ACT framework: for her, the goal of mindfulness was distraction and/or relaxation as opposed to connecting with her present experience and allowing her thoughts and feelings to be as they are. Thus, she liked mindfulness because it effectively provided her with some respite from her thoughts; however it was used very much as a reactive strategy aimed at symptom reduction. In the following excerpts the participant describes how she incorporated mindfulness into her life:

<table>
<thead>
<tr>
<th></th>
<th>Avoidance</th>
<th>Valued Living</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>none</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>moderate</td>
<td>x</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>moderate</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

|                          | significant | x   | x   |
|                          | None        | x   | x   |
|                          | significant | x   | x   |

|                          | moderate   | x   | x   |
|                          | None       | x   | x   |
|                          | none       | x   | x   |


“Mindfulness is the main thing I use. It’s a distraction. When I went for a walk last week I was at the train station and I was looking at the train, and listening to the different sounds. And I do the same thing at night-time. It takes me out of my head and relaxes me.”

“Last week when I was feeling anxious I went for a walk and I was just concentrating on my surroundings…just taking in different things and I guess at night-time counting to 20 or just listening to sounds I can hear.”

“I think I’ll have to work harder at it now that I’m off medication and in my last semester. I’ll use mindfulness meditation for stress relief. Also do it before bed sometimes. But it’s more if I notice that I have anxiety.”

**The control agenda and symptom reduction.**

It was evident that the participant found it hard to relinquish a control agenda and identified this to be a potential problem. When asked about which aspects of ACT resonated with her the most, the participant said "the whole thing about control. I recognised that in myself." In spite of the fact that she became more aware of her control agenda during the intervention, it appeared this this was very difficult for her to shift: from her point of view, a therapeutic technique or strategy only worked if it resulted in a fairly immediate and noticeable reduction in emotional distress or psychological symptoms. This view is in direct opposition to an ACT approach, which suggests that difficult private experiences cannot be controlled, and that control and the absence of psychological symptomatology are not prerequisites for a rich and meaningful life.

The participant’s view of feelings as controllable through the examination and modification of cognitive content is more consistent with CBT, and her strong control agenda may be a product of her extensive experience with this therapeutic modality. The participant
was aware of her allegiance to CBT and acknowledged that this may have impacted on her experience of participating in the ACT intervention. She had experienced prior success (in the form of symptom reduction) with challenging her thoughts, and as a consequence her belief in the effectiveness of CBT was strong. The participant said:

“I still feel like I connect more with CBT, and I don’t know if that’s because I’ve done a lot of CBT courses. That probably has a lot to do with it. I was saying to the counsellor I saw that I do still use little bits from ACT. See it as more of a way I can distract myself from thoughts, whereas with CBT it’s about looking at them and thinking about how I can change them.”

“[CBT involves] more practical strategies, and writing it down is therapeutic. It’s like getting it out. It makes me look at my thoughts more, and once I look at them it makes me think ‘that’s a bit irrational.’ It’s harder to do that in my head.”

These excerpts indicate that from the participant’s perspective, CBT provided her with a way of effectively taking her distressing thoughts out of her head, examining them, and changing them. A point of interest is the fact that one of the only aspects of the ACT intervention the participant said she did not like was the “pink elephant” exercise, which is part of the creative hopelessness phase of the intervention, designed to demonstrate the futility of thought suppression efforts. It may be that the participant found this exercise aversive as it represented a direct challenge to her belief that it is possible for her to exercise control over her thoughts.

The participant’s focus on control was evident in her approach to the different components of the ACT intervention. She tended to view the various ACT strategies and techniques through a CBT lense, seeing the goal of the different therapeutic components as being symptom reduction. If the exercises didn’t achieve this goal almost immediately and in
a lasting way, they were deemed ineffective. Furthermore, she talked about only using the ACT strategies reactively, once she has begun to feel anxious or depressed, in the attempt to eliminate the difficult thoughts, feelings and sensations. The following excerpts illustrate this point:

“Mindfulness of the hand and the raisin exercise didn’t work that much for me. It might help for a minute but then the anxiety comes back.”

“I wasn’t really a fan of the long mindfulness/imagery stuff. It didn’t work for me as much. Sometimes when I’m anxious and I listen to a CD it helps, maybe this time it didn’t help because I wasn’t feeling that anxious.”

“I’ll use mindfulness meditation for stress relief. I also do it before bed sometimes. But it’s more if I notice that I have anxiety.”

The participant acknowledged her strong control agenda. Interestingly, however, while she briefly mentioned the creative hopelessness component of the intervention and said that the notion of the control agenda resonated with her, she did not elaborate on this further. Therefore, it appears that while the intervention made her aware of her control agenda, it did not have the effect of shifting this in a meaningful way.

Acceptance and experiential avoidance.

It was evident that the participant found it very difficult to accept her depression and anxiety, and her psychological difficulties were a source of distress and even shame for her. Her avoidance of emotional and physiological experiences was evident in the effort she has put into trying to eliminate her symptoms of depression and anxiety over the years. In this way, being in a group therapy environment was helpful to her as it normalised her own
difficulties in her mind, and was conducive to self-acceptance. The following excerpts illustrate this point:

“Being in a group helps you not to feel so alone.”

“I think it was good for me to go, even just having people around and talking about things. It was good... I feel like I don’t get as stressed. Maybe what I say to myself has changed. I still get stressed and anxious, but it’s not as bad as it used to be.”

Not only did the participant find it hard to accept her own anxiety and depression, she also found it difficult to tolerate these emotions in others, as it cued her to think about her own mental health issues. At the time of the group she perceived herself as being in a period of remission from episodes of anxiety and depression, and it was painful for her to be reminded of what it is like to feel severely depressed and anxious. Thus, the participant was somewhat ambivalent about taking part in group therapy. This sense of ambivalence is highlighted in the following comment:

“I like small groups. People describe their anxiety and you think ‘I feel that too’ and you don’t feel as much like there’s a problem with you. But sometimes – because I was feeling well I would think “I don’t need this” It was a bit of a drag, because I live far away, and it was a reminder of anxiety. But I’m still glad I did it.”

As the participant felt conflicted by the idea of accepting her difficult thoughts and feelings, willingness to experience her depression and anxiety required a huge shift in her mindset regarding her internal experience. As a consequence the concept of acceptance was also met with some resistance. This is reflected in the lack of substantial change observed in her scores on the AAQ-II. In the following excerpts, she describes her struggle with acceptance:
“I didn’t find the concept of willingness that helpful. It’s hard, because anxiety and depression are horrible. I accept it more, but to say I’m willing to have it is still a bit hard.”

“I’m not completely there. I have times when I’m like ‘this sucks I hate it.’ But it’s better.”

“I don’t really use willingness and acceptance in situations. If I’m feeling really anxious I get anxious about being anxious, so I’m more focused on relaxing myself. Last week I was saying ‘It’s ok’ and just do the things I know break the cycle. Try and reassure myself.”

**Cognitive defusion and self-as-context.**

The participant did not spontaneously mention the concept of defusion or any of the defusion techniques presented in the intervention. Even when prompted, she was not able to recall any of the defusion exercises, and she concluded that defusion was not of use to her.

While the participant saw CBT as a way for her to control her difficult emotions through the modification of her irrational thoughts, she saw ACT and specifically the notion of cognitive defusion as merely being a way for her to temporarily distract herself from her thoughts. As a result, defusion was seen as inferior to cognitive restructuring, and ACT was seen as inferior to CBT overall. The participant’s view of cognitive defusion as merely a distraction technique is evident in the following two excerpts:

“[I see ACT] as more of a way I can distract myself from thoughts, whereas with CBT it’s about looking at them and thinking about how I can change them.”
“When I say ‘it’s ok’ I find that helps for about half an hour, but when I actually go into the thought and examine it it helps. When I get anxious it’s hard for me to think rationally.”

Interestingly, however, a counsellor whom the participant had started seeing at the time of the interview taught her to say “and it’s ok” after her anxious thoughts – which is essentially a defusion/acceptance technique – and the participant said that she was finding this helpful. This suggests that she was not opposed to defusion, but for some reason the defusion component of the ACT intervention did not resonate with her at the time.

The participant had also little recollection of the self-as-context component of the intervention.

**Values and Committed Action.**

The participant connected with the values component of ACT, and saw this as one of the main benefits of participating in the intervention. It was an important realisation for her to recognise that she was behaving in ways that were inconsistent with some of her key values, and she felt that this realisation had had a lasting impact on her. In talking about the impact the values component of the intervention had on her, the participant made the following comments:

“I really liked the values – family, friends, social life. That was good. And that was a bit of a different way of looking at things, it made me make a couple of changes. That was good at the time.”

“In my mind I knew it was a bit of an issue but I didn’t do enough about it, so it kind of prompted me to take action. Instead of saying ‘I should do this’ I thought ‘I’m just going to do this’ and set myself a goal, like ‘this week I’m not going to procrastinate.’
It was more looking at the values and rating them: how important things are and how much you’re engaged in them. It was a bit of a wake-up call.”

Worry and Rumination.

The participant’s thoughts about her depression and anxiety were a strong contributor to her distress. She discussed the fact that once she noticed that she was feeling depressed or anxious she started to worry or ruminate about her symptoms, which then exacerbated her initial distress. The following comment illustrates this:

“When I get really anxious and think about the anxiety it snowballs… I just felt awful last week, it was really bad. Really bad anxiety over nothing. And it made me worry about things that I don’t usually worry about.”

The quantitative findings indicate that there was a significant change in the participant’s scores on the RSS from baseline to post-treatment. Interestingly, however, she did not highlight the change in her rumination as one of the main outcomes of the intervention, and did not talk about rumination spontaneously.

“[ACT is effective for my rumination] in a minor way, for a short time when I would try it. I don’t think I would use it unless I was feeling anxious.”

To summarise the findings of the interview, from the participant’s perspective, the mindfulness, values and committed action components of the intervention were the most engaging aspects of ACT, and the aspects which she feels have had the most meaningful and lasting impact on her. She was somewhat ambivalent in regards to participating in a group therapy program, and in regards to ACT in general. The participant felt that she connected better with CBT (which is unsurprising based on her extensive experience with this therapeutic modality), and she struggled with the acceptance/willingness and cognitive
defusion components of the intervention, which are cornerstones of ACT, in particular. It is likely that the overall impact of the ACT intervention for this participant was influenced by the difficulty she experienced in relinquishing her control agenda.
Discussion

Study One examined the effectiveness of a group-based ACT intervention in treating rumination and worry in an individual with anxiety and depressive symptoms. Variables of interest were rumination and worry, psychological symptomatology (depression, anxiety and stress), ACT-related measures (experiential avoidance, valued living and mindfulness), and functional impairment (disability). The current section will address each research hypothesis and in turn discuss both the quantitative and qualitative findings in relation to the broader theoretical and research literature.

Worry and rumination.

It was hypothesized that the participant would experience a significant reduction in rumination and worry following the ACT intervention, and that these changes would be maintained at the 3-month follow-up. This hypothesis was partially supported in that a significant reduction in rumination was observed immediately after the intervention and at follow-up. However, there was no change in the participant’s worry scores following treatment.

The fact that a significant change was observed in rumination but not worry was unexpected, and this finding is inconsistent with the literature which suggests that worry and rumination are essentially the same type of cognitive process: they are both perseverative, repetitive, self-focused forms of thought. It is necessary to consider the way these constructs were measured in interpreting the discrepancy in the pattern of change observed for each construct. One possibility is that this can be accounted for by the differences in the RRS (Nolen-Hoeksema & Morrow, 1991) and PSWQ (Meyer et al., 1990) in terms of the wording and rating of items. Stöber and Bittencourt (1998) suggest that the PSWQ was constructed as a measure of trait-like worry, as evidenced by the fact that respondents are asked to rate how
typical worry symptoms are of them. Stöber and Bittencourt argue that typicality implies
stability, such that the rater may still consider pathological worry to be typical of them, even
if they have experienced some recent changes in levels of worry. The items on the RRS,
however, are focused on present feelings and recent events, which are likely to prompt the
rater to reflect on recent mood-states and experiences in making their ratings, thus leading to
more of a state-based measure of rumination. This explanation is consistent with the fact that
the participant considered herself to be “a worrier”, and it may be that even if she
experienced some change in worry, this was not captured by the trait-based questions of the
PSWQ, as this self-perception was too ingrained. However, given that the PSWQ has been
shown to be an appropriate measure for assessing weekly fluctuations in worry symptoms
that is sensitive to change in both 6- and 12-week therapeutic interventions (Borkovec &
Costello, 1993; Gervais & Dugas), it is necessary to look for additional explanations for the
present findings.

While there are significant commonalities in the nature of worry and rumination, and
they may both belong to an overarching category of repetitive negative thought (as suggested
by Ehring & Watkins, 2008), a possible interpretation of the finding that change was
observed in rumination but not worry is that that these constructs also differ in important
ways, and may therefore not always co-vary in the same way. That is, change in one may not
always be associated with change in the other, and the impact of treatment on rumination and
worry may depend on which construct is more salient for a particular individual. For this
participant, worry may have been a more deeply-entrenched and distressing problem than
rumination, and therefore have been less amenable to change. This explanation is consistent
with the fact that while the participant experienced both depression and anxiety throughout
her life, at the time of the intervention her anxiety was a more severe and distressing problem
for her, as evidenced by the outcome of the screening assessment and her comments in the qualitative interview.

In spite of the substantial changes observed in rumination over the course of treatment, in the qualitative interview the participant was not able to speak in detail about how the intervention had impacted on her worry and rumination, other than to say that the use of ACT strategies provided short-term relief when she began to ruminate over her anxiety symptoms. However, in examining the comments she made about mindfulness, it was evident that she used mindfulness to distract herself from her distressing thoughts, which was often about her psychological symptoms. Thus, it is possible that without necessarily being explicitly aware of it, she used mindfulness to manage her rumination. This explanation is consistent with the fact that the participant experienced an increase in mindfulness and a reduction in rumination.

**Psychological symptomatology.**

It was predicted that the participant would experience a substantial and clinically meaningful reduction in depression, anxiety and stress following the ACT intervention, and that these changes would be maintained at 3-month follow-up. The findings support this hypothesis, as the participant experienced significant reductions in anxiety and stress following treatment, which were maintained at follow-up. There was no change in the participant’s depression scores, however this is not surprising given that this score was in the normal range at baseline.

The substantial reduction in the participant’s anxiety following the ACT intervention is consistent with the existing research on the effectiveness of ACT for anxiety, and lends further support for the use of this modality in treating anxiety disorders. Furthermore, the fact that this reduction was maintained at the 3-month follow-up is a promising finding, and
suggests that ACT can have a lasting, long-term impact on anxiety. The present findings also indicate that ACT may be an appropriate intervention for targeting stress, with the participant experiencing a significant reduction in stress which remained present at follow-up. While these findings are promising, there is also a need to interpret their support for ACT in the treatment of anxiety and stress with some caution, given that the participant’s anxiety and stress scores remained high throughout the duration of the ACT program, only dropping once the program finished. This pattern of change was unexpected and is inconsistent with the profile of change in symptomatology that is typically associated with psychological therapies, and it is therefore necessary to consider possible explanations for this finding. One possible interpretation is that the weekly measurements were completed under different circumstances than the main pre- and post-treatment follow-up assessments: while the participant completed the main assessments outside of the therapy setting, on her own, and in an environment and at a time of her own choosing, the weekly assessments were completed in the therapy setting before the beginning of each group session, and the other group participants completed their questionnaire packages at the same time. It is possible that the participant’s scores on the weekly measures may have been confounded by some state anxiety that she was experiencing based on the upcoming therapy session, which was reflected in the qualitative interview when she spoke about her apprehension at participating in the group program: for her, the group therapy environment cued her to think about the full extent of her own struggles with anxiety and depression, and she worried that participating in the program and being exposed to other people’s distress might actually make her symptoms worse, at a time that she perceived herself to be relatively well. This it may be that she was in a state of heightened anxiety when completing the weekly measures relative to the pre- and post-treatment and follow-up measures, which are less likely to have been completed in an anxiety-evoking context. If this is the case, it would follow that comparing the change in the participant’s scores from
baseline to post-treatment follow-up paints a more accurate picture of the impact on the ACT intervention on her stress and anxiety levels than examining the weekly data. However, because the overall pattern of change was unexpected, it is important that the results regarding the effectiveness of ACT for anxiety and stress are interpreted in light of this finding.

The fact that the participant experienced reductions in rumination and anxiety but not worry and depression is interesting, given that in the literature, rumination has been more closely aligned with depression, and worry has been traditionally linked with anxiety. Based on the research, it would have been expected that a change in anxiety would have coincided with a change in worry, and that a change in rumination would have coincided with a change in depression. While it cannot be inferred based on the current findings, and indeed the wider body of research on the topic remains mixed, it is interesting to consider the direction of the relationships between worry, rumination, depression and anxiety. Based on the current results, it would appear that a change in worry is not necessary for a change in anxiety to occur, and a change in rumination is not necessarily associated with a change in depression (however, it is important to remember that the participant’s symptoms of the depression were not of clinical severity to begin with). A possible explanation for this is that, as reflected in the qualitative data, the participant’s rumination was more closely associated with her psychological distress (anxiety and stress) than her worry was. While rumination is generally linked with depression in the literature, it has also been found to be related to anxiety, and research suggests that it has a unique relationship with mixed anxiety and depression presentations (Hughes et al., 2008; Nolen-Hoesksema, 2000). This relationship may be due to the fact that rumination (as measured by the RRS) is more closely linked with both depressive and anxious symptomatology than worry is, and is therefore more likely to reduce
in frequency and intensity when there is a reduction in emotional distress. In the present case, it may be that the participant’s rumination occurred primarily in the context of her anxiety, stress, and depressive symptoms, and thus when her symptoms improved, so too did her rumination. The strong link between the participant’s rumination and psychological symptomatology is reflected in the fact that, as she highlighted in the interview, ruminating about her depression and anxiety led to an exacerbation in her symptoms and overall distress.

In contrast to her rumination, it may be that the focus of the participant’s worry was more generalised, such that it went beyond the context of her symptoms and represented a global, ingrained cognitive style. If this is the case, it would be unlikely that her level of worry would reduce simply as a byproduct of the reduction in her emotional distress, which is consistent with the current results. While she experienced a significant improvement in anxiety and stress symptoms following the intervention, the results indicate that the cognitive component of anxiety – worry – was the most difficult to shift. This is consistent with the fact that GAD (the hallmark symptom of which is worry) is associated with less treatment success than the other anxiety disorders (Ballenger et al., 2001; Colvin et al., 2008). Thus, a possible explanation for the fact that the participant experienced change in anxiety and rumination but not worry is that these cognitive processes may not change at the same rate as each other, based on their differing relationships to psychological distress. It would be interesting to determine whether the participant’s level of worry would decrease if her anxiety remained at sub-clinical levels for an extended period of time, or whether the intervention needed to more specifically target worry in order to promote change in this area.

An alternative explanation for the present findings is – as discussed earlier – that the participant was able to use ACT strategies to manage her rumination more effectively than she was able to apply them to her worry. The qualitative data point to the fact that as a
consequence of the ACT intervention, the participant began to use mindfulness as a strategy to manage her rumination (albeit via a more CBT-based approach of distraction) and that she found this to be effective, whereas as she did not talk about using mindfulness in relation to worry. It is also possible that both of these explanations of the findings are valid, that is, that there were two influences which contributed to the change in her rumination: the reduction in her psychological distress, and her use of mindfulness, which allowed her to refrain from becoming “caught up” in chains of ruminative thought. If this is the case, it would suggest that it may be possible to ameliorate rumination via a combined approach of improving emotional wellbeing, in addition to managing the rumination directly through mindfulness.

**ACT outcome measures.**

It was hypothesized that the participant would experience a substantial and clinically meaningful reduction in experiential avoidance and an increase in mindfulness and valued living following the ACT intervention, and that this would be maintained at the 3-month follow-up. This hypothesis was partially supported, as mindfulness increased significantly following the intervention, however, experiential avoidance and valued living did not change in a meaningful way. The change in mindfulness was not maintained at the 3-month follow-up. These findings, combined with the observed change in the participant’s anxiety and rumination, are inconsistent with the ACT model, which proposes that symptom reduction should co-occur with a reduction in experiential avoidance (and cognitive fusion), and an increase in mindfulness and valued living. Thus, it is necessary to consider possible explanations for the fact that anxiety and rumination decreased, despite the lack of change in avoidance and values.

One possible explanation for the fact that the participant’s anxiety decreased in spite of the lack of change in experiential avoidance and valued living is that her anxiety improved
simply as a result of participating in the group intervention. In the qualitative interview she spoke about how she benefited from the group environment, in that being around other people who shared similar difficulties helped to normalize her own struggles in her mind. However, it is unlikely that the normalizing effect alone would have produced the changes observed in the participant’s psychological symptomatology, particularly as she had been exposed to others struggling with depression and anxiety in the past through her participation in CBT therapy groups. Furthermore, the reduction in the participant’s anxiety was maintained 3-months after the intervention, which would not be expected if the change was due solely to the normalizing effect of the group. Also, the participant’s experience of group therapy was not purely positive, as the other participants’ experiences reminded her about her own anxiety, which was somewhat distressing for her. The participant’s ambivalence about the group environment makes it unlikely that the improvement in her anxiety can be attributed to the normalizing effect of the group alone.

As stated previously, however, the reduction in the participant’s anxiety was also not associated with meaningful change in ACT construct measures. It is necessary to look at possible explanations for this unexpected result, in addition to the finding that change was observed on one ACT construct, mindfulness, but not the others. In considering possible methodological explanations for this discrepancy, it is possible that differences in the wording of the measures of mindfulness, experiential avoidance and values may account for the observed findings. That is, The MAAS (Brown, 2003) differs from the AAQ-II and the VLQ in that its items ask the individual about their everyday experience, which makes it likely that their ratings of the items would be influenced by their present state or very recent history. Conversely, the AAQ-II and VLQ are more global and general in focus, requiring the individual to rate items by referring to their life as a whole. Therefore, one possibility is that
change was observed in the participant’s levels of mindfulness but not experiential avoidance or valued living simply because the measure of mindfulness was able to detect more recent and subtle changes in her day-to-day experience and outlook, as opposed to the more measures broad constructs of experiential avoidance and engagement with values.

It is very surprising that significant change did not occur in the domain of experiential avoidance. The participant experienced some moderate change in this area; however it was not substantial or clinically meaningful, which is unexpected given that experiential avoidance is a key target for intervention in ACT. One possibility is that the participant did experience some reduction in experiential avoidance, but that these changes were not detected by the AAQ-II (Bond et al., 2011). The AAQ-II has strong internal consistency and test-retest reliability, however, and been shown to be sensitive to change across numerous outcome studies (e.g., Arch et al., 2012; Bohlmeijer et al., 2001; Clarke et al., 2012; Codd et al., 2011; Eifert et al., 2009; Markanday et al., 2012), which suggests the need to look beyond methodological factors to explain the present findings. Furthermore, the lack of observed change in experiential avoidance observed on the AAQ-II is corroborated by the qualitative data, which indicates that the participant herself did not feel that her levels of avoidance changed substantially over the course of the intervention. The participant talked about the fact that she struggled with the concept of willingness, and acknowledged that she had a strong control agenda. Increasing in levels of willingness and acceptance would, for this participant, mean letting go of her way of managing her anxiety and depression through CBT, which had been reinforced over a period of time. If she was to believe that difficult thoughts and feelings cannot be changed, this would mean she would have to accept herself the way she is, which was painful for her. As a consequence, she remained invested in the view that it is
possible to change, as opposed to the view that it is ok to accept private experiences as they are.

It may be that the intervention was not effective in inducing creative hopelessness – that is, the realization that past efforts to change, control and avoid difficult experiences had not worked – and therefore she remained invested in her control agenda and was reluctant to adopt a position of acceptance. The ACT model proposes that a reduction in experiential avoidance is associated with an increase in acceptance, and theoretically, complete acceptance can only occur if the individual gives up the view that they can change their psychological experiences. This raises some important questions: is the complete abandonment of the control agenda essential in promoting acceptance? Can an ACT intervention still be effective if the individual retains the belief that some difficult thoughts and feelings can be changed, while accepting that others cannot? Is it realistic to think that an individual can ever be fully accepting of their experience, and give up all belief that they can change their psychological state? Ultimately, this leads to a broader question: can ACT and CBT sit side by side, or are they fundamentally in opposition to one another?

The lack of meaningful change in the participant’s valued living scores was also unexpected, and is inconsistent with the fact that in the qualitative interview she talked about the values component of the intervention as having had a strong impact on her, prompting her to re-evaluate her life and make some changes. This said, she did not speak in detail about the specific changes she made to her life during and following the group program, and it may be that while the values part of the intervention caused her to think about how there were areas of her life in which she was not living consistently with her values, perhaps this did not translate to actual, sustained, values-consistent behaviour.
An alternative explanation to the lack of change observed in the area of values is that the instrument used to measure this construct, the VLQ (Wilson et al., 2010), was not sensitive to the changes experienced by the participant. The calculation of a composite score allows for the quantification of the extent to which an individual is living consistently with their values, however the instrument was originally designed for clinical use and was intended to be interpreted qualitatively (Wilson et al.). Thus, it may be that the VLQ did not pick up on the range or nature of change in valued living experienced by the participant, which qualitatively she discussed as being significant. Kirk Strosahl (2012), co-developer of ACT, maintains that the VLQ lacks sensitivity in measuring valued living, and that the Bull’s-eye Values Survey (Lundgren, Luoma, Dahl, Strosahl, & Melin, 2012) represents a more sensitive and accurate measure of values. Lundgren et al. report that the Bull’s-eye has been shown to be sensitive to treatment effects. Therefore, a suggestion for future research is to utilize the Bull’s-eye measure instead of the VLQ.

The observed increase in mindfulness is consistent with the theoretical underpinnings of ACT and with outcomes of previous research. It is also consistent with the fact that the participant emphasized mindfulness as being the aspects of the intervention that she found most helpful. However, it is clear that the participant’s view of mindfulness as a distraction mechanism is more consistent with a CBT perspective rather an ACT approach, which views the purpose of mindfulness as being present and paying attention to thoughts, feelings and sensations, as opposed to distracting oneself from them. The fact that the participant viewed mindfulness through a CBT lens is likely to be due to her extensive experience with CBT, and it seems that the current intervention was not successful in shifting her mindset to be more consistent with an ACT perspective on psychological symptoms and distress. Like the aforementioned conflict between acceptance and control/change, this is further suggestive of
the potential challenges associated with using ACT with an individual who has had significant prior experience with CBT.

**Disability measure.**

It was hypothesized that the participant would experience a substantial and clinically meaningful reduction in disability scores following the intervention, and that this would be maintained at follow-up. The results provided partial support for this hypothesis, in that there was a meaningful reduction in disability following the group program, however this was not maintained at follow-up. While the participant’s functioning improved substantially during the course of the treatment, it was not sustained. It would be expected that an increase in disability would be associated with an increase in psychological symptoms, however the reduction in the participant’s anxiety following treatment was maintained at follow-up. As mentioned, however, the participant’s stress scores had also increased at follow-up, and while they did not reach baseline levels, it may be that her symptoms of stress were associated with significant functional impairment in the various domains of her life.

**Overall summary.**

The aim of Study One was to provide a preliminary investigation into the effectiveness of group ACT for rumination and worry, utilizing a single case design with a mixed qualitative and quantitative research approach. Given that this study did not employ an experimental design and included only one assessment of baseline functioning, no causal conclusions can be drawn. However, a number of notable findings emerged from an examination of the study outcomes. Firstly, the study provides rudimentary support for the effectiveness of ACT in reducing rumination and anxiety, in a sustainable way. Second, it suggests that ACT may lead to significant improvement to the functionality of an individual suffering from anxiety and depressive symptoms, and rumination and worry. Given the
change observed in rumination but not worry, this case study raises questions about the relationship between these two cognitive processes. In light of the fact that symptom reduction did not occur alongside meaningful change in experiential avoidance and valued living, the present study also calls for further clarification of the role of these ACT constructs in relation to the amelioration of psychological distress.

This single case design also raises questions about the impact of delivering an ACT intervention to an individual who has had extensive experience with CBT, and the potential difficulties and barriers associated with this. More broadly, the findings echo the questions asked by theorists and researchers since the development of ACT: what is the relationship between ACT and CBT? Can they be used alongside one another, or are they too different in fundamental ways, such that the adoption of an ACT perspective requires a complete paradigm shift away from CBT? And if the latter is true, how do ACT practitioners manage this, given the ubiquity of CBT in clinical settings?

**Limitations and directions for future research.**

The present findings need to be considered in the context of the study’s limitations. The first is that the study was not experimental in design, and the baseline data was derived from only one assessment occasion, meaning that it is more difficult to determine whether the changes observed are due to the intervention or due to other influences in the participant’s life (Kazdin, 2010). The qualitative component of this study suggests that ACT was not necessarily responsible for changes but rather changes are likely to have resulted from an application of strategies learnt from a CBT perspective. A second limitation is that the intervention was not delivered within the planned timeframe. While the treatment protocol was designed to involve 8 weekly therapy sessions of two hours each in duration, group participants’ personal commitments and timing factors meant that no therapy session took
place in week three, and sessions seven and eight were combined and run in the final week. The two-week gap early on in the program may have affected the participant’s engagement with ACT during this time. Also, the combining of the final two sessions may have meant that the concepts discussed in these sessions were not consolidated sufficiently, and that there was not adequate time to discuss relapse-prevention strategies, which may have impacted potential gains from post-treatment to follow-up. This may account for the lack of maintained change in the areas of mindfulness and disability. Third, the key ACT construct of cognitive fusion was not measured due to the lack of a psychometric measure of this variable. Future research should incorporate a measure of cognitive fusion if this becomes available. Fourth, the participant did not complete weekly outcome measures in the same context as the main pre-treatment, post-treatment, and follow-up measures, and the weekly measures may have been confounded by the presence of state anxiety. Finally, the qualitative interview took place 6 months after the end of the ACT program. This is a considerable time lapse, and the consequence of this was that the participant had difficulty remembering specific details of the program and elaborating on her responses. Regardless, the participant was able to reflect on the intervention as a whole, and a useful byproduct of the delay between the conclusion of the intervention and the interview was that it also revealed which aspects of ACT had had a lasting impact on her.

Future research should build on the present findings by exploring the research questions amongst a larger sample of participants taking part in a group ACT intervention. By utilizing a larger sample and exploring group findings statistically, it will be possible to draw more definitive conclusions about the effectiveness of group ACT for rumination and worry. In addition, given the minimal change observed in experiential and values in the current study, it is important to explore the impact of a group ACT intervention on ACT
constructs amongst a larger sample of participants. This would provide further clarity in regards to the relationship between symptom improvement and change in the ACT constructs theoretically presumed to be central to psychological health.

Despite its limitations, the study provides initial data on the impact of ACT on worry and rumination. By incorporating a quantitative analysis of the outcomes of a group ACT intervention with a qualitative exploration of an individual’s experience of participating in the program, this study furthers our understanding of not only the effectiveness of ACT for worry and rumination, but of ACT itself. As the only qualitative exploration of ACT, this study provides some insight into the important question: what is ACT like for the client? Given the difficulty in recruiting participants with clinically-diagnosed psychological disorders to randomized clinical trials and the dearth of experimental literature in the area, the present research represents a first step in extending the literature on group ACT for rumination and worry.
Chapter 7. Study Two: Acceptance and Commitment Therapy for rumination and worry in an Australian private hospital setting

Chapter Overview

This chapter focuses on the Study Two, which examined effectiveness of a group-based ACT intervention for the treatment of worry and rumination in individuals with transdiagnostic psychological problems attending the outpatient service at a private psychiatric hospital. The first part of the chapter provides a description of the study, in addition to the study aims and hypotheses. Eight hypotheses pertaining to the effectiveness of the ACT intervention for worry and rumination, psychological symptomatology, ACT-related variables and quality of life from baseline to post-treatment and post-treatment to follow-up are provided. A description of the study method will be provided, including a description of the participants, measures, assessment and treatment procedure. The results of the study will then be presented, comprising of preliminary analyses, descriptive statistics, and inferential analyses. The final part of the chapter focuses on a discussion of the findings of the study, reviewing each hypothesis and the implications of the results in the context of the wider literature. An overall summary will be provided, incorporating a summary of the Study Two results, limitations of the study, and suggestions for future research.

Study Description, Aims and Hypotheses

The findings of Study One provide preliminary support for the effectiveness of a group ACT intervention in treating rumination, with the participant experiencing a substantial and lasting reduction in rumination. However, the impact of ACT for worry remains unclear, as the intervention was not associated with a reduction in the participant’s worry. This finding was unexpected based on the apparent theoretical compatibility between ACT and worry (which has been noted previously, e.g., Borkovec, 2002; Roemer & Orsillo, 2002), and
is inconsistent with the literature which suggests that rumination and worry are very similar
cognitive processes, which may even represent a common construct of negative repetitive
thought (Ehring & Watkins, 2008). The fact that these findings are based on just one
individual, however, means that it is necessary to explore the effectiveness of ACT for worry
and rumination in a larger sample.

Based on the findings of Study One, it is also necessary to further explore the
relationships between rumination and worry, psychopathology, and ACT therapeutic
processes. The fact that reductions in rumination and anxiety and improvement in
functionality were not associated with meaningful change in the ACT constructs was
surprising in light of the ACT literature, which views psychological flexibility, acceptance
and valued living as fundamental to emotional wellbeing (Hayes et al., 2011). As such,
research with a larger sample is required in order to determine whether worry and rumination
are associated with ACT therapeutic components, and with experiential avoidance in
particular. This will provide insight into the theory on avoidance models of worry and
rumination, in addition to the relevance of ACT to these cognitive processes.

The aim of Study Two was to evaluate the effectiveness of a group ACT program for
rumination and worry amongst individuals attending the outpatient service of a private
psychiatric hospital, The Melbourne Clinic. Following the case study described in Study One,
the aim of the present study was to determine whether ACT is a viable option for the
treatment of rumination and worry amongst individuals with a range of transdiagnostic
psychological problems. As foreshadowed, an additional aim of Study Two was to explore
the association between rumination and worry and ACT therapeutic elements, in addition to
the way these cognitive processes relate to anxiety, depression, and emotional wellbeing. The
availability of a measure of cognitive fusion (Cognitive fusion Questionnaire; Gilanders et
al., 2010) means that this central component of ACT could also be examined in this study, which will provide a more comprehensive understanding of the effects of the ACT intervention.

Based on the literature review and theoretical rationale presented in chapters two, three, four and five, and the outcomes of Study One, the following hypotheses were made:

**Hypothesis 1:** It was predicted that there would be significant reductions in ACT group participants’ worry and rumination from baseline to post-treatment.

**Hypothesis 2:** It was predicted that changes in worry and rumination will be maintained at 1-month follow-up.

**Hypothesis 3:** It was predicted that there would be significant reductions in participants’ clinical symptomology (depression, anxiety and stress) following the ACT intervention.

**Hypothesis 4:** It was predicted that changes in depression, anxiety and stress would be maintained at 1-month follow-up.

**Hypothesis 5:** It was predicted that relative to pre-treatment, ACT group participants would have significantly lower levels of experiential avoidance and cognitive fusion, and significantly higher levels of valued living and dispositional mindfulness. As a secondary hypothesis linked to Hypothesis 5, it was predicted that the relationship between worry and rumination and ACT-related variables would be stronger than the relationship between worry and rumination and depression, anxiety and stress.

**Hypothesis 6:** It was predicted that changes in ACT variables would be maintained at 1-month follow-up.
Hypothesis 7: It was predicted that following the ACT intervention, participants would have significantly higher levels of personal wellbeing and satisfaction with life, and significantly lower levels of functional impairment.

Hypothesis 8: It was predicted that changes in satisfaction with life, personal wellbeing and functional impairment would be maintained at 1-month follow-up.

Method

Participants.

All Individuals who are registered for The Melbourne Clinic ACT group program were invited to participate in this study. Individuals were notified about the study and advised of the opportunity to participate by the author or the ACT group facilitators at the program orientation session held at The Melbourne Clinic. Permission from potential participants’ treating psychiatrists was obtained prior to inviting them to participate in the research programme. There were no exclusion criteria for this study. As ACT is a transdiagnostic approach, no diagnoses were ruled out.

40 individuals (11 male, 29 female) consented to participating in the study and completed pre-intervention questionnaires. The age range of participants was 21 to 67 years ($M = 42.58, SD = 11.45$). Of this, 18 participants (6 male, 12 female) completed post-intervention measures, and only four of this 18 (1 male, 3 female) completed follow-up measures. Of the 40 participants who completed pre-intervention measures, 47.5% had one psychiatric diagnosis, 35% had two diagnoses, and 12.5% had three. Participants had diagnoses of unipolar depressive disorders (65%), anxiety disorders (35%), bipolar disorder (I or II; 20%), borderline personality traits (12.5%), substance use disorder (7.5%), chronic pain (2.5%), Obsessive Compulsive Disorder (10%) and ADD/ADHD (5%). Ninety per cent of the sample was currently taking anti-depressant medication. Other classes of medication
taken by participants included anti-psychotics (35%), anti-convulsants (27.5%), anxiolytics (22.5%), mood stabilisers (12.5%), GABA (5%), psychostimulants (2.5%), opioid receptor antagonists (2.5%), anti-chlorogenic medication (2.5%). The treatment history of participants included psychological therapy (32.5%), hospitalisation in an inpatient psychiatric unit (25%), psychiatry (22.5%), counselling (12.5%), psychotherapy (15%), other group therapy program at The Melbourne Clinic (12.5%), CBT (10%), electroconvulsive therapy (ECT; 7.5%), detox/rehabilitation (5%).

Measures.

Participants were asked to complete 9 questionnaires (see Appendix A) before commencing the group program, immediately after the completion of the program, and one month following the completion of the program (follow-up assessment). The questionnaire package took participants approximately 20 minutes to complete. The following self-report questionnaires were completed by participants to measure psychological symptomatology, rumination, worry, experiential avoidance, cognitive fusion, dispositional mindfulness, valued living, functional impairment, satisfaction with life, and personal wellbeing.

Depression Anxiety and Stress Scale -21 (DASS-21; Lovibond & Lovibond’s, 1995). The DASS-21 is a measure of symptoms of depression, anxiety and stress. The 21-item scale consists of three 7-item self-report subscales taken from the 42-item full version of the DASS. The subscales measure the extent to which an individual has experienced depression, anxiety and stress over the past week as rated on a 4-point severity scale ranging from 0 = “Did not apply to me at all” to 3 = “Applied to me very much or most of the time”. Internal consistency of the DASS-21 scale has been reported to be high for the Depression scale (α = .88), Anxiety scale (α = .82), Stress scale (α = .90) and for the total scale (α = .93). The DASS-21 has also demonstrated good construct validity against independent measures of depression, anxiety and stress (Henry & Crawford, 2005). Psychometrics
from the current study (based on Time 1 data) are: Depression ($\alpha = .92$), Anxiety ($\alpha = .81$), and Stress $\alpha = .87$).

Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is a 16-item scale assessing general worry. Participants are asked to rate how typical items are of themselves, where 1 = “Not at all typical” and 5 = “Very typical”, generating a range of total scores from 0–80. Items include “I worry if I do not have enough time to do everything” or “Many situations make me worry.” Meyer et al. report that the PSWQ is a valid measure of worry, with high test-retest reliability ($\alpha=.95$) and high internal consistency ($\alpha=.91$). Internal consistency for the current study (based on Time 1 data) was $\alpha = .76$.

Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991). The RRS is a 22-item measure which asks the individual to rate the extent to which they experience responses to depressed mood that are self-focused, symptom focused, and focused on the possible consequences and causes of the mood on a scale from 1 = “Almost never” to 4 = “Almost always”. The two subscales of the RRS, reflection and brooding, show good reliability, with coefficient alphas of .72 and .77 respectively, and test re-test correlations of $r=.60$ and $r=.62$ respectively (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Based on Time 1 data for the current study, Cronbach’s alpha was .89.

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011). The AAQ-II is a 7-item, self-report measure of experiential avoidance, or the tendency to avoid negative private events such as thoughts, feelings or bodily sensations. An example of a typical item is “It’s ok if I remember something unpleasant”. The participant was instructed to rate how true each of the 10 statements was for them using a 7-point Likert scale ranging from 1 = “Never true” to 7 = “Always true”. Scores from the AAQ-II correlate significantly with measures to which they are theoretically connected, such as depression, anxiety and overall psychological distress, and do not correlate significantly with a measure of social desirability, thus supporting their validity. The AAQ-II also has high internal
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consistency (Bond et al.). Higher scores indicate a greater level of experiential avoidance and psychological inflexibility. The Cronbach’s alpha coefficient for the current study (Time 1 data) was .90.

Cognitive Fusion Questionnaire (CFQ; Gilanders et al., 2010). The CFQ is a 13-item self-report questionnaire designed to measure cognitive fusion and defusion as a general process. Sample items include “I get so caught up in my thoughts that I am unable to do the things that I most want to do” and “Even when I am having upsetting thoughts, I can see that those thoughts may not be literally true”. Participants rate how true each statement is for them on a 7-point Likert scale from 1 = “Never true” to 7 = “Always true”. Higher scores reflect higher levels of cognitive fusion. The CFQ has shown very good reliability across four separate community samples (α = .86), and good reliability with a clinical sample (α = .86; Gilanders et al.). It has also been shown to correlate in theoretically predicted directions with measures of related constructs such as experiential avoidance, mindfulness, distress, rumination, thought control strategies, life satisfaction, quality of life, and values. Internal consistency for the current study (Time 1 data) was α = .70.

The Mindful Attention and Awareness Scale (MAAS; Brown, 2003). The MAAS is a 15-item questionnaire that measures dispositional mindfulness. Sample items include “I rush through activities without being really attentive to them” and “I drive places on ‘automatic pilot’ and then wonder why I went there”. The participant was asked to report how often she believes she has experiences by rating each item on a 6-point Likert scale from 1 = “Almost always” to “Almost never”. Higher total scores reflect higher dispositional mindfulness. Cronbach’s alpha for the MAAS was reported to be high (α = .85; Brown, 2003). Internal consistency for the current study (Time 1 data) was α = .87.

Valued Living Questionnaire (VLQ; Wilson, Sandoz, Kitchens & Roberts, 2010). The VLQ is a 2-part self-report questionnaire, designed to measure valued living, defined as “the extent to
ACT FOR WORRY AND RUMINATION

which an individual contacts his or her chosen values in everyday life” (Wilson et al., p. 254). The first part measures which domains of living the individual chooses to value, and consists of a 10-point Likert scale where participants rate the importance of 10 domains of living from 1 = “Not at all important” to 10 = “Extremely important”. The second part of the VLQ measures how consistently the respondent is living in accord with each of the 10 valued domains of living from 1 = “Not at all consistent” to 10 = “Extremely consistent”. A Valued Living composite score represents how consistent the individual has been in living in accord with their important values across all life domains, with higher scores indicating higher values consistency. Internal consistency of the VLQ Valued Living composite is reported to be good with a coefficient alpha value of .77 reported in a non-clinical undergraduate student sample (Wilson et al., 2010) and .75 in a moderately depressed undergraduate sample (Bourchier & Davis, 2008). Psychometrics from the current study (based on Time 1 data) are: Values Importance (α = .80), Values Consistency (α = .85).

Sheehan Disability Scale (Leon, Shear, Portera, & Klerman, 1992). The Sheehan Disability Scale is a 3-item self-rated measure that assesses functional impairment in the areas of work, social and family life. The scale has been reported to be sensitive to change over time and is a valid and reliable measure of the functional impact of symptomatology (Leon et al.). The internal consistency for the current study (Time 1 data) is α = .80.

Satisfaction with Life as a Whole and Personal Wellbeing Index Scale (PWI; International Wellbeing Group, 2006). The Satisfaction with Life as a Whole and PWI Scale is a two-part measure of quality of life. The first part is comprised of a single-item measure of overall life satisfaction which asks the individual to rate the extent to which they are satisfied with their life as a whole, based on their life and personal circumstances. The second part of the measure is the PWI contains 8 items of satisfaction, each one corresponding to a quality of life domains including standard of living, health, achieving in life, relationships, safety, community-connectedness, future security, and
spirituality/religion. For both the Satisfaction with Life as a Whole item and each domain of the PWI, individuals the extent to which they are satisfied on an Cronbach’s alpha for the scale ranges between .70 and .85. The 8 domains of the PWI scale constitute the minimum set of domains that represent the first level deconstruction of ‘Life as a Whole’ (International Wellbeing Group). The PWI has also shown good test-retest reliability across 1-2 week interval with an intra-class correlation coefficient of 0.84 (Lau and Cummins, 2005). For the current study, the Cronbach’s alpha coefficient was .79.

**Procedure.**

**Assessment Procedure.**

All individuals who were registered to participate in the ACT group program were mailed a project information statement, consent form, and the questionnaire package prior to the first group session. Participants were asked to complete the consent form and questionnaire package and bring it with them to the first group session, should they wish to be involved in the research. Participants were asked to complete the post-treatment questionnaire package at the end of the final group session. Follow-up measures were mailed to participants one month after the final ACT session, and participants were provided with a reply-paid envelope to return their completed assessments to the researchers.

**Treatment Procedure.**

The ACT group intervention was delivered by clinicians at The Melbourne Clinic private psychiatric hospital. The clinicians were psychologists and psychiatric nurses trained in ACT. The program was developed by The Melbourne Clinic clinicians, and consisted of 10 weekly sessions, each of which was two hours in duration. Consistent with the ACT transdiagnostic theoretical model, the treatment program was not designed to target a specific psychological disorder or disorders, rather it was designed for adults with a range of mental health problems. The focus of the
intervention was on assisting participants in practicing acceptance of unhelpful experiences, thoughts, and urges and promoting engagement in meaningful actions toward their valued life directions. Table 4 outlines the core areas covered in each treatment session. The author did not modify The Melbourne Clinic’s ACT treatment manual in any way.

Data was collected from participants across nine groups, which ran from October 2012 until June 2013. The nine groups were divided into three rounds of three groups, which ran concurrently by different clinicians. Each group was run by one clinician, and total of five clinicians were involved in facilitating the nine groups (two clinicians ran three groups each in separate rounds, and three clinicians ran a group each).

Table 4.

The Melbourne Clinic ACT group treatment overview

<table>
<thead>
<tr>
<th>Session</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 1. Introduction to ACT, Group Therapy and Creative Hopelessness | • General Introduction and introduction to ACT  
• Establishment of group guidelines  
• Creative hopelessness – discussion of strategies used in the aim of control and avoidance, and the costs of these  
• Discussion of secondary suffering and values  
• Brief mindfulness exercise |
| 2. ACT Foundations | • Introductions  
• Review of week – discussion of participants’ engagement in avoidance and values during the week  
• Introduction to mindfulness practice  
• Mindful chocolate eating  
• Brief informal and formal mindfulness discussion and practice  
• Homework: mindfulness practice and noticing what your thoughts tell you |
| 3. Introduction to Acceptance | • Review of mindfulness during the week (focus on mindfulness of pleasurable moments)  
• Vicious cycles of avoidance  
• Acceptance as the alternative to avoidance – discussion of acceptance and willingness for things that cannot be changed (thoughts, emotions, other people, the world, versus behavior and attention)  
• Expansion exercise  
• ‘ACT in a Nutshell’ mindfulness exercise |
| 4. Introduction to Values | • Review of mindfulness practice and acceptance of emotions during the week. Discussion of what got in the way  
• Introduction to the concept of values  
• Values clarification exercise – incorporating art and written reflection  
• Debrief/sharing with the group  
• Homework: reflecting on values, mindfulness practice, paying attention to thoughts |
| 5. Introduction to Cognitive Fusion and Defusion | • Review of mindfulness of pleasurable moments during the week  
• Mindfulness of the breath and labelling thinking  
• Recap of the previous weeks – mapped on ACT hexiflex  
• Recap of values  
• Cognitive fusion experiential exercises and rationale for defusion  
• Discussion of defusion exercises (e.g. “I’m having the thought that…”, sing uncomfortable thoughts) |
| 6. Values and Committed Action | • Review of mindfulness of pleasurable moments during the week  
• Review of ACT principles (including control, primary and secondary suffering, struggle) and discussion of how group members are incorporating principles into their lives  
• ‘Demons on the boat’ exercise  
• Committed action and values – setting of a values-based goal for the week, using the ‘Willingness and Action Plan’  
• Homework: attempt committed action goal |
| 7. Acceptance and Values Revisited and Introduction to the Observing Self | • Review of mindfulness of pleasurable moments and general mindfulness practice during the week  
• Discussion of how group members have been incorporating ACT principles into their lives  
• Review of Acceptance versus control and avoidance. Review of common control and avoidance strategies  
• Expansion exercise and debrief  
• Review of committed action homework and discussion of barriers and challenges  
• Setting of a values-based goal for the week, using the ‘Willingness and Action Plan’ |
| 8. Choice Points and Values in the Real World | • Review of mindfulness of pleasurable moments during the week and committed action  
• Review of how group members have been incorporating ACT principles into their lives  
• ‘Choice points’ description and mindfulness exercise (a behavior which takes you closer or further away from your values)  
• Values rating form  
• Committed Action map exercise  
• ‘Passengers on the Bus’ role play |
9. The Observing Self and Maintaining Committed Action
- Review of mindfulness of pleasurable moments during the week
- Review of how group members have been incorporating ACT principles into their lives
- Observing self exercise and debrief
- Discussion of willingness
- Defusion brainstorm – thoughts and feelings that get in the way of willingness; cultivating willingness
- Expansion exercise
- Setting of a values-based goal for the week, using the ‘Willingness and Action Plan’

10. Revision and Consolidation of ACT Principles
- Discussion of thoughts and feelings about group end
- ACT quiz
- Mindfulness exercise
- Group discussion to reflect on the last 10 weeks
- Graduation
- Post-treatment evaluation

Ethical Considerations.

This project was approved by The Melbourne Clinic Research Ethics Committee (Project No. 211) on 13 June 2012. The project was approved by the RMIT University Human Research Ethics Committee (Project No. ASEHAPP 31/12) on 13 September 2012 (see Appendices G and H). Prior to taking part in the research by completing the questionnaire packages, participants were provided with a plain language statement outlining the purpose of the research, the relevant questions being addressed, requirements associated with participation, potential risks and disadvantages of involvement, information regarding data management, the individual’s rights as a participant, the voluntary nature of participation and the contact details of the principal investigator and project supervisor (see Appendix I).

A number of measures were taken to protect the privacy of participants. At no point during the course of the research did researchers have access to participants’ files at The Melbourne Clinic. In order to link questionnaire responses across the different time points, participants generated their
own personal code (Grube, Morgan and Kearney, 1989) by answering the following questions:
Month of birth, Number of older brothers, Number of older sisters, First initial of mother’s first name, first initial of father’s first name. No identifying information was recorded on the hard copies of self-report forms.

Completed forms were kept at the School of Health Sciences at RMIT University, within a locked filing cabinet. Access to both digital and hard-copy data was restricted to the investigators and the supervisor. Digital data did not contain any identifying information, and was entered into statistical packages was password encrypted and stored in a secured hard drive.

Finally, information will be retained only for the required period (5 years) and will then be securely destroyed. Electronic data will be disposed of through an approved method of electronic deletion. Paper materials will be shredded.

Results

Preliminary Analyses.

All data analysis in Study Two was conducted using SPSS for Windows version 21. The outcome variables were inspected for missing data at pre-treatment, post-treatment, and follow-up. The rate of missing data was highest for the pre-treatment measures, however the amount of missing data at this point was not substantial, at less than 5% for the majority of measures. Missing data at post-treatment and follow-up was 0% for the majority of variables. In instances where participants missed a complete questionnaire at any assessment, these were excluded from the overall analyses.

No missing data estimation technique was to impute responses for whole measures. There were very few missing responses to individual items on questionnaires. In the few cases where this did occur, the mean substitution method of missing data estimation was used, and missing values were replaced with estimated values.
Attrition analysis.

The rates of attrition in this study were quite high, with 18 of the initial 40 participants completing the post-treatment measures, and only 4 of these participants responding to the 1-month follow-up questionnaire package. In light of the high rate of attrition noted, an attrition analysis was conducted. A series of independent samples t-tests were conducted to examine differences between those participants who completed the post-treatment measures and those who did not, on age, sex, number of diagnoses, and baseline levels of depression, anxiety, stress, worry, rumination, experiential avoidance, cognitive fusion, mindfulness, valued living, disability, satisfaction with life, and personal wellbeing. Analysis revealed no significant difference between the groups on any variable, except for personal wellbeing, with completers exhibiting higher levels of personal wellbeing at baseline ($M = 43.78$) than non-completers ($M = 33.00$), $t(36) = 2.702$, $p < .01$.

Due to these high rates of attrition, a linear mixed-effects model analysis was used to determine the effect of the intervention from pre- to post-treatment. A linear mixed-effects models analysis is appropriate in instances when repeated measures analyses are required, yet there is significant attrition at different points of measurement. This approach includes all observations at each time point, such that a participant’s data is not excluded if they have not completed the questionnaire package at each assessment phase. Therefore, this technique reduces the bias which may be created from excluding respondents based on incomplete data (Cnaan, Laird, & Slassor, 1998). Furthermore, a linear mixed-effects models analysis is a preferable way of managing data missing from different time points than data imputation, as it makes fewer assumptions about the nature of the missing data and consequently produces less biased estimates (Kalton & Kasprzyk, 1982). The linear mixed-effects models analysis was used to analyse the impact of the ACT intervention from pre- to post-treatment only. In light of the very low response rate to the follow-up measures, a trend analysis was used to explore the changes in outcome variables at follow-up.
Descriptive Statistics.

Descriptive statistics for the outcome variables at each of the three assessment points are presented in Table 5.

Table 5.
*Descriptive Statistics for Outcome Variables at Pre-Treatment, Post-Treatment and Follow-up*

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Post-Treatment</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M (SD)</td>
<td>N</td>
</tr>
<tr>
<td>PSWQ</td>
<td>38</td>
<td>60.87</td>
<td>(12.87)</td>
</tr>
<tr>
<td>RRS</td>
<td>38</td>
<td>57.37</td>
<td>(12.26)</td>
</tr>
<tr>
<td>Brooding</td>
<td>40</td>
<td>13.8</td>
<td>(3.54)</td>
</tr>
<tr>
<td>Reflection</td>
<td>38</td>
<td>11.32</td>
<td>(3.07)</td>
</tr>
<tr>
<td>Depression-related Rumination</td>
<td>40</td>
<td>32.35</td>
<td>(7.61)</td>
</tr>
<tr>
<td>DASS-21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>39</td>
<td>18.92</td>
<td>(12.26)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>39</td>
<td>13.08</td>
<td>(9.85)</td>
</tr>
<tr>
<td>Stress</td>
<td>39</td>
<td>21.44</td>
<td>(10.26)</td>
</tr>
<tr>
<td>MAAS</td>
<td>39</td>
<td>3.29</td>
<td>(.79)</td>
</tr>
<tr>
<td>VLQ</td>
<td>40</td>
<td>40.47</td>
<td>(15.74)</td>
</tr>
<tr>
<td>CFQ</td>
<td>37</td>
<td>62.70</td>
<td>(11.94)</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>37</td>
<td>35.54</td>
<td>(9.16)</td>
</tr>
<tr>
<td>SDS</td>
<td>36</td>
<td>18.25</td>
<td>(7.93)</td>
</tr>
<tr>
<td>Satisfaction with Life as a Whole</td>
<td>38</td>
<td>4.13</td>
<td>(2.43)</td>
</tr>
<tr>
<td>PWI</td>
<td>38</td>
<td>38.10</td>
<td>(13.28)</td>
</tr>
</tbody>
</table>
Inferential Analyses.

Relationships between variables.

The relationships between worry (as measured by the PSWQ), rumination (as measured by the RRS), ACT constructs (AAQ-II, CFQ, MAAS, VLQ) and psychological symptomatology (DASS) were investigated using Pearson product-moment correlation coefficients. Preliminary analyses were performed to ensure no violations of the assumptions of normality, linearity and homoscedacity. The correlations between variables of interest are presented in table 7.

As expected, there was a large positive correlation between the PSWQ and the RRS. The PSWQ and the RRS were each strongly and positively correlated with the DASS stress scale, the AAQ, and the CFQ. There were also strong negative correlations between the PSWQ and the MAAS, and the RRS and the MAAS. There were moderate, positive correlations between the PSWQ and the depression and anxiety scales of the DASS, and the depression and anxiety scales were also moderately and positively correlated with the RRS.
Table 6.

Pearson Product-moment Correlations between Measures of Worry, Rumination, ACT-Related Constructs and Psychological Symptomatology

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PSWQ</td>
<td>-</td>
<td>.667**</td>
<td>.395*</td>
<td>.475*</td>
<td>.589**</td>
<td>.698**</td>
<td>.723**</td>
<td>-.643**</td>
<td>-.096</td>
</tr>
<tr>
<td>2. RRS</td>
<td>-</td>
<td>-</td>
<td>.481**</td>
<td>.467**</td>
<td>.522**</td>
<td>.742**</td>
<td>.690**</td>
<td>-.680**</td>
<td>-.254</td>
</tr>
<tr>
<td>3. Depression</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.582**</td>
<td>.366*</td>
<td>.606**</td>
<td>.583**</td>
<td>-.399*</td>
<td>-.578**</td>
</tr>
<tr>
<td>4. Anxiety</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.494**</td>
<td>.682**</td>
<td>.587**</td>
<td>-.182</td>
<td>-.338*</td>
</tr>
<tr>
<td>5. Stress</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.600**</td>
<td>.562**</td>
<td>-.491**</td>
<td>-.199</td>
</tr>
<tr>
<td>6. AAQ-II</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.862**</td>
<td>-.579**</td>
<td>-.291</td>
</tr>
<tr>
<td>7. CFQ</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.533**</td>
<td>-.279</td>
</tr>
<tr>
<td>8. MAAS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.257</td>
</tr>
<tr>
<td>9. VLQ</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

< .05, **p < .01 (2-tailed).

**Intervention effects.**

**Baseline to Post-Treatment.**

Using linear mixed-effects models, a standard single-factor within-subjects ANOVA was conducted to examine the impact of the ACT intervention from pre-treatment to post-treatment. The models included phase as a categorical repeated measures factor, and participants’ total scores on the outcome measures as the dependent variables. As is recommended, a variety of covariance structures, including first-order autoregressive, compound symmetry and scaled identity, and model selection was based on the Akaike Information Criterion (AIC). The compound symmetry model yielded the lower AIC.
The results of the linear mixed-effects model analysis of the changes in participants’ scores on worry, rumination and other outcome variables following the ACT intervention are summarized in table 7.

**Table 7.**

Change in Outcome Measures from Pre-Treatment to Post-Treatment based on Linear Mixed-Effects Models Analysis

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>ηp²</th>
<th>CI ηp²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>PSWQ</td>
<td>1, 21.02</td>
<td>5.559</td>
<td>.027*</td>
<td>.21</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>RRS total</td>
<td>1, 24.26</td>
<td>9.422</td>
<td>.005**</td>
<td>.28</td>
<td>.03</td>
</tr>
<tr>
<td>Brooding</td>
<td>1, 23.30</td>
<td>4.257</td>
<td>.050*</td>
<td>.15</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Reflection</td>
<td>1, 31.78</td>
<td>4.424</td>
<td>.043*</td>
<td>.12</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Depression Related Rumination</td>
<td>1, 23.64</td>
<td>9.488</td>
<td>.005**</td>
<td>.29</td>
<td>.03</td>
</tr>
<tr>
<td>DASS-21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>1, 18.50</td>
<td>8.729</td>
<td>.008**</td>
<td>.32</td>
<td>.03</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1, 11.97</td>
<td>6.830</td>
<td>.023*</td>
<td>.36</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Stress</td>
<td>1, 21.94</td>
<td>6.282</td>
<td>.020*</td>
<td>.22</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>1, 21.31</td>
<td>5.190</td>
<td>.000*</td>
<td>.20</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>CFQ</td>
<td>1, 22.85</td>
<td>29.448</td>
<td>.000**</td>
<td>.56</td>
<td>.25</td>
</tr>
<tr>
<td>MAAS</td>
<td>1, 22.10</td>
<td>6.729</td>
<td>.017*</td>
<td>.23</td>
<td>.01</td>
</tr>
<tr>
<td>VLQ</td>
<td>1, 26.89</td>
<td>18.267</td>
<td>.000**</td>
<td>.40</td>
<td>.12</td>
</tr>
<tr>
<td>SDS</td>
<td>1, 21.31</td>
<td>5.190</td>
<td>.033*</td>
<td>.20</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Satisfaction with Life as a Whole</td>
<td>1, 17.08</td>
<td>5.937</td>
<td>.026*</td>
<td>.26</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>PWI</td>
<td>1, 22.62</td>
<td>29.675</td>
<td>.000**</td>
<td>.57</td>
<td>.25</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01.
Data indicated that there were significant reductions on the PSWQ and RRS following the intervention. Participants’ scores on all of the subscales of the RSS (brooding, reflection, and depression-related rumination) were significantly lower at post-treatment. The change in scores RRS was associated with a larger effect size compared to the change in scores the PSWQ. Of the RRS subscales, the largest effect was observed for depression-related rumination.

There was a significant reduction in scores on the depression, anxiety and stress scales of the DASS-21 following the ACT intervention, with the most substantial reduction occurring in depression scores. The greatest effect was observed for anxiety.

There were significant changes in all ACT constructs from pre- to post-treatment. Significant reductions were observed on the AAQ-II and CFQ, while the MAAS and VLQ increased significantly following the intervention. The largest effects were observed for the CFQ and the VLQ.

Finally, an analysis of change in participants’ scores on the SDS revealed a significant reduction from pre- to post-treatment. Furthermore, scores on the Satisfaction with Life as a Whole item and the PWI increased significantly following the ACT intervention.

*Post-Treatment to Follow-Up.*

A trend analysis was used to test for the presence of a trend in the data over the three points of measurement (pre-treatment, post-treatment and follow-up). The results of the trend analysis are presented in table 8. The trends in the data were also inspected at a descriptive level using plots of the mean scores at each phase. These plots are displayed in figures 6, 7, 8, 9 and 10 below.
**Table 8.**

Trend Analysis Results for Outcome Variables

<table>
<thead>
<tr>
<th></th>
<th>Linear trends</th>
<th>Quadratic trends</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>PSWQ</td>
<td>1, 60</td>
<td>4.207</td>
</tr>
<tr>
<td>RRS total</td>
<td>1, 60</td>
<td>1.036</td>
</tr>
<tr>
<td>Brooding</td>
<td>1, 62</td>
<td>1.530</td>
</tr>
<tr>
<td>Reflection</td>
<td>1, 60</td>
<td>.189</td>
</tr>
<tr>
<td>Depression</td>
<td>1, 62</td>
<td>.933</td>
</tr>
<tr>
<td>DASS-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>1, 61</td>
<td>.015</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1, 61</td>
<td>.303</td>
</tr>
<tr>
<td>Stress</td>
<td>1, 61</td>
<td>2.085</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>1, 59</td>
<td>5.818</td>
</tr>
<tr>
<td>CFQ</td>
<td>1, 59</td>
<td>12.041</td>
</tr>
<tr>
<td>MAAS</td>
<td>1, 61</td>
<td>.697</td>
</tr>
<tr>
<td>VLQ</td>
<td>1, 62</td>
<td>10.452</td>
</tr>
<tr>
<td>SDS</td>
<td>1, 58</td>
<td>4.145</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>1, 60</td>
<td>2.531</td>
</tr>
<tr>
<td>PWI</td>
<td>1, 60</td>
<td>11.944</td>
</tr>
</tbody>
</table>

*\(p < .05\), **\(p < .01\).*
Figure 6. Participants’ mean worry scores (measured by the PSWQ) and mean rumination scores (measured by the RRS) at baseline, post-treatment and follow-up
Figure 7. Participants’ mean scores on the brooding, reflection and depression-related rumination subscales of the RRS at baseline, post-treatment and follow-up.
Figure 8. Participants’ mean depression, anxiety and stress scores (measured by the DASS-21) at baseline, post-treatment and follow-up.
Figure 9. Participants’ mean experiential avoidance (AAQ-II), cognitive fusion (CFQ), mindfulness (MAAS) and valued living (VLQ) scores at baseline, post-treatment and follow-up.
Figure 10. Participants’ mean disability (SDS), Satisfaction with Whole of Life, and personal wellbeing (PWI) scores at baseline, post-treatment and follow-up.
As can be seen in table 8, the only variable for which there was a significant quadratic trend was depression. In examining the plot of mean depression scores, it appears that this trend has resulted from a bounce-back in participants’ depression scores from post-treatment to follow-up. There were significant linear trends for the PSWQ, AAQ-II, CFQ, VLQ, and PWI, indicating that scores on these measures continued to change from post-treatment to follow-up. An inspection of the plots of these variables indicates that scores on the PSWQ continued to decrease at approximately the same rate from post-treatment to follow-up as pre- to post-treatment. There was a steep change in scores on the AAQ-II from baseline to post-treatment, and this change was maintained from post-treatment to follow-up, in spite of a slight increase in scores. There was also a steep decline in scores on the CFQ from pre- to post-treatment, which levelled out slightly from post-treatment to follow-up. Scores on the VLQ continued to increase from post-treatment to follow-up, however the rate of change levelled out somewhat. Scores on the PWI decrease slightly from post-treatment to follow-up, however there remained a notable improvement in scores on this measure from baseline to follow-up.

There was no significant trend for rumination. An examination of the plot of total RRS scores suggests that was a minimal increase in scores from post-treatment to follow-up, but that follow-up scores were notably reduced compared to baseline scores. An inspection of the plots of the subscales of the RRS indicates that brooding scores levelled out from post-treatment to follow-up, indicating maintenance of change. There was little change in reflection across the three time points. There was a slight increase in scores on the depression-related rumination subscale from post-treatment to follow-up.

There were no significant trends for anxiety and stress. An examination of the plots of these variables suggest there was a similar bounce-back in anxiety scores from post-treatment to follow-up
as there was in depression scores, however a significant trend was not observed. Stress scores returned to baseline levels.

An examination of the plot of MAAS scores revealed that mindfulness increased substantially from pre- to post-treatment, then levelled out from post-treatment to follow-up. A descriptive analysis of the plot of MAAS scores suggests that change was maintained from post-treatment to follow-up, however this was not supported statistically in the trend analysis.

There was no significant trend for SDS scores, however an examination of the plot of scores on this measure indicates suggests that change was maintained, as there appears to be minimal change in scores from post-treatment to follow-up. This pattern was also observed for Satisfaction with Life as a Whole scores, however there was also no significant trend for this measure.
Discussion

Study Two examined the effectiveness of a group-based ACT intervention for the treatment of worry and rumination in individuals with transdiagnostic psychological problems attending the outpatient service at a private psychiatric hospital. The objective of this study was to expand upon the findings of Study One by examining the impact of ACT on worry and rumination in a larger sample, in addition to exploring the effects of the treatment on participants’ depression, anxiety and stress, and ACT-related variables (experiential avoidance, cognitive fusion, mindfulness, and valued living). The impact of the intervention on functional impairment and quality of life (life satisfaction and personal wellbeing) were also of interest, as were the relationships between worry and rumination, measures of psychological symptomatology, and ACT constructs. The specific hypotheses and findings associated with each variables of interest will be discussed individually in the following section.

Worry and rumination.

It was hypothesised that there would be significant reductions in ACT group participants’ worry and rumination from pre-treatment to post-treatment. This hypothesis was supported by the results, as worry and rumination both decreased significantly from pre- to post-treatment. The reductions in the brooding, reflection, and depression-related rumination were all significant, with the most change occurring in depression-related rumination. These findings suggest that the ACT intervention was most effective for the type of rumination that is correlated with depressive symptoms, for example, thinking about how passive and unmotivated you feel (Treynor et al., 2003). A possible explanation for this finding is that the rumination which occurs in relation to one’s psychological symptoms may be the most amenable to change, perhaps because it reduces concurrently as depression and anxiety.
decrease. Importantly, however, the results also suggest that ACT is effective for rumination that is independent of psychological symptomatology.

It was also hypothesised that changes in worry and rumination would be maintained at 1-month follow-up. The observed reduction in worry was not only maintained from post-treatment to follow-up, but levels of worry actually continued to reduce during this period. While the follow-up results must be interpreted with caution based on the fact that only four participants completed measures at this point, the pattern of change observed for worry from post-treatment to follow-up suggests that participants generalized what they learnt in the intervention into their day-to-day lives, adopting an ACT approach to the management of their worry. This represents the ideal outcome of any psychological intervention, and this finding therefore provides strong support for the effectiveness of ACT for the treatment of pathological worry. There was no significant trend associated with participants’ rumination scores at follow-up, however a descriptive analysis indicates that the results indicated that reductions in rumination were largely maintained. Interestingly, while not indicative of a significant trend, it appears that brooding was the only rumination-related construct which continued to decrease from post-treatment to follow-up. This is promising, as research has shown that brooding is associated with more depression concurrently and longitudinally, relative to reflection (Treynor et al., 2003). Thus, there is some indication that ACT is effective in producing sustainable improvements in rumination.

Interestingly, while worry continued to decrease following the intervention and rumination did not, the magnitude of change from baseline to post-treatment was greater for rumination compared to worry. This suggests that ACT was more effective for rumination across the course of the intervention (while still being effective for worry), but was more effective for worry from post-treatment to follow-up. It is possible, therefore, that ACT
impacts worry and rumination in different ways, perhaps based on the inherent differences between these constructs. One key difference is that rumination (and particularly depression-related rumination) is more associated with psychological symptoms than worry, such that its onset may be triggered by the experience of a depression or anxiety-related symptom, emotion, or bodily sensation, which cues the individual to perseverate over their symptoms and psychological problems. If this is the case, rumination is likely to be particularly affected by change in symptomatology, such that if depression and anxiety increase somewhat following an intervention (as they did in the present study), rumination is also likely to experience a bounce-back effect. Conversely, it may be that worry is less sensitive to change in depression and anxiety, which is consistent with the present finding in that worry continued to decline following the conclusion of the intervention, in spite of increases in depression and anxiety.

Another potential difference between worry and rumination which may explain the differences in these variables observed at post-treatment (in terms of magnitude of change) and follow-up (in terms of continuation of change) is that individuals are better able to identify when they are worrying compared to when they ruminating. There are several reasons for why this may be the case. In the theoretical and empirical literature, worry is clearly a better understood concept than rumination, which remains ambiguous and is not associated with a single, accepted definition (Siegle, 2008). It is possible that this lack of clarity has meant that in spite of the prevalence of the experience of rumination, rumination as a term and a concept has not yet gained mainstream awareness. In addition, it may be that worry is more easily identifiable for individuals because it is frequently associated with physical symptoms of anxiety (feelings of tension, panic, heart palpitations, and so forth), whereas rumination is not necessarily associated with an obvious physiological response,
and may be difficult to differentiate from simply being in a “bad mood”. Finally, it is possible that individuals are more aware of their worry than their rumination, as it is likely that they would have discussed it with their treating team as part of the symptom profile of anxiety and/or GAD, whereas in spite of rumination’s intrinsic role in depression, it is not part of the diagnostic criteria for depressive disorders, and is therefore less likely to be discussed in conversations with doctors and psychiatrists.

The possible difference in people’s understanding and awareness of worry compared to rumination may have had implications following the conclusion of a psychological intervention. While it must be remembered that the follow-up sample in the present study is very small, it was this period where prominent differences between worry and rumination were observed. The superior improvement in worry relative to rumination may be because individuals are better able to identify when they are worried, and therefore have the opportunity to implement the ACT techniques they learnt in the intervention to manage their worry. Rumination, on the other hand, may not be as easily identifiable, and if the individual is not able to notice that they are ruminating, then they are less able to implement strategies that may shift their focus and lead to improvement. Furthermore, it may be that the greater reduction in rumination relative to worry observed from baseline to post-treatment was because of the intervention’s strong emphasis on shifting attention and mindfulness of positive and pleasurable experiences, which would have cued participants’ attention away from their depression and anxiety (which were also improving concurrently). Thus, while the ACT intervention was highly effective in reducing rumination and worry over the course of treatment, it may be important to better define rumination and assist individuals to see how it operates in their lives, in order to consolidate the intervention techniques aimed at ameliorating this process over time.
Overall, the present findings support the application of ACT to worry and rumination, suggesting that it leads to significant change in these processes, which are maintained following the conclusion of treatment. The findings are consistent with the literature which indicates that there are important differences as well as similarities between worry and rumination, and it is possible that these differences may mediate the long-term impact of ACT.

Psychological symptomatology. It was hypothesised that there would be significant reductions in participants’ clinical symptomology (depression, anxiety and stress) following the ACT intervention. This hypothesis was supported by the results, as depression, anxiety and stress all decreased significantly from baseline to post-treatment. This finding is consistent with the ACT empirical literature outlined in Chapter Four which indicates that ACT is an effective treatment for anxiety and depression.

It was also hypothesised that changes in depression, anxiety and stress would be maintained at 1-month follow-up. This hypothesis was partially supported by the current findings. The data revealed that participants’ depression and anxiety increased somewhat from post-treatment to follow-up, and a significant quadratic trend was observed for depression, indicating a bounce-back effect. However, an inspection of the plotted scores suggests that depression and anxiety scores remained reduced from baseline, indicating that some change had been maintained. Interestingly, while no significant trend was observed, stress appeared to return to baseline levels at follow-up, indicating that the reduction in stress observed at post-treatment was not maintained.

The fact that depression, anxiety and stress increased from post-treatment to follow-up is surprising and inconsistent with previous research which has found that treatment effects associated with ACT interventions were maintained (and even increase) at follow-up
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(e.g. Arch et al., 2012; Bohlmeiker et al., 2001; Clarke et al., 2012; Hayes et al., 2011; Forman et al., 2007; Roemer & Orsillo, 2007). Therefore, it may be that the present findings regarding the effectiveness of ACT beyond the conclusion of an ACT intervention may be due to the small sample of follow-up respondents. However, it is also important to note that the increase in depression, anxiety and stress observed at follow-up occurred in the context of improved personal wellbeing and life satisfaction. An alternative explanation for the bounce-back of psychological symptomatology is therefore offered below.

**ACT process measures.**

It was hypothesised that relative to pre-treatment, ACT group participants would have significantly lower levels of experiential avoidance and cognitive fusion, and significantly higher levels of valued living and dispositional mindfulness. The present findings supported this hypothesis, as experiential avoidance and cognitive defusion decreased significantly from pre-treatment to post-treatment, and mindfulness and valued living increased significantly. It was also hypothesised that changes in ACT variables would be maintained at 1-month follow-up. This hypothesis was supported, with experiential avoidance and cognitive defusion continuing to decrease at post-treatment in a linear direction, and values continuing to increase. Changes in mindfulness was maintained at follow-up.

The present results suggest that an ACT intervention is effective in promoting sustainable change in the mechanisms it sees as being key to psychological flexibility and overall wellbeing and vitality. The findings are consistent with the ACT literature which has shown that ACT leads to increased acceptance (Bohmeijer et al., 2001; Forman et al., 2007), mindfulness (Meuret et al., 2012), and psychological flexibility (Twohig, 2009), and reduced experiential avoidance (Dalrymple & Herbert, 2007; Ossman et al., 2006). Importantly, the current research also build on previous ACT research, as to date no study of ACT and
depression and anxiety has included a measure of cognitive fusion and valued living. Thus, the present results provide support for the effectiveness of ACT in significantly reducing cognitive fusion and increasing engagement with values.

A secondary hypothesis related to the predicted change in ACT-related variables was that the relationship between worry and rumination would and ACT-related variables would be stronger than the relationship between worry and rumination and depression, anxiety and stress. This hypothesis was supported, as the correlational analysis indicated that a stronger relationship existed between both worry and rumination and ACT constructs compared to the relationship between worry and rumination and psychological distress. While conclusions cannot be drawn based on the current data, the fact that worry and rumination were so closely related to experiential avoidance and cognitive fusion in particular makes it quite possible that the observed changes in worry and rumination were directly associated with changes in these ACT-related variables. Further support for the role of experiential avoidance and cognitive fusion in the reductions in worry and rumination lies in the fact that changes in worry, rumination, experiential avoidance and cognitive fusion were all either maintained or continued to improve from post-treatment to follow-up, whereas depression, anxiety and stress all increased somewhat. Thus, the current findings provide evidence for the strong relationship between worry and rumination and experiential avoidance, cognitive fusion, and mindfulness, and to a lesser extent, valued living. These results are consistent with the literature which defines the function of worry and rumination as experiential avoidance (e.g. Borkovec, 1994; Crib et al., 2006; Giorgio et al., 2010; Nolen-Hoeksema et al., 2008), suggesting that a reduction in experiential avoidance (in addition to changes in cognitive fusion, mindfulness and valued living) coincides with a reduction in worry and rumination.
Quality of life.

It was hypothesised that following the ACT intervention, participants would have significantly higher levels of personal wellbeing and satisfaction with life, and significantly lower levels of functional impairment. This hypothesis was supported, as satisfaction with life and personal wellbeing increased and functional impairment reduced significantly following the intervention. It was also hypothesised that changes in satisfaction with life, personal wellbeing and functional impairment would be maintained at 1-month follow-up. This hypothesis was supported, with personal wellbeing continuing to increase in a linear fashion at follow-up, and satisfaction and functional impairment levels being maintained. However, it is again important to note the sample of individuals who completed the follow-up measures was very small.

These results are consistent with the literature which indicates that ACT is effective in improving quality of life and life satisfaction (e.g. Clarke et al., 2012; Dalrymple & Herbert; Forman et al.; Twohig et al., 2010). They are very significant findings as they indicate that essentially, the intervention made participants feel better about their lives and themselves, and reduced their level of impairment in engaging with the different facets of their world. Furthermore, it is important to highlight that while depression, anxiety and stress increased somewhat from post-intervention to follow-up, improvements in functionality and life satisfaction were maintained, and personal wellbeing continued to improve. This indicates that in spite of the rebound that occurred in participants’ psychological symptoms, their overall quality of life remained stable, and even improved in some aspects. A possible explanation for this finding is that the functional context around the participants’ psychological symptoms changed. For example, in light of the fact that following the intervention the participants were experiencing reduced experiential avoidance and were
engaging in avoidance strategies such as worry and rumination to a lesser degree (as indicated by the results), while simultaneously engaging in increased levels of values-consistent behavior, it is not surprising that individuals experienced a resurgence of anxiety, stress and depressed mood as they grappled with making changes in their lives without the weekly support of the ACT group. If this explanation is accurate, the context of this distress is not one of avoidance but of living a meaningful life in the service of one’s values, which is consistent with the finding that life satisfaction, functionality and personal wellbeing were maintained in spite of changes in depression, anxiety and stress. Thus, this finding is highly consistent with the assumptions of the ACT model, which proposes that the presence of difficult private events does not have to equate to the absence of vitality, wellbeing, and even happiness.

**Overall summary.**

The aim of Study Two was to explore the effectiveness of ACT for rumination and worry in a transdiagnostic sample. The findings of this study lend support for the use of ACT in the treatment of pathological worry and rumination in individuals with a range of psychological problems. The group ACT intervention was associated with significant reductions in participants’ worry, rumination, depression, anxiety and stress, and improvements in participants’ life satisfaction, personal wellbeing, and functionality. The intervention was also associated with large and sustained changes in experiential avoidance, cognitive fusion, mindfulness, and valued living.

**Limitations and future directions.**

The findings of this study must, however, be interpreted in the context of its limitations, the most important one being the absence of a control condition. The fact that there was no control condition to compare the treatment effects against means that it is not
possible to infer any casual conclusions in relation to the findings. Another important limitation is the relatively small sample size. The attrition in this study was significant, with quite large reductions in responses occurring at both post-treatment follow-up. The fact that a substantial proportion of ACT program participants did not complete the post-treatment and follow-up measures may have influenced the representativeness of the results in important ways. For example, while the sample of individuals who completed the post-treatment measures did not differ significantly from the non-completers at baseline, it may be that the non-completers were less satisfied with the intervention program and/or ACT in general than the completers, and were therefore less inclined to complete the post-treatment measures. In addition, it is possible that individuals who experienced symptom improvement over the course of the intervention were more motivated to complete the follow-up measures. If this was the case, it would mean that the post-therapy findings regarding the impact of ACT may be biased by the fact that they are based only on a sample of individuals who had a positive experience of the intervention, and this must be kept in mind when considering the generalizability of the present findings. The findings pertaining to the follow-up assessment in particular should be viewed in light of the fact that a very small proportion of the sample completed the measures at this point, and should therefore be considered preliminary findings only, rather than a generalizable indication of the long-term impact of ACT for worry and rumination.

Future research on group ACT for worry and rumination should explore ways of minimizing participant attrition. While the follow-up period was set at one month post-intervention based on the view that participants would be more likely to respond sooner after the intervention rather than later, this may have contributed to the low response rate. While the assessments were not lengthy, it is possible that the follow-up assessment point was too
soon after the intervention, and participants were reluctant to complete it having completed the questionnaire package only one month prior. It is impossible to determine whether there would have been a better response had follow-up occurred at 3 months post intervention, for example, however this may be an area for future exploration.

These limitations aside, as the first multiple-participant study on ACT for worry and rumination, this study represents an initial step to understanding the effectiveness of ACT in relation to these cognitive processes. Future research should continue to build on the present findings to explore the mechanisms of action responsible for the impact of ACT on worry and rumination; specifically, which treatment components are most integral to change in worry and rumination, and whether ACT processes have a direct effect on worry and rumination even when change in depression and anxiety is controlled for.
Chapter 8. Summary and Conclusions

Chapter Overview

This chapter focuses on summarizing the research findings of studies one and two, and integrating the results in the context of the proposed theoretical rationale for the application of Acceptance and Commitment Therapy (ACT) to worry and rumination. The chapter will begin with a review the aims and design of studies one and two, and will go on to summarise the findings of both research programmes. The second part of the chapter will discuss the clinical implications of the current research studies with reference to the key research concern – the effectiveness of ACT for worry and rumination – in addition to another significant implication which emerged from the research, which was the differences between worry and rumination. In reviewing the effectiveness of ACT for worry and rumination based on the current research, the support for an experiential avoidance model of worry and rumination, support for a focus on process rather than content in the treatment of worry and rumination, and support for the relevance of the ACT model in the treatment of worry and rumination will also be discussed. Finally, future directions for research will be discussed, and a treatment framework for ACT for worry and rumination will be provided.

Aims and Design

The aim of the current research studies was to explore the effectiveness of group Acceptance and Commitment Therapy for the treatment of worry and rumination as transdiagnostic cognitive processes. This was examined through exploring the impact of an ACT group program delivered in a community setting, in addition to the outcomes of a group ACT intervention delivered through the outpatient service of a private psychiatric hospital. Study One utilised a case study design and incorporated both quantitative and qualitative measures. It represented a preliminary exploration of the effectiveness of ACT for worry and
rumination, as there has been no published research to date on the application of ACT to rumination and worry. The use of a mixed methods approach afforded a deep and detailed exploration of whether ACT was effective in reducing worry and rumination, and how the participant engaged with an ACT approach. Study Two utilised a within-subjects repeated measures design to assess whether ACT is a viable option for the treatment of worry and rumination amongst individuals with a range of transdiagnostic psychological problems. The objective of Study Two was to illuminate and expand on the findings of Study One using a larger sample, in particular, by exploring the relationships between worry and rumination, ACT therapeutic processes and anxiety and depression.

**Summary of Findings**

Data from Study One demonstrated that ACT was effective in reducing the participant’s rumination but not her worry, and the change in rumination was maintained at follow-up. The intervention also led to a reduction in the participant’s anxiety but not her depressive symptoms, however her depression score was not at clinical levels at pre-treatment. The participant also experienced an increase in functioning following the intervention. Interestingly, the participant experienced no significant change in ACT-related variables other than mindfulness, which increased following the intervention and was maintained at follow-up. The qualitative data indicated that it was also mindfulness which the participant felt was the therapeutic component which had the greatest and most lasting impact on her, while she talked about struggling with acceptance as her degree of experiential avoidance and investment in the control agenda were entrenched and difficult to shift. Study One yielded some interesting findings which required further exploration in Study Two: firstly, the fact that there was no change in most ACT constructs (experiential avoidance, cognitive fusion, and valued living) was very surprising, and warranted further exploration.
with a larger sample. Second, the participant only experienced change in rumination, not worry, and anxiety but not depression, which was unexpected in light of the literature which assumes strong relationships between these variables. Third, Study One raised an additional, important question, which could not be addressed by Study Two, but which should be explored in future research: is the impact of ACT moderated by prior experience with CBT?

The results of Study Two provide support for the effectiveness of ACT in treating worry and rumination, in addition to depression and anxiety, the primary psychological disorders with which worry and rumination are associated. Data also indicated that a group ACT intervention was associated with significant change in ACT-related constructs, and that ACT was linked to increased life satisfaction, functionality, and personal wellbeing. Follow-up data indicated that changes in worry, ACT constructs, and personal wellbeing were maintained, however depression, anxiety and stress increased at 1-month follow-up (although scores remained reduced from baseline levels). However, follow-up trends must be interpreted in light of the fact that data is based on only four participants.

Clinical Implications of Findings

The effectiveness of ACT for worry and rumination.

The findings from studies one and two support the application of ACT to worry and rumination. Prior to the current research, empirical ACT had only looked at the effectiveness of ACT for depression and anxiety, without focusing specifically on worry and rumination as key processes in the onset and maintenance of these disorders. Thus, the present findings provide empirical support for the strong theoretical rationale for applying ACT to the treatment of worry and rumination outlined in Chapter Five. Because of the small sample size and absence of a control condition, it is impossible to determine from the current study whether the reductions in psychopathology observed in the two studies were mediated by the
reductions in worry and rumination, however the findings do suggest that ACT is associated with reductions in rumination and worry, which occurred alongside reductions in psychological distress and improvements in quality of life and wellbeing.

*Support for an experiential avoidance model of worry and rumination.*

The current findings were consistent with the theory and research which proposes that worry and rumination have avoidant functions (e.g. Borkovec, 1994, 1998; Cribb et al., 2006; Giorgio et al., 2010; Nolen-Hoeksema et al., 2008; Sibrava and Borkovec, 2006). The current study also builds on existing research by providing support for an experiential avoidance model of rumination, as while it is widely accepted that worry serves an avoidance function, only a few studies have looked at rumination as a form of avoidance. In Study One, the participant was highly avoidant and experienced great difficulty with the concept of acceptance, and the fact that neither her levels of worry nor her levels of experiential avoidance changed may suggest a relationship between the two variables. In Study Two, the data revealed strong relationships between worry, rumination, and experiential avoidance, and the fact that the ACT intervention was successful in reducing participants’ worry and rumination further indicates that the concept of experiential avoidance is important in understanding and treating worry and rumination. Thus, the findings suggest that worry and rumination are mechanisms of experiential avoidance, that is, that the function of these processes is to allow the individual to avoid painful and distressing emotions and other private events. In light of this, interventions focusing on worry and rumination should incorporate an analysis of how the client’s worry and rumination function to maintain their experiential avoidance, in the context of broader psychological difficulties.
Support for a focus on process rather than content in the treatment of worry and rumination.

The present findings are also consistent with the trends observed in more recent interventions for worry and rumination which focus on the process aspects of worry and rumination as opposed to targeting the content of worry and rumination. Consistent with an ACT approach, at no point in either of the present interventions was there any discussion of the content of worry and ruminative thought, however, rumination reduced substantially in Study One, and both rumination and worry decreased significantly in Study Two. The fact that ACT was effective in significantly reducing rumination in both studies and worry in one suggest that it is not necessary to engage with the content of these constructs at all in reducing the frequency and intensity of their occurrence. This finding has broader clinical implications for the ACT versus CBT debate, as central to this dichotomy is the question of whether maladaptive thoughts should be disputed or accepted (Marker & Abramova, 2011). Consistent with the trends in the rumination and worry intervention literature, the present findings provide support for the latter approach to dealing with thoughts, at least in the context of worry and rumination. The current research also builds on the existing research on process-focused interventions for worry and rumination as it is the first research to examine the effectiveness of a process-based intervention which targets both worry and rumination as co-occurring, transdiagnostic processes, whereas other interventions which incorporate similar principles (e.g. RFCBT, metacognitive therapy, MBCT) have only focused on worry or rumination in isolation. Furthermore, ACT incorporates additional therapeutic components which are aimed at improving the individual’s overall functioning and quality of life (such as mindfulness, values and committed action), as opposed to merely focusing on reducing the occurrence of worry and rumination.
Support for the relevance of the ACT model in the treatment of worry and rumination.

More broadly, the present findings also provide support for the ACT model in general, in that worry and rumination (in addition to depression and anxiety) reduced substantially following the ACT interventions, despite the fact that, consistent with the ACT model of psychopathology, neither intervention targeted them specifically, nor were they emphasised as an explicit aim of therapy. This finding is consistent with other research (e.g. Ossman et al. 2006) which has found that ACT leads to the amelioration of problematic symptoms without them being an explicit focus of therapeutic efforts (as would be the case in CBT).

Given that the current findings suggest that it is not necessary to focus on specific symptoms in order to achieve widespread improvement, the findings also provide support for ACT as a transdiagnostic therapy, and suggest that it is effective in improving levels of worry and rumination, in addition to depression, anxiety and stress in a transdiagnostic sample. This is consistent with newer approaches to working with psychological distress, which focus on the overlap between mood and anxiety disorder diagnostic categories and emphasise the continuous rather than discrete nature of emotional problems (Barlow, Allen, & Choate, 2004; Nolen-Hoeksema & Watkins, 2011). For example, Barlow et al. propose a unified treatment for emotional disorders based on their argument that the similarities in etiology and latent structure between disorders outweigh the differences. Their proposed approach, which has not yet been evaluated empirically, involves three fundamental therapeutic components, which are: 1) altering antecedent cognitive reappraisals; 2) preventing emotional avoidance; and 3) facilitating action tendencies not associated with the emotion that is dysregulated. This framework has clear similarities to ACT in its emphasis on avoidance and intervention at the
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behavioural level, and when considered in conjunction with the more recent intervention literature for worry and rumination, points to the fact that in the treatment of emotional disorders and the cognitive processes they are associated with, the clinical psychological literature is moving away from an emphasis on targeting cognitive content for change, and towards a focus on targeting avoidance, shifting attention, and expanding the repertoire of behaviours that are enacted in response to emotional distress. Thus, the present research supports the use of a transdiagnostic therapeutic approach to treating worry and rumination as well as emotional disorders, and builds on the existing literature which indicates that ACT is a highly effective, empirically supported transdiagnostic therapy.

**Differences between worry and rumination.**

A final implication of the present findings is associated with conceptualisations of worry and rumination, and our understanding of the commonalities and differences between these cognitive processes. It has been suggested that worry and rumination are so similar that they there may be a single construct representing negative thought (Ehring & Watkins, 2008). While the present results certainly confirmed their common features, particularly in light of the strong correlation observed between measures of each construct, the data also suggested that there may be important differences between worry and rumination, which may have clinical ramifications. Differences observed in the patterns of change in worry and rumination across the two studies are interesting outcomes of this research. In Study One, there was no change in the participant’s worry at post-treatment, yet her rumination decreased substantially and was maintained at follow-up. In Study Two, there were significant reductions in participants’ worry and rumination, but the follow-up trend indicated a greater reduction in worry from post-treatment to follow-up. While the follow-up findings must be interpreted with caution based the size of the sample who completed
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follow-up measures, a possible explanation for these differences in the changes in worry and rumination may be that there are inherent differences in these constructs which mediate the impact of an ACT intervention. For example, as suggested in Study Two, it is possible that rumination (and particularly depression-related rumination) is more closely associated with psychological symptoms than worry, such that change in this construct is likely to be particularly affected by change in symptomatology, whereas worry may be less sensitive to changes in depression and anxiety. The present results are consistent with this explanation, as the participant in Study One’s rumination reduced with her anxiety, and the reduction in both variables were maintained, while in Study Two, there was a rebound in participants’ rumination, depression and anxiety following the intervention, yet worry continued to decline following the conclusion of the intervention. These findings suggest that worry is more independent of psychological symptomatology than rumination, which may represent important differences between the two constructs requiring further clarification.

Alternatively, the differences in the changes in worry and rumination observed across the two studies may be a result of the different ACT interventions undertaken. The intervention in Study One consisted of six two-hour sessions and one four-hour session (a combination of the final two sessions), whereas the Study Two intervention comprised 10 sessions which were 4.5 hours each. This extended length of the second intervention may have provided more opportunity for the consolidation of ACT concepts, which may be especially necessary for worry. This intervention was highly effective in targeting worry. Worry continued to decrease substantially following the conclusion of the treatment programme, indicating that the participants had generalized the ACT strategies in relation to their worry management beyond the intervention itself. The participant in Study One may have benefited from a longer and more comprehensive intervention, particularly as her worry
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was highly entrenched and long-standing. Therefore, the present results may suggest that a 10-week ACT incorporating sessions of 4.5 hours each in duration is more effective than an 8-week intervention incorporating sessions of 2 hours each in duration in creating a shift in worry, and future research should explore the duration of an ACT intervention required to reduce worry and rumination in sustainable way.

Future directions

The present findings provide support for the effectiveness of ACT in the treatment of worry and rumination, and indicate that it is not necessary to explicitly target these cognitive processes in order to reduce the frequency and intensity with which they occur, and the distress they are associated with. These findings are important as the studies described were the first to examine the treatment of both worry and rumination as co-occurring, transdiagnostic processes. While the research yielded promising results, the findings should only be considered as preliminary, and there is certainly room for improvement in the effectiveness of ACT for worry and rumination if it is to be considered an evidence-based treatment in this area. For example, Study One data indicated that the intervention did not reduce the participant’s worry, which was a long-standing problem for her and a significant source of distress. The participant in Study One also did not adopt an ACT approach to her worry and rumination and made few explicit references to worry and rumination in the qualitative interview, suggesting that while the intervention assisted her in managing her psychological distress, it was not specific enough in targeting worry and rumination. Furthermore, in Study Two, while the intervention was effective in reducing worry and rumination, rumination was associated with greater change than worry, and only changes in worry were maintained at follow-up. Also, the capacity to draw firmer conclusions regarding
the effectiveness of ACT for worry and rumination is limited by the high rate of attrition and the fact that the follow-up findings are based on such a small sample of participants.

To ensure that an ACT intervention targets worry and rumination in a specific, unified and consistent way, it may be important to tailor the intervention to more explicitly focus on these cognitive processes. While ACT is a transdiagnostic approach that theoretically can be applied to all psychological problems, individuals have adapted the standard ACT treatment framework to specifically target different psychological problems in order to enhance the effectiveness and efficiency of therapy and improve outcomes for the client (e.g. Act for Anxiety, Eifert & Forsyth, 2005; ACT for Depression, Zettle, 2007). While ACT is a flexible therapy which does not involve prescriptive interventions and adherence to a sequential structure, ACT treatment protocols frame the particular psychological problem within ACT parameters and provide a “road map” for clinicians to guide them in the process of therapy.

**ACT for worry and rumination: towards an improved understanding and a treatment protocol.**

Based on the literature on worry and rumination reviewed in earlier chapters and drawing on the findings of studies one and two, there are some clear ways in which an ACT treatment protocol could be tailored to more specifically target worry and rumination. Chapter Five outlined a theoretical rationale for the application of ACT to worry and rumination, based on ACT’s focus on reducing experiential avoidance, and the hypothesised relevance of ACT therapeutic components in ameliorating the negative effects of these cognitive processes. In revisiting this rationale in the context of the present research findings, further steps can be taken towards proposing an ACT model of worry and rumination and putting forward a targeted treatment protocol.
An ACT model of worry and rumination.

Based on its theoretical foundations, an ACT model of worry and rumination would emphasise that these processes are not bad or aversive in themselves; rather, that it is in the context in which they occur and how the individual responds to them that determine whether they are problematic or not. This view of worry and rumination is consistent with the literature which highlights that worry and rumination are normal processes experienced by clinical and non-clinical populations, and should only be considered pathological when they cause the individual significant distress or impairment to functioning (Martin & Tesser, 1996; Ruscio et al., 2001; Szabó and Lovibond, 2002; Tallis et al., 1994; Treynor et al., 2003).

Within an ACT framework, a problematic context in which worry and rumination may occur is one of experiential avoidance and psychological inflexibility. As highlighted throughout this research, worry and rumination can operate as mechanisms of experiential avoidance whereby instead of experiencing and accepting a difficult internal event – whether it fear, sadness, uncertainty, confusion, vulnerability, guilt – an individual responds by diverting their focus to the cognitive level and engaging in worry and/or rumination, as opposed to processing their distress emotionally. In light of the repetitive and cyclical nature of these cognitive processes, the individual is likely to then become “fused” with their worry and rumination, which exacerbates their sense of threat or hopelessness and makes it difficult for them to shift their attention. It is likely that psychological inflexibility develops as worry and rumination become part of the individual’s increasingly narrow repertoire of responses to distressing stimuli, leaving minimal opportunity for engagement in adaptive action which would promote positive change in the individual’s world. This is consistent with the literature which highlights that worry and rumination interfere with instrumental behavior (Nolen-Hoeksema et al., 2008). It is likely that an individual’s engagement in worry and rumination
as a response to experiential avoidance would represent a long-standing pattern that is automatic and occurs outside of their conscious awareness, and therefore it is important for therapy to bring awareness to the role worry and rumination in relation to the urge to control and avoid difficult psychological experiences.

In considering the impact of the engagement in worry and rumination as avoidance strategies over time, it is easy to see how worry and rumination can lead to the development of anxiety, depression, and other psychological problems. Furthermore, once psychological symptoms have developed, it is likely that they provide more content for the individual to incorporate into the focus of their worry and rumination, leading to a likely exacerbation. Furthermore, once an emotional disorder develops, it is likely that depressed or anxious mood act as a cue for worry and rumination, and worry and/or rumination act as a cue for depressed or anxious mood. Thus, in linking this ACT model of worry and rumination back to the broader literature on worry and rumination in particular, it is proposed that a) depressive rumination (and anxious rumination) develops from a more a more global form of rumination when it occurs in the context of long-standing experiential avoidance and psychological inflexibility; and b) that once clinical levels of emotional distress develops, it is likely that worry/rumination and anxiety/depression maintain the occurrence of each other, which increasingly exacerbates the individual’s distress and functional impairment.

**ACT for worry and rumination: treatment framework**

In light of this account of ACT for worry and rumination, an ACT approach should focus not on reducing worry and rumination, but on assisting the individual to change the context in which they occur. This would involve assisting the individual to recognise the role worry and rumination play in relation to experiential avoidance, gain insight into the detrimental consequences of worry and rumination in the context of psychological
inflexibility, and to gradually expand their repertoire of values-based behavioural responses to emotional distress. As an initial step in the development of a treatment protocol for ACT for worry and rumination, Table 9 outlines each of the core ACT therapeutic processes and how they can be tailored to more specifically target rumination and worry.

Table 9.

**ACT for Worry and Rumination Proposed Therapeutic Components**

<table>
<thead>
<tr>
<th>ACT Treatment Process</th>
<th>Applied to Worry and Rumination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative Hopelessness</td>
<td>• Discuss the control agenda and experiential avoidance</td>
</tr>
<tr>
<td></td>
<td>• Define worry and rumination and how they operate in the individual’s life</td>
</tr>
<tr>
<td></td>
<td>• Discuss the function of worry and rumination, highlighting their avoidant functions</td>
</tr>
<tr>
<td></td>
<td>• Develop a formulation of how worry and rumination operate for the individual as mechanisms of experiential avoidance</td>
</tr>
<tr>
<td></td>
<td>• Discuss patterns and costs of engaging in worry and rumination in the service of avoidance</td>
</tr>
<tr>
<td></td>
<td>• Establish that control and avoidance are the problem – not worry and rumination</td>
</tr>
<tr>
<td>Acceptance</td>
<td>• Acceptance and willingness as the alternative to avoidance</td>
</tr>
<tr>
<td></td>
<td>• Cultivate practice of willingness instead of worry and rumination in response to distress</td>
</tr>
<tr>
<td></td>
<td>• Acceptance of the mind’s tendency to engage in worry and rumination – efforts should not be directed at stopping this, but on more workable action</td>
</tr>
<tr>
<td>Cognitive Defusion</td>
<td>• Focus is on worry and rumination as processes rather than individual thoughts. For example, instead of “I’m noticing that I am having the thought that X”, one might say “I’m noticing that my mind is starting to ruminate” or “I’m feeling the urge to start worrying”</td>
</tr>
<tr>
<td></td>
<td>• Defusion efforts are focused on identifying when thoughts as occurring as part of an episode of worry or rumination, and defusing from the process</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>• Mindfulness practice aimed at increasing awareness of thoughts and feelings</td>
</tr>
<tr>
<td></td>
<td>• Increase mindfulness of “choice points” – notice when episodes of worry and rumination begin and shift attention away from thoughts and onto acceptance of emotions or adaptive action</td>
</tr>
<tr>
<td>Self-as-Context</td>
<td>• Enhance awareness of the “observing self” and distinguish between the part of the self that worries</td>
</tr>
</tbody>
</table>
and ruminates and the part of the self that can observe this occurring
- Defusion from the conceptualised self that is associated with worry and rumination – e.g. “I’ve always been a worrier” “I overthink everything”
- In conjunction with other ACT processes, aimed at promoting psychological flexibility and creating space for behavioural change

### Values
- Values identification

### Committed Action
- Identification of desired behaviours/actions that are values-consistent
- Setting goals around these behaviours with the aim of bringing one closer to living in accordance with one’s values
- Emphasis is on increasing action rather than decreasing worry and rumination
- Discussion of potential barriers to action – such as painful feelings, worry and rumination – and problem-solving/discussion of solutions

The proposed treatment framework represents only a first step to better target ACT therapeutic processes in the treatment of worry and rumination. This framework requires empirical validation in order to gauge its value in the treatment of worry and rumination. Similarly, as the first empirical exploration of ACT for worry and rumination, the present findings represent only preliminary evidence, and further research is recommended in this area. Randomised clinical trials are advocated to explore the efficacy of ACT in relation to other treatments for worry and rumination, such as CBT and metacognitive therapy, in order to gain a better understanding of the impact of ACT.

A further area for exploration is whether the impact of ACT on worry and rumination is mediated by a client’s prior experience with CBT. Study One suggested that the participant’s experience of ACT may have been affected by her extensive prior experience with CBT, however a deeper exploration of this issue was beyond the scope of Study Two. The research raised some interesting questions regarding the relationship between ACT and CBT, and this warrants further investigation as it is likely to have practical implications. As
ACT FOR WORRY AND RUMINATION

ACT gains increasing support, it is necessary to understand and address the potential challenges clinicians may face in working with clients who are familiar with a therapeutic approach that differs in crucial (and potentially opposing) ways to ACT. It is necessary for the ACT versus CBT debate to go beyond the theoretical world and to deal with the reality that these two therapies are often used by the same clinicians, with the same clients. This can only lead to improved outcomes for clients.

In sum, as preliminary findings, the present results provide early encouraging support for the application of ACT to the treatment of worry and rumination, which are important transdiagnostic processes that should arguably be considered by all therapists working with clients with emotional disorders, given their high prevalence and detrimental correlates. While there were several limitations associated with both studies, the fact that the research yielded theoretically consistent outcomes is promising. Taken together, the results of this research programme add to the separate bodies of literature on worry and rumination and ACT, as well as beginning a discussion on the application of ACT to worry and rumination.
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Cognitive Therapy and Research, 28(5), 645-668. doi: 10.1023/B:COTR.0000045570.62733.9f


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http://search.proquest.com/docview/304842950?accountid=13552 ProQuest

Dissertations & Theses (PQDT) database.


ACT FOR WORRY AND RUMINATION


ACT FOR WORRY AND RUMINATION


ACT FOR WORRY AND RUMINATION


APPENDICES
APPENDIX A.

QUESTIONNAIRE PACKAGE
### DASS21

**Name:**

**Date:**

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

*The rating scale is as follows:*

- 0: Did not apply to me at all
- 1: Applied to me to some degree, or some of the time
- 2: Applied to me to a considerable degree, or a good part of the time
- 3: Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
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<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
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<tr>
<td>3</td>
<td>I couldn’t seem to experience any positive feeling at all</td>
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<td>4</td>
<td>I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
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<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
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<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
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<td>7</td>
<td>I experienced trembling (e.g., in the hands)</td>
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<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
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<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
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<td>10</td>
<td>I felt that I had nothing to look forward to</td>
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<tr>
<td>11</td>
<td>I found myself getting agitated</td>
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<td>12</td>
<td>I found it difficult to relax</td>
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<td>13</td>
<td>I felt down-hearted and blue</td>
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<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
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<tr>
<td>15</td>
<td>I felt I was close to panic</td>
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<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
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<td>17</td>
<td>I felt I wasn’t worth much as a person</td>
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<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
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<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)</td>
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<td>20</td>
<td>I felt scared without any good reason</td>
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<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
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</tbody>
</table>
### 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

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Think about how alone you feel</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Think “I won’t be able to do my job if I don’t snap out of this”</td>
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<tr>
<td>3</td>
<td>Think about your feelings of fatigue and achiness</td>
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<td></td>
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<tr>
<td>4</td>
<td>Think about how hard it is to concentrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>Think “What am I doing to deserve this?”</td>
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<td></td>
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<tr>
<td>6</td>
<td>Think about how passive and unmotivated you feel</td>
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<tr>
<td>7</td>
<td>Analyze recent events to try to understand why you are depressed</td>
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<tr>
<td>8</td>
<td>Think about how you don’t seem to feel anything anymore</td>
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<tr>
<td>9</td>
<td>Think “Why can’t I get going?”</td>
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<td>10</td>
<td>Think “Why do I always react this way?”</td>
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<tr>
<td>11</td>
<td>Go away by yourself and think about why you feel this way</td>
<td></td>
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<tr>
<td>12</td>
<td>Write down what you are thinking about and analyze it</td>
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<tr>
<td>13</td>
<td>Think about a recent situation, wishing it had gone better</td>
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<td></td>
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<tr>
<td>14</td>
<td>Think “I won’t be able to concentrate if I keep feeling this way.”</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>Think “Why do I have problems other people don’t have?”</td>
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<tr>
<td>16</td>
<td>Think “Why can’t I handle things better?”</td>
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<tr>
<td>17</td>
<td>Think about how sad you feel.</td>
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<tr>
<td>18</td>
<td>Think about all your shortcomings, failings, faults, mistakes</td>
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<tr>
<td>19</td>
<td>Think about how you don’t feel up to doing anything</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>20</td>
<td>Analyze your personality to try to understand why you are depressed</td>
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<tr>
<td>21</td>
<td>Go some place alone to think about your feelings</td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>Think about how angry you are with yourself</td>
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</tbody>
</table>
### Penn State Worry Questionnaire (PSWQ)

Please circle the number that best describes how typical or characteristic each item is of you.

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I don’t have enough time to do everything I don’t worry about it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My worries overwhelm me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I don’t tend to worry about things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Many situations make me worry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I know I shouldn’t worry about things, but I just can’t help it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. When I am under pressure I worry a lot</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I am always worrying about something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I find it easy to dismiss worrisome thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. As soon as I finish one task, I start to worry about everything else I have to do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I never worry about anything</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. When there is nothing more I can do about a concern, I don’t worry about it any more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I’ve been a worrier all my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I notice that I have been worrying about things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Once I start worrying, I can’t stop</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I worry all the time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I worry about projects until they are all done</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**Day-to-Day Experiences**

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Always</td>
<td>Very Frequently</td>
<td>Somewhat Frequently</td>
<td>Somewhat Infrequently</td>
<td>Very Infrequently</td>
<td>Almost Never</td>
</tr>
</tbody>
</table>

I could be experiencing some emotion and not be conscious of it until some time later.  
I break or spill things because of carelessness, not paying attention, or thinking of something else.  
I find it difficult to stay focused on what’s happening in the present.  
I tend to walk quickly to get where I’m going without paying attention to what I experience along the way.  
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.  
I forget a person’s name almost as soon as I’ve been told it for the first time.  
It seems I am “running on automatic,” without much awareness of what I’m doing.  
I rush through activities without being really attentive to them.  
I get so focused on the goal I want to achieve that I lose touch with what I’m doing right now to get there.  
I do jobs or tasks automatically, without being aware of what I’m doing.  
I find myself listening to someone with one ear, doing something else at the same time.

*Revised date (4 October 2006)*
ACT FOR WORRY AND RUMINATION

I drive places on ‘automatic pilot’ and then wonder why I went there.

1 2 3 4 5 6

I find myself preoccupied with the future or the past.

1 2 3 4 5 6

I find myself doing things without paying attention.

1 2 3 4 5 6

I snack without being aware that I’m eating.

1 2 3 4 5 6
Valued Living Questionnaire

Below are areas of life that are valued by some people. We are concerned with your quality of life in each of these areas. One aspect of quality of life involves the importance one puts on different areas of living. Rate the importance of each area (by circling a number) on a scale of 1-10. 1 means that area is not at all important. 10 means that area is very important. Not everyone will value all of these areas, or value all areas the same. Rate each area according to your own personal sense of importance.

<table>
<thead>
<tr>
<th>Area</th>
<th>not at all important</th>
<th>extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family (other than marriage or parenting)</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>2. Marriage/couples/intimate relations</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>3. Parenting</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>4. Friends/social life</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>5. Work</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>6. Education/training</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>7. Recreation/fun</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>8. Spirituality</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>9. Citizenship/Community Life</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
<tr>
<td>10. Physical self care (diet, exercise, sleep)</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
</tbody>
</table>
In this section, we would like you to give a rating of how consistent your actions have been with each of your values. We are not asking about your ideal in each area. We are also not asking what others think of you. Everyone does better in some areas than others. People also do better at some times than at others. **We want to know how you think you have been doing during the past week.** Rate each area (by circling a number) on a scale of 1-10. 1 means that your actions have been completely inconsistent with your value. 10 means that your actions have been completely consistent with your value.

### During the past week

<table>
<thead>
<tr>
<th>Area</th>
<th>not at all consistent with my value</th>
<th>completely consistent with my value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family (other than marriage or parenting)</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>2. Marriage/couples/intimate relations</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>3. Parenting</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
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<td>5. Work</td>
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<tr>
<td>10. Physical self care (diet, exercise, sleep)</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
# AAQ-II

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>never true</td>
<td>very seldom true</td>
<td>seldom true</td>
<td>sometimes true</td>
<td>frequently true</td>
<td>almost always true</td>
<td>always true</td>
<td></td>
</tr>
</tbody>
</table>

1. My painful experiences and memories make it difficult for me to live a life that I would value.  
2. I’m afraid of my feelings.  
3. I worry about not being able to control my worries and feelings.  
4. My painful memories prevent me from having a fulfilling life.  
5. Emotions cause problems in my life.  
6. It seems like most people are handling their lives better than I am.  
7. Worries get in the way of my success.
Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never true</td>
<td>very seldom true</td>
<td>seldom true</td>
<td>sometimes true</td>
<td>frequently true</td>
<td>almost always true</td>
<td>always true</td>
</tr>
</tbody>
</table>

1. My thoughts cause me distress or emotional pain
2. I get so caught up in my thoughts that I am unable to do the things that I most want to do
3. Even when I am having distressing thoughts, I know that they may become less important eventually
4. I over-analyse situations to the point where it’s unhelpful to me
5. I struggle with my thoughts
6. Even when I’m having upsetting thoughts, I can see that those thoughts may not be literally true
7. I get upset with myself for having certain thoughts
8. I need to control the thoughts that come into my head
9. I find it easy to view my thoughts from a different perspective
10. I tend to get very entangled in my thoughts
11. I tend to react very strongly to my thoughts
12. It’s possible for me to have negative thoughts about myself and still know that I am an OK person
13. It’s such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful

Thank you for completing this questionnaire
SHEEHAN DISABILITY SCALE

A BRIEF, PATIENT RATED, MEASURE OF DISABILITY AND IMPAIRMENT

Please mark ONE circle for each scale.

WORK* / SCHOOL

The symptoms have disrupted your work / school work:

- Not at all
- Mildly
- Moderately
- Markedly
- Extremely

[ ] I have not worked/studied at all during the past week for reasons unrelated to the disorder.
* Work includes paid, unpaid volunteer work or training

SOCIAL LIFE

The symptoms have disrupted your social life / leisure activities:

- Not at all
- Mildly
- Moderately
- Markedly
- Extremely

FAMILY LIFE / HOME RESPONSIBILITIES

The symptoms have disrupted your family life / home responsibilities:

- Not at all
- Mildly
- Moderately
- Markedly
- Extremely

DAYS LOST

On how many days in the last week did your symptoms cause you to miss school or work or leave you unable to carry out your normal daily responsibilities? ________

DAYS UNDERPRODUCTIVE

On how many days in the last week did you feel so impaired by your symptoms, that even though you went to school or work, your productivity was reduced? ________
4. Satisfaction with Life as a Whole and The PWI Scale (Written Format)

4.1 Instructions for Written Format (i.e. test items answered in written questionnaire)

The following questions ask how satisfied you feel, on a scale from zero to 10. Zero means you feel completely dissatisfied. 10 means you feel completely satisfied. And the middle of the scale is 5, which means you feel neutral, neither satisfied nor dissatisfied.

4.2 Test Items

Part 1 [Optional Item]

1. “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?”

Part 2

1. “How satisfied are you with your standard of living?”

2. “How satisfied are you with your health?”

3. “How satisfied are you with what you are achieving in life?”
4. Satisfaction with Life as a Whole and The PWI Scale (Written Format) continued

4. “How satisfied are you with your personal relationships?”

5. “How satisfied are you with how safe you feel?”

6. “How satisfied are you with feeling part of your community?”

7. “How satisfied are you with your future security?”

8. “How satisfied are you with your spirituality or religion?”
APPENDIX B.

STUDY ONE RMIT ETHICS APPROVAL LETTER

Human Research Ethics Committee (HREC)
Research and Innovation office

Notice of Approval

Date: 12 April 2011
Project number: 62/10
Project title: Acceptance and commitment therapy (ACT) for rumination and worry in individuals with anxiety and depression: A randomised control trial
Risk classification: More than low risk
Investigator: Monique Slevison & Sarah Borchier
Approved: From: 12 April 2011 To: 31 December 2013

Terms of approval:

1. **Responsibilities of investigator**
   It is the responsibility of the above investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by HREC. Approval is only valid whilst investigator holds a position at RMIT University.

2. **Adverse events**
   You should notify HREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

3. **Plain Language Statement (PLS)**
   The PLS and any other material used to recruit and inform participants of the project must include the RMIT university logo. The PLS must contain a complaints clause including the above project number.

4. **Amendments**
   To amend any approved documents or other aspects of the approved project (including changes in personnel) requires the submission of a request for amendment form to HREC. Amendments must not proceed without approval from HREC. Substantial variations may require a new application.

5. **Annual reports**
   Continued approval of this project is dependent on the submission of an annual report.

6. **Final report**
   A final report must be provided at the conclusion of the project. HREC must be notified if the project is discontinued before the expected date of completion.

7. **Monitoring**
   Projects may be subject to an audit or any other form of monitoring by HREC at any time.

8. **Retention and storage of data**
   The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

[Other optional conditions]
9. That the investigator/principal investigator is responsible for ensuring that permission letters [from external agencies] are obtained, if relevant, and a copy forwarded to RMIT HREC before any data collection can occur at the specified organisation.

In any future correspondence please quote the project number and project title above.

A/Prof Barbara Polus  
Chairperson  
RMIT HREC

cc: Dr Peter Burke (Ethics Officer/HREC secretary), Keong Yap (Supervisor).
Notice of Approval of Amendment

Date: 16 May 2012
Project number: 62/10
Project title: *Acceptance and commitment therapy (ACT) for rumination and worry in individuals with anxiety and depression: A randomised control trial*
Risk classification: More than low risk
Investigator: Monique Slemon
Expiry: 31 December 2013

Project amended on 16 May 2012:
- Use a case study methodology instead of randomised controlled trial.
- Employ qualitative follow up research.
- Add a supervisor to the project.

Terms of approval:
1. Responsibilities of investigator
   It is the responsibility of the above investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by HREC. Approval is only valid whilst investigator holds a position at RMIT University.
2. Adverse events
   You should notify HREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
3. Plain Language Statement (PLS)
   The PLS and any other material used to recruit and inform participants of the project must include the RMIT university logo. The PLS must contain a complaints clause including the above project number.
4. Amendments
   To amend any approved documents or other aspects of the approved project (including changes in personnel) requires the submission of a request for amendment form to HREC. Amendments must not proceed without approval from HREC. Substantial variations may require a new application.
5. Annual reports
   Continued approval of this project is dependent on the submission of an annual report.
6. Final report
   A final report must be provided at the conclusion of the project. HREC must be notified if the project is discontinued before the expected date of completion.
7. Monitoring
   Projects may be subject to an audit or any other form of monitoring by HREC at any time.
8. Retention and storage of data
   The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

A/Prof Barbara Polus
Chairperson
RMIT HREC
Thank you for participating in our research project, which was conducted by the Division of Psychology at RMIT University. The researchers would like to complete an additional phase of research with the individuals who participated in the Acceptance and Commitment Therapy (ACT) group treatment program. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

What this project is about and why it is being undertaken

Acceptance and Commitment Therapy (ACT) is a new type of psychological therapy that helps people deal with difficult thoughts and feelings so that they can focus on doing things that are important in their lives. Several studies have shown that this treatment works for depression and anxiety, and we would also like to find out whether ACT is helpful in reducing worrying and rumination.

The first round of the research involved running ACT therapy sessions in group format. We would now like to complete a second round of research which will involve talking to individuals who participated in the group treatment program about their experience of the program, their views about ACT, and the impact that learning ACT has had on them.

What participation will involve – time, effort, resources, costs, etc.

Participation in this second phase of the research involves attending one 30-60 minute interview with one of the researchers. If you agree to participate you will meet with the researcher one-on-one at the RMIT Psychology Clinic. You will be asked a range of questions about your experience of participating in the ACT group program, for example, which parts were most helpful/not helpful, how it has impacted you overall, and which skills and strategies you continue to use. You will also be asked to provide any general feedback regarding ACT, group treatment, or the facilitation of the groups. You input in the interview will be used to help the researchers to better understand the effectiveness of ACT for treating depression and anxiety, and the impact it has on individual participants.

Participant rights and interests

Your participation in this second round of the research is completely voluntary. You are under no obligation to agree to participate in an interview.

Participant rights and interests – Privacy & Confidentiality
The interviews will be videotaped so that they can be transcribed and then analysed. All videos will be stored in a locked filing cabinet. All electronic data will be stored on password protected computers. In accordance with the Australian Code for the Responsible Conduct of Research, all information (hard copy and electronic data) will be stored for a minimum of fifteen years after final publication of the data, after which it will be destroyed. We plan to present and publish group results in psychology conferences and academic journals; however all information in publications and conference presentations will be provided in such a way that you cannot be identified.

As a participant in this project your confidentiality will be maintained at all times, except in the event that failure to disclose any information would place you or another person at risk. Although a very unlikely situation, if risk of suicide is assessed to be increased the investigators actions of referral to services such as a Crisis Assessment Team or the emergency department will be consistent with ethical guidelines published by the Australian Psychological Society (APS). If the participant does not provide consent to contact these services and the investigators evaluate the risk of harm to be high, it is consistent with the APS ethical guidelines to breach confidentiality and engage such services.

Further information about the project – who to contact

If you would like further information about the project, please do not hesitate to contact: Monique Slevison, Email: monique.slevison@student.rmit.edu.au.

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. Details of the complaints procedure are available at: http://www.rmit.edu.au/rd/hrec_complaints
APPENDIX E.

STUDY ONE PARTICIPANT CONSENT FORM

Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews, Questionnaires or Disclosure of Personal Information

Portfolio
School of Health Sciences

Name of participant: ____________________________

Project Title: Acceptance and Commitment Therapy (ACT) for rumination and worry in individuals with anxiety and depression: A randomized control trial

Name(s) of investigators: (1) Sarah Bourchier Phone: 99257603
(2) Monique Slevison Phone: 99257603
(3) Dr. Keong Yap Phone: 99256692

1. I have received a statement explaining the treatment, interview and questionnaires involved in this project.

2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.

3. I authorise the investigator or his or her assistant to administer group therapy, an interview and questionnaires to me.

4. I consent to the group therapy sessions which i will participate in to be video recorded.

5. I acknowledge that:
   (a) Having read Plain Language Statement, I agree to the general purpose, methods and demands of the study.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
   (d) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to participants upon request. Any information which will identify me will not be used.

Participant’s Consent

Participant: ____________________________

Date: ____________________________

(Signature)

Witness: ____________________________

Date: ____________________________

(Signature)

Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 2251.

Details of the complaints procedure are available from the above address.
Dear Rater,

Thank you again for volunteering to participate as a visual inspector for this research project. Please find below the instructions on how to complete the visual inspection task.

Each graph represents the participant’s scores on one variable (nine variables in total). For each variable, the participant has three scores, which represent their obtained score at pre-intervention, post-intervention, and 3-month follow-up. Standard Error of Measurement (SEm) bars have also been included. These show the range in which we can be 95% confident that the participant’s true score lies. You are required to assess the level of change from:

a) Pre-intervention to Post-intervention
b) Post-intervention to Follow-up
c) Pre-intervention to Follow-up

Please use the criteria below to assess the level of change each participant has achieved on each of the variables.

1. **Substantial change** – data shows that the intervention resulted in a significant increase or decrease in the variable (i.e., an increase towards the maximum possible score; decrease towards the minimum possible score). There is a gap between the Standard Error of Measurement bars.

2. **Moderate change** – data shows that the intervention resulted in a clear increase to decrease in the variable; but the change is not sufficient to be considered substantial. There is a minimal overlap between the Standard Error of Measurement bars (i.e., the end of one SEm bar does not overlap past the midpoint of the other SEm).

3. **No change** – data shows that the intervention resulted in no change in the variable across time. There is no significant overlap between the Standard Error of Measurement bars (i.e., the end of one SEm bar does overlap past the mid-point of the other SEm).

Please complete the attached sheets for each variable (1-9), indicating the level of change you believe the data best represents. Thank you.
APPENDIX G.

STUDY TWO – RMIT ETHICS APPROVAL LETTER

RMIT University
Science Engineering and Health
College Human Ethics Advisory Network (CHEAN)
Plenty Road
Bundoora VIC 3083
PO Box 71
Bundoora VIC 3083
Australia
Tel: +61 3 9925 7096
Fax 61 3 9925 6506
* www.rmit.edu.au

13th September 2012

Keong Yap
Building 201 Level 3, Room 12
School of Health Sciences
RMIT University
Bundoora West Campus

Dear Keong,

ASEHAPP 31 – 12 YAP An Evaluation of The Melbourne Clinic Acceptance and Commitment Therapy (ACT) Group Program

Thank you for submitting your application for consideration by the Science, Engineering and Health College Human Ethics Advisory Network (CHEAN) of RMIT University.

Your application was considered at the meeting 08 – 12 on, Wednesday 12th September 2012. The CHEAN notes that this project has been approved by the Human Research Ethics Committee from The Melbourne Clinic.

With research projects that involve applications to more than one Human Research Ethics Committee (HREC), the Science, Engineering and Health College Human Ethics Advisory Network (CHEAN) adopts the following policy:

Where a research project is submitted to more than one HREC, one of those HRECs will be designated the primary HREC. The primary HREC will be the HREC associated with the organisation that has the primary ethical duty of care over the research participants.

In the event that the Science, Engineering and Health CHEAN is not the primary HREC, its role will be to endorse and affirm the decision of the primary HREC, provided the primary HREC is properly constituted under Australian Health Ethics Committee and National Health and Medical Research Council guidelines.

To do this, the Science, Engineering and Health CHEAN requires a copy of all documentation associated with the application to the primary HREC, including letters of approval. The Science, Engineering and Health CHEAN reserve the right to request changes to the ethical conduct of the research in order to meet RMIT University requirements.

In the case of your research project, the Science, Engineering and Health CHEAN ‘A’ has received a copy of all of the documentation related to your application to the human research ethics committee noted above; therefore, the Science, Engineering and Health CHEAN ‘B’ is able to endorse and affirm the decision of that committee.

Please note that annual reports are due during December for all research projects that have been approved or endorsed by the CHEAN.

Your CHEAN Reference number is ASEHAPP 31– 12 please refer to this number when submitting your annual/final report.
The CHEAN will accept annual/final reports on the external HREC forms for applications they have endorsed.

If you have any questions about this letter or about any ethical issues that arise during the conduct of your research, please contact the Chair of the CHEAN directly.

Yours sincerely

[Signature]

Linda Jones
Chair, Science Engineering & Health
College Human Ethics Advisory Network

Cc Other Investigator/s:  
Ms Lily Shutkhin The Melbourne Clinic
Andrea Chester School of Health Sciences RMIT University
Mandy Kionhuis School of Health Sciences RMIT University
Monique Slevison Student School of Health Sciences RMIT University
Richelle Pinto Student School of Health Sciences RMIT University
APPENDIX H.

STUDY TWO – THE MELBOURNE CLINIC ETHICS APPROVAL LETTER

The Melbourne Clinic
130 Church Street
Richmond VIC 3121

Ph: (03) 9429 4688
Fax: (03) 9427 7668
www.healthscope.com.au
A Healthscope Hospital

Dear Dr Yap

Re: Project 211: An evaluation of The Melbourne Clinic Acceptance and Commitment Therapy
Program.
I confirm that at the meeting on 13 June 2012 of The Melbourne Clinic Research Ethics Committee
the above project was tabled, discussed and approved.

Methodology
The Committee would like the Exclusion Criteria to be more fully described in terms of – diagnostic
categories which would be excluded e.g. dementia and psychosis, age exclusions.

Consent Form – Patients
1. The grammatical error on Page 1, Line 8 to be corrected – Principle Investigator, should read
   Principal Investigator.
2. The Risks and benefits (Page 1 Section 2), should be more fully explained for greater patient
   understanding.
3. The Melbourne Clinic logo should be placed at the top of both the Patient Information and
   Consent Form pages.
4. The Patient Information Form should contain a section which directs patients to whom they
   can go if they have any complaints about the conduct of the study – Dr Harry Derham
   Chairman Research Ethics Committee Ph: 9420 9350.

Consent Form - Staff
1. The Committee requests that a separate Consent Form be designed for the Group
   Facilitators, (Process Measures section in the TMC Application Form), to acknowledge that
   they agree to being either observed, video or audio taped.
2. The Committee also requires that the staff Consent Form and any checklist that is developed
   (for the purpose of determining adherence to the manualised treatment), are forwarded to
   the Research Ethics Committee for review.

Retrospective Data.
The researchers have requested access to data previously collected from program participants. The
Committee advises that written Consent must be sought if the data is used for research/publication
purposes. If a Consent Form was used to collect the earlier data then The Consent Form should
forwarded to the Ethics Committee for review, if this was not the case, then retrospective written
Consent should be sought from those past patients after the Committee has reviewed the Consent
Form to be used. The data should be then de-identified.
When the modifications have been made please forward them to the Secretariat for final approval by the Chairman.

I confirm for the record that although we do not list Committee members by name, the Committee is constituted and functions in accordance with the National Statement on Ethical Conduct in Research Involving Humans (2007) issued by the National Health and Medical Research Council (NHMRC) in accordance with the NHMRC Act, 1992.

Yours sincerely

[Signature]

Dr Harry Derham
Chair
Research Ethics Committee
INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PARTICIPANT INFORMATION

Project Title: An Evaluation of The Melbourne Clinic Acceptance and Commitment Therapy Program

Investigators:

Dr Keong Yap - Principal Investigator
School of Health Sciences
RMIT University
Email: Keong.yap@rmit.edu.au
Phone: 03 9925 6692

Ms Lily Shatkhin
Healthscope Mental Health Program Consultant
The Melbourne Clinic
E-mail: lily.shatkhin@healthscope.com.au
Phone: 03 94294688

Dr Mandy Kienhuis
School of Health Sciences
RMIT University
Email: mandy.kienhuis@rmit.edu.au
Phone: 9925 7400

Monique Slevison
Doctor of Clinical Psychology candidate
RMIT University
Email: s3267549@student.rmit.edu.au

Assoc Professor Andrea Chester
School of Health Sciences
RMIT University
Email: andrea.chester@rmit.edu.au
Phone: 9925 3150

Richelle Pinto
Master of Clinical Psychology candidate
RMIT University
Email: s3267348@student.rmit.edu.au

Dear Sir/Madam,

You are invited to participate in a research project being conducted by RMIT University and The Melbourne Clinic. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?

This research is being conducted as part of student research projects being undertaken by Doctor of Psychology student Monique Slevison and Master of Psychology student Richelle Pinto. The supervisors for this project are Dr Keong Yap, Dr Mandy Kienhuis and Associate Professor Andrea Chester from RMIT University. Ms Lily Shatkhin, Mental Health Program Consultant from The Melbourne Clinic, is acting as a consultant for this research. The study has been approved by the RMIT Human Research Ethics Committee and The Melbourne Clinic Research Ethics Committee.

Why have you been approached?

You have been approached with an invitation to participate in the research as you have registered to take part in The Melbourne Clinic Acceptance and Commitment Therapy day program. All individuals who have registered to participate in this program will be approached to take part in our research study.

What is the project about? What are the questions being addressed?

Acceptance and Commitment Therapy (ACT) is a new type of psychological therapy that helps people deal with difficult thoughts and feelings so that they can focus on doing things that are important in their lives. Several studies have shown that this treatment works for depression, anxiety, and other psychological disorders. However, more research needs to be conducted to evaluate the effectiveness of ACT in helping to improve a
variety of psychological symptoms. In particular, the researchers are interested in understanding whether ACT helps to reduce worry and rumination in individuals, and which aspects of therapy influence this. We would also like to evaluate how ACT therapy is conducted, as well as patients’ level satisfaction with the therapy. We expect that approximately 60 people will participate in the study.

If I agree to participate, what will I be required to do?

Participation will involve completing a questionnaire package four times during your enrolment in the The Melbourne Clinic ACT program. You will be asked to complete the questionnaire package before you begin the program, after you complete the program, one month following your completion of the program and six months following your completion of the program. The questionnaire package will take you approximately 20 minutes to complete, and will contain questions relating to various mental health aspects such as depression, anxiety, rumination, worry, valued living and mindfulness (for example, “Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week). We will also need to obtain information from the ACT program facilitator about your diagnosis and session attendance.

As part of the overall evaluation of the program, two of the ACT sessions will be observed by an RMIT researcher. The purpose of this observation is for quality assurance, and the researcher will be making observations of how the clinician conducts the group therapy. We would like to emphasise that the observer will not be making observations of patients or recording any content of patients’ discussions.

What are the possible risks or disadvantages?

There is minimal risk associated with participation in this research. Given that the research requires you to answer questions about your thoughts, feelings, and mental health, there is the slight possibility that some participants may be concerned or upset about their responses. If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact Dr Keong Yap as soon as convenient. Dr Yap will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

What are the benefits associated with participation?

While there are no direct benefits to participants associated with taking part in this research study, patients may find completing the questionnaires valuable in helping them to reflect on their progress made as a result of participating in the ACT program.

Furthermore, your participation will contribute to our understanding of ACT and its effectiveness.

What will happen to the information I provide?

Specific measures will be taken to retain confidentiality and privacy of information provided by participants. To protect your privacy, you will not need to write your name on any of the questionnaires. Instead, you will be asked a series of questions for a self-generated code so that we can link your response for each time point. All completed questionnaires will be stored in a locked filing cabinet and all electronic data will be stored on password protected computers. All information will be stored for a minimum of 5 years after final publication of the data, after which time it will be destroyed. We plan to present and publish group results in psychology conferences and academic journals. In any publication or conference presentation, information will be provided in such a way that you cannot be identified.

What are my rights as a participant?

Your participation in this study is completely voluntary. You are free to withdraw from the research project and discontinue completing the questionnaires at any time. This will not influence your participation in the group therapy should you wish to continue. You also have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant. Finally, you have the right to have any questions answered at any time throughout the research.
**Whom should I contact if I have any questions?**

If you would like further information about the project, please do not hesitate to contact:

Monique Slevison  
Email: s3267549@student.rmit.edu.au, or

Richelle Pinto  
Email: s3267348@student.rmit.edu.au

Yours sincerely,

Dr Keong Yap  
B.SocSci (Hons) NUS, DPsych (Clinical) Melb, GradCetHlthProfEd Monash, MAPS

Assoc Professor Andrea Chester  
PhD, MA (Women’s Studies), Grad Dip Couns Psych, B.A.

Dr Mandy Kienhuis  
B.B.Sc., B.App.Sc (Hons, Psych), Ph.D.

Ms Lily Shatkhin

Monique Slevison  
B.A. (Hons, Psych)

Richelle Pinto  
B.Sci (Psychology and Psychophysiology), B.A. (Hons, Psych)

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If you have any complaints about your participation in this project, please contact Dr Harry Derham, Chairman of The Melbourne Clinic Research Ethics Committee, on 9420 9350
CONSENT FORM
FOR INVOLVEMENT OF PARTICIPANTS IN MEDICAL RESEARCH

at....................................................
(Healthscope hospital)
(Approved by The Melbourne Clinic Research Ethics Committee)

I, ..................................................................................................................
(Name of participant)

agree to participate in a research project entitled "An Evaluation of The Melbourne Clinic Acceptance and Commitment Therapy Program", being conducted by Dr Keong Yap (Principal investigator), Dr Mandy Kienhuis, Lily Shatkhin, Associate Professor Andrea Chester, Monique Slevison, and Richelle Pinto.

My agreement is based on the understanding that:

1. My involvement entails:..............................................................................................................................
   ..............................................................................................................................................................
   ..............................................................................................................................................................

2. The following risks, discomforts and inconveniences have been explained to me:..........................
   ..............................................................................................................................................................
   ..............................................................................................................................................................

3. I have read the attached "Information Sheet" and understand the general purposes, methods and demands of the project.

4. I understand that the project may not be of direct benefit to me.

5. I can withdraw from the project at any time without my further therapy being affected in any way.

6. I am satisfied with the explanation given in relation to the project in so far as it affects me.

7. My consent to participate in this project is given freely.

8. I have been informed that the information I provide will be confidential.

SIGNED ................................................................................. DATE .........................
(Participant)
SIGNED ................................................................................. DATE .........................
(Researcher)

INDEPENDENT WITNESS: This document has been signed before me.

SIGNED ................................................................................. DATE .........................
Name of Witness (block letters) ..................................................................................
GUARDIAN (where applicable)
I, .................................................................................. plenary/limited guardian of .......................................................... (appointed by Order of Guardianship and Administration Board on .............................................) hereby consent to his/her participation in the research project described above.

SIGNED ..................................................................................
ACT FOR WORRY AND RUMINATION